

National Statistical Office

ANNUAL STATISTICAL BULLETIN

Producer Price Index and Inflation, Malawi: 2020-2021

Introduction

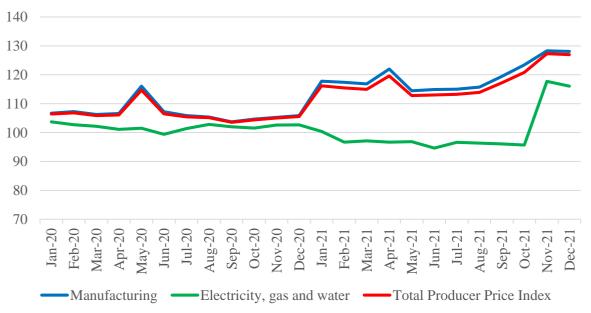
The Producer Price Index (PPI) is a statistical measure of the change in the price of a fixed set of outputs from one period to the next. The PPI captures changes in the factory gate output price of goods sold by Malawi manufacturers in the manufacturing, energy and water supply industries. The base period is set to yield an index value of 100 with weight reference period of 2019 and price reference period of January 2019.

Inflation rate measures the percentage change in the producer price index.

Summary of results

- The headline inflation rate for December 2021 was at 20.3 percent of which 19.1 percent came from manufacturing industries and 1.2 percent from utilities.
- The month-on-month inflation for December 2021 was at -0.3 percent.
- PPI for December 2021 was at 127.0 (Figure 1).

Figure 1: Producer Price Index, Malawi 2020-2021



Source: National Statistical Office, Producer Price Index 2020/2021

PPI and Inflation Rates

- The results generally show that headline inflation increased from June to November 2021. The headline inflation rate was highest in November at 21.2 percent and lowest in April at -1.6 percent.
- Similarly, month on month inflation rate for 2021 was the highest in November 2021. During the second half of the year 2021, month-month inflation rate displayed a positive trend except in December which was at -0.3 percent (Table 1).

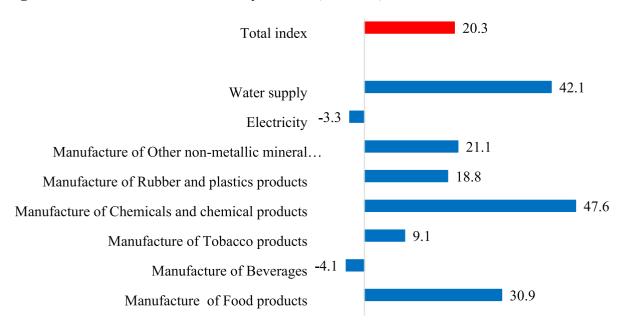
Table 1: Index values, Month to Month Inflation and Headline Inflation

	PPI Index (2019 = 100)	Month to Month Inflation	Headline Inflation
Jan-21	116.1	10.0	9.1
Feb-21	115.4	-0.6	8.1
Mar-21	115.0	-0.4	8.6
Apr-21	119.6	4.0	12.8
May-21	112.8	-5.7	-1.6
Jun-21	113.0	0.2	6.1
Jul-21	113.3	0.2	7.4
Aug-21	113.9	0.6	8.3
Sep-21	117.2	2.9	13.2
Oct-21	120.8	3.0	15.8
Nov-21	127.3	5.4	21.2
Dec-21	127.0	-0.3	20.3

Source: National Statistical Office, Producer Price Index 2020/2021

• Analysis by division shows that manufacture of chemicals and chemical products had the highest headline inflation rate at 47.6 percent. Water supply was the second highest with headline inflation rate of 42.1 percent. Manufacturing of food products' headline inflation rate was 30.9 percent. Manufacture of beverages and electricity had the least headline inflation rate at -4.1 percent and -3.3 percent respectively (Figure 2).

