



**PRODUCER PRICE INDEX
AND
INFLATION IN PRODUCER PRICES**



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Producer Price Index and Inflation in Producer Prices

Abbreviations

PPI – Producer Price Index

ISIC – International Standard Industrial Classification for all economic activities

IMF – International Monetary Fund

Section 1: Overview

1. Introduction

This paper on the producer price index of the Maldives presents the analysis on the findings on the index generated from data collected from 94 establishments in the economy from 2001 to 2008.

This is the first of a series of reports planned to be produced on a quarterly basis on this important price indicator. Overview of Producer Price Index (PPI) and a general description of its objectives and scope and coverage of the price indicator provided in Section 1 of the paper which is followed by a statistical analysis of the overall PPI as well as the PPI of the tourism