Figure 2: Headline Inflation Rate by Division, Malawi, December 2021



Source: National Statistical Office, Producer Price Index 2020/2021

Contribution to the Headline Inflation

- The highest contribution to the Headline Inflation rate for manufacturing industries in December 2021 was manufacture of Food products with 12.5 percentage points. Water supply provided the largest contribution towards Utilities (1.4 percentage points).
- Beverages and electricity were the only divisions that displayed a negative contribution to the overall Headline inflation rate of 0.4 and 0.2 percentage points respectively.

Table 2: Contribution to Headline Inflation Rate, Malawi, December 2021 (percentage points)

Total index	20.3
Total Manufacturing	19.1
Manufacture of Food products	12.5
Manufacture of Beverages	-0.4
Manufacture of Tobacco products	2.2
Manufacture of Chemicals and chemical products	3.2
Manufacture of Rubber and plastics products	1.0
Manufacture of Other non-metallic mineral products	0.6
Total Utilities (Electricity and water)	1.2
Electricity	-0.2
Water supply	1.4

Source: National Statistical Office, Producer Price Index 2020/2021

Technical notes

Survey Information

Introduction

- 1. The National Statistical Office (NSO) of Malawi conducts a survey of the production industries, covering manufacturing enterprises; electricity, gas, steam and air conditioning supply; and, water supply; sewerage, waste management and remediation activities. The data are collected from a sample of enterprises registered in the NSO's business register, which is based on information obtained via the Census of Economic Activities (CEA) for 2016 and 2017, augmented with information provided by the Malawi Revenue Authority (MRA). The data are collected via a face-to-face interview. The release contains monthly indices of the volume of production, which equates to gross value added in the national accounts, in the manufacturing, energy and water supply sector, and divisions within the manufacturing sector.
- 2. In accordance with international practice, the indices have recently been re-based, with the current base period of the index being 2019.
- 3. The NSO will continually update its business register to reflect establishment births and deaths on a quarterly basis using an updated list of establishments provided by the MRA.

Purpose of the survey

- 4. The results of the producer prices survey are used to calculate the transaction prices for commodities as they leave the factory. The PPI can be used as an economic indicator of inflation, as an escalator in contracts and as a deflator in the calculation of the national accounts
- 5. This survey covers manufacturing enterprises, where 'manufacturing' is broadly defined as the physical or chemical transformation of materials, substances, or components into new products, although this cannot be used as the single universal criterion for defining manufacturing. It also covers the energy and water sectors, which involves the activity of providing electric power, natural gas, steam, hot water and the like through a permanent infrastructure, and activities related to the collection, treatment and distribution of water for domestic and industrial needs and the management (including collection, treatment and disposal) of various forms of waste, such as solid or non-solid industrial or household waste, as well as contaminated sites.

Classification

6. The International Standard Industrial Classification of All Economic Activities Rev.4 (ISIC), published by the United Nations sets out the details needed to classify the statistical units in the survey. Each enterprise is classified to an industry which reflects its predominant activity. Statistics in this publication are presented at ISIC division (two digit) level, but supplementary information is available on request for more detailed sectors.

Survey methodology and design

- 7. The survey collects information for each month. Data are obtained in a face-to-face survey, usually undertaken at the end of each calendar year, from a sample of establishments. Once collected the data are validated before being used to compile the PPI.
- 8. PPI samples were selected using the complete CEA data file as a sampling frame. The cut-off method was used to select establishments for each four-digit *ISIC* code, aiming to achieve 90 percent coverage in terms of revenue and a minimum of three establishments. The final sample selected by the NSO includes 78 establishments as set out in the following table:

		Coverage achieved
ISIC	Establishments selected	(% revenue)
1040	3	95.2
1061	4	95.5
1071	9	68.7
1072	2	100.0
1079	10	67.3
1080	2	99.1
1103	3	99.1
1104	4	93.2
1200	5	93.7
2012	2	99.9
2022	3	68.9
2023	3	80.0
2220	18	73.4
2394	3	96.4
3510	2	92.6
3600	5	84.4
Total	78	90.3

9. Since the previous sample size for the IIP was 36 establishments, it is anticipated that this new larger sample will deliver an improvement in the accuracy of the index.

Sample weighting

10. For those strata not completely enumerated, the weights to produce estimates are the inverse ratio of the sampling fraction, modified to take account of non-response in the survey. Stratum estimates are calculated and then aggregated with the completely enumerated stratum to form major group and division estimates. These procedures are consistent with international best practice.

Index of the volume of manufacturing production

11. The producer price index is a statistical measure of the change in the price of a fixed set of outputs from one period to the next. The basic of goods is maintained to allow for the measurement of pure price change. The PPI of a major group is the weighted aggregate of its constituent indexes. The PPI has a weights reference period of 2019, with a price reference period of January 2019. By convention, the prices in the base period is set to yield an index value of 100.

Calculation of the PPI index

- 12. The PPI is compiled as a Laspeyres type index, with elementary aggregates calculated at the establishment level using the geometric (Jevons) formula. Establishment weights are used to compile the 4-digit ISIC level indexes. This represents a methodological improvement since establishment weights were not previously used.
- 13. The updated PPI has been linked to previous estimates by calculating a linking coefficient for the first quarter of 2019. Since linking and aggregation are not commutative operations, indexes at each level of the aggregation structure were linked separately. One of the consequences of this linking is the loss of consistency in aggregation of the individual components and the all industry estimate.
- 14. The weights reflect the importance of the major group/division to the total production industry. The weights change over time due to changes in the relative performance of industries, due to factors such as quality changes, changes in relative prices, and changes in customer preferences. New weights have been calculated and implemented in the updated PPI in this statistical bulletin. The weights are based on revenue collected by the 2017 CEA and are set out in the following table:

ISIC Section	ISIC 2-digit	Description	Weight
C, D & E		TOTAL	100.0
С		MANUFACTURING	90.6
	10	Manufacture of food products	41.5
	11	Manufacture of beverages	9.1
	12	Manufacture of tobacco products	24.6
	20	Manufacture of chemicals and chemical products	6.9
	22	Manufacture of rubber and plastics products	5.5
	23	Manufacture of other non-metallic mineral products	3.0
D & E		UTILITIES	9.4
	35	Electricity, gas, steam and air conditioning supply	6.2
	36	Water collection, treatment and supply	3.2

Reliability of estimates

- 15. Data presented in this publication are based on information obtained from a sample and are, therefore, subject to sampling variability; that is, they may differ from the figures that would have been produced if the data had been obtained from all enterprises in the production industries in Malawi. Estimates are subject to sampling and non-sampling errors.
- 16. Inaccuracies may occur because of imperfections in reporting by enterprises and errors made in the collection and processing of the data. Inaccuracies of this kind are referred to as non-sampling errors. Every effort is made to minimise non-sampling errors by careful design of questionnaires, testing them in pilot studies, editing reported data and implementing efficient operating procedures. Fluctuations may occur in consecutive months as a result of seasonal and economic factors.

Month-on-month percentage change

17. The month-on-month percentage change in a variable for any given month is the change between that month and the previous month, expressed as a percentage of the latter.

Year-on-year (annual) percentage change

18. The year-on-year percentage change in a variable for any given period is the change between that period and the corresponding period of the previous year, expressed as a percentage of the latter.

Contributions to the year-on-year (annual) and month-on-month percentage change

19. The estimates of the contributions each Division makes to the year-on-year or month-on-month percentage change is calculated as the weighted growth rate of a division's index using a top down approach. That is, the contributions of Manufacturing and Utilities are calculated first, and then the component Divisions' contributions are derived in a way that constrains them to the aggregate to ensure consistency in aggregation of the contributions.

Collection rate

20. The response rate for the survey for 2021 was 81%

Statistical unit

21. The statistical unit for which information is compiled and published is an enterprise, defined as a legal unit or a combination of legal units that includes and directly controls all functions necessary to carry out its production activities. The statistical units are derived from and linked to the NSO's business register.

Revised figures

22. Figures may be revised if the NSO receives late submission of data, or respondents report revisions or corrections to their figures. When estimates are revised, they will be indicated as such in the relevant tables.

Rounding of figures

23. Where necessary, the figures in the tables have been rounded to the nearest digit shown. There may, therefore, be slight discrepancies between the sums of the constituent items and the totals shown. Similarly, rates of growth are calculated at the detailed level so there may be discrepancies if the rounded data are used to generate growth rates.

Glossary

Enterprise

24. The enterprise is a legal entity or a combination of legal units that includes and directly controls all functions necessary to carry out its production activities.

Industry

25. An industry is made up of enterprises engaged in the same or similar kinds of economic activity. Industries are defined in the System of National Accounts (SNA) in the same way as in the International Standard Industrial Classification of All Economic Activities (ISIC), Rev.4, published by the Department of Economic and Social Affairs of the United Nations, 2008.

Symbols and abbreviations

AES Annual Economic Survey

CEA Census of Economic Activity

GDP Gross domestic product

PPI Producer Price Index

ISIC International Standard Industrial Classification, revision 4

MWK Malawian Kwacha

MRA Malawi Revenue Authority

NA National accounts

NSO National Statistical Office
MRA Malawi Revenue Authority

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Annex Tables

Table 1 -	Produce	r Price Ind	lex, Malawi 201	19-2021								
												(2019 = 100)
				ISIC Sections					ISIC D	ivisions		
					Water supply;							
				Electric de de	sewerage,					Manufacture		Manufacture
				Electricity,	waste					of	Manufacture	of other
				gas, steam and air	management	Electricity	Manufacture	Manufacture	Manufacture	chemicals	of rubber	non- metallic
				conditioning	remediation	and	of food	of	of tobacco	chemical	and plastics	mineral
		Total	Manufacturing	supply	activities		products	beverages	products		products	
Section/	Division	C+D+E	C	D D	E	D+E	10	11	12			
Weight		100.0	90.6	6.2	3.2		41.5	9.1	24.6			
3												
2019		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2020		106.3	106.7	99.9	105.9	102.0	100.3	103.6	120.5	108.4	92.7	106.9
2021		117.6	119.4	96.7	106.5	98.6	118.6	99.4	126.7	133.8	104.7	124.0
2019	Q4	101.1	101.2	100.0	101.4	100.5	98.8	100.9	105.6	99.5	101.4	99.8
2020	01	100.4	100.7	100.2	107.0	102.0	100 5	102.0	121.2	100.0	02.1	100.0
2020		106.4 109.1	106.7 109.9	100.2 99.6			100.5 100.0	102.9 103.3	121.2		92.1 92.4	100.8 103.4
	Q2 Q3	109.1	109.9	99.6	102.6		100.5	103.3	133.4 114.2			
	Q3 Q4	104.7	105.3	100.0			100.3	104.1	113.2		94.0	
	Q 1	103.0	103.3	100.0	100.0	102.3	100.4	10-1.1	113.2	103.7	34.0	117.5
2021	Q1	115.5	117.3	96.7	100.6	98.0	110.3	98.8	140.4	111.6	99.6	116.5
	Q2	115.1	117.1	96.7			118.4	99.4	120.9			
	Q3	114.8	116.7	96.7	95.7		118.8	99.6	115.0		102.8	
	Q4	125.0	126.6	96.7	134.9	109.8	126.9	99.7	130.6	153.7	110.3	137.7
2020		106.4	106.7	100.0			100.4	102.9	121.2			
	Feb	106.8	107.2	99.5	108.9		100.7	102.9	122.7			
	Mar	105.9	106.2	101.1	104.2		100.3	102.9	119.7			
	Apr	106.1	106.6	99.5	104.2		100.3	102.9	121.0			
	May	114.7 106.5	116.0 107.2	100.0 99.5	104.3 99.2		100.2 99.4	102.9 104.1	154.7 124.4		92.5 92.6	
	Jun	106.5	107.2	99.5	99.2	99.4	99.4	104.1	124.4	106.1	92.0	104.7
	Jul	105.4	105.9	98.4	107.2	101.4	100.4	104.1	118.2	106.1	92.6	104.3
	Aug	105.1	105.4	100.6			100.7	104.1	115.5			
	Sep	103.5	103.7	100.0			100.5	104.1	109.0			
	Oct	104.4	104.6	100.0			100.3	104.1	111.1			
	Nov	105.0	105.3	100.0		102.6	100.4	104.1	113.2			117.3
	Dec	105.5	105.8	100.0	107.7	102.6	100.4	104.1	115.3	109.7	93.8	117.3
2021	Jan	116.1	117.8	96.7	107.5	100.4	111.8	98.8	140.4	112.9	94.3	117.3
	Feb	115.4	117.4				109.7	98.8				
	Mar	115.0					109.4	98.9				
	Apr	119.6	122.0				119.0	98.9				
	May	112.8 113.0	114.4 114.9				118.2 118.1	99.7 99.6				
	Jun	113.0	114.9	96.7	90.7	94.0	110.1	99.0	110.9	155.0	100.0	120.0
	Jul	113.3	115.0	96.7	96.5	96.6	120.1	99.6	107.2	139.1	106.0	121.2
	Aug	113.9	115.7				119.1	99.7				
	Sep	117.2	119.4				117.1	99.6				
	Oct	120.8	123.4				120.5	99.6				
	Nov	127.3	128.3				128.7	99.8				
	Dec	127.0	128.1	96.7	153.0	116.1	131.5	99.8	125.7	161.8	111.4	142.0
		-	r on previous ye									
2020		6.3					0.3	3.6				
2021		10.7	11.9	-3.2	0.5	-3.3	18.2	-4.1	5.2	23.4	12.9	16.0
Percentan	le change	latest mo	nth on same mo	nth a veer age	,							
2021		9.1				-3.2	11.4	-4.0	15.8	3.7	2.3	16.4
	Feb	8.1					9.0					
	Mar	8.6	10.0				9.1	-4.0				
	Apr	12.8	14.4				18.7					
	May	-1.6	-1.4				17.9	-3.1				
	Jun	6.1	7.2	-2.8	-8.6		18.7			27.3	16.6	
	Jul	7.4	8.6				19.6					
	Aug	8.3					18.3					
	Sep	13.2					16.5					
	Oct	15.8	17.9				20.2					
	Nov	21.2	21.9				28.1	-4.1	15.7			
	Dec	20.3	21.0	-3.3	42.1	13.1	30.9	-4.1	9.1	47.6	18.8	21.1

<u>-</u>	1 Todace	i i iice iiic	lex, Malawi 20	15 2021								(2019 = 10
				ISIC Sections					ISIC F) Divisions		(2019 = 10
				ISIC Sections	Water				ISIC L	TVISIOTIS		
				Electricity, gas, steam	supply; sewerage, waste management					Manufacture of chemicals	Manufacture	Manufactu
				and air		Electricity		Manufacture			of rubber	metal
				conditioning	remediation	and	of food	of	of tobacco	chemical	and plastics	mine
			Manufacturing	supply	activities	Water	products	beverages				produ
	'Division	C+D+E	С	D	E	D+E	10					
Weight		100.0	90.6	6.2	3.2	9.4	41.5	9.1	24.6	6.9	5.5	:
2020		100.1	1007	4000	1100	402.7	100.4	100.0	424.2	1000	00.0	4.0
2020		106.4	106.7	100.0	110.8	103.7	100.4					10
	Feb	106.8	107.2	99.5	108.9	102.7	100.7			108.9		10
	Mar	105.9	106.2	101.1	104.2	102.1	100.3					10
	Apr	106.1	106.6	99.5	104.2	101.1	100.3					10
	May	114.7	116.0	100.0	104.3	101.5	100.2				92.5	10
	Jun	106.5	107.2	99.5	99.2	99.4	99.4	104.1	124.4	106.1	92.6	10
	11	105.4	105.0	00.4	107.2	101.4	100.4	1041	110.2	100 1	02.6	10
	Jul	105.4	105.9	98.4	107.2	101.4	100.4		118.2		92.6	10
	Aug	105.1 103.5	105.4	100.6	107.1	102.8 102.0	100.7		115.5			10
	Sep		103.7	100.0	105.7		100.5		109.0			
	Oct	104.4	104.6	100.0	104.5	101.5	100.3		111.1	109.9		11
	Nov	105.0	105.3	100.0	107.5	102.6	100.4		113.2			11
	Dec	105.5	105.8	100.0	107.7	102.6	100.4	104.1	115.3	109.7	93.8	11
2021	L	1101	117.0	06.7	107.5	100.4	111.0	00.0	140.4	112.0	043	1.1
2021		116.1	117.8	96.7	107.5	100.4	111.8					11
	Feb	115.4	117.4	96.7	96.6	96.7	109.7			112.9		11
	Mar	115.0	116.8	96.7	97.8	97.1	109.4					11
	Apr	119.6	122.0	96.7	96.6	96.7	119.0					12
	May	112.8	114.4	96.7	97.1	96.8	118.2					12
	Jun	113.0	114.9	96.7	90.7	94.6	118.1	99.6	110.9	135.0	108.0	12
		442.2	445.0	067	0.55	00.0	100.4	00.6	107.0	120.4	1000	40
	Jul	113.3	115.0	96.7	96.5	96.6	120.1	99.6			106.0	12
	Aug	113.9	115.7	96.7	95.7	96.3	119.1	99.7				12
	Sep	117.2	119.4	96.7	94.9	96.1	117.1	99.6		145.4		12
	Oct	120.8	123.4	96.7	93.8		120.5					13
	Nov	127.3	128.3	96.7	157.8	117.7	128.7	99.8				13
	Dec	127.0	128.1	96.7	153.0	116.1	131.5	99.8	125.7	161.8	111.4	14
	1 1		-46									
	Mar	8.6	nths on same 3 n 9.9		-6.8	-4.7	9.8	-4.0	15.8	2.4	8.2	1
2021	Apr	9.8	11.3	-3.5 -3.3			12.3					
	May	6.4	7.4				15.2					
	Jun	5.6					18.4					
	Juli	3.0	0.3	-3.0	-7.0	-4.0	10.4	-5.0	-5.4	10.2	14.0	'
	Jul	3.8	4.6	-2.6	-8.5	-4.7	18.8	-3.9	-17.1	25.6	16.2	1
	Aug	7.3	8.5				18.9					
	Sep	9.6					18.1					
	Oct	12.4	14.3	-3.5			18.3					
	Nov	16.8	18.3				21.6					
	Dec	19.1	20.3				26.4					
	DCC	13.1	20.5	3.5	20.5	7.4	20.4	7.1	15.4	40.1	17.4	'
rcentag	e change. I	atest 3 mo	nths on previous	3 months								
	, , , , , , , , , , , , , , , , , , ,											
2021	Jan	10.0	11.5	-3.3	-5.6	-4.1	9.9	-5.0	24.0	1.7	6.1	-
	Feb	7.1	8.3	-2.2	-9.8	-5.0	8.2	-3.4	14.2	2.7	8.3	
	Mar	3.0	3.6		-6.5	-3.0	7.7		-1.0	5.4	6.7	
	Apr	-0.3	-0.2	0.0	-5.8	-2.0	7.3	0.6	-13.9	13.4	6.3	
	May	-3.1	-3.3	0.0	-2.3	-0.8	5.4	0.8	-21.8	17.1	5.6	
	Jun	-2.1	-2.2	0.0	-3.0	-1.0	3.1	0.4			1.5	
	Jul	-0.3	-0.3	0.0	0.9	0.3	0.3	0.2	-4.9	13.0	-3.0	
	Aug	3.8	4.1	0.0			0.1					
	Sep	7.4	7.4				2.5					
	Oct	8.9	8.5				6.9					
	Nov	8.4	7.2				9.4					
	Dec	4.3					7.7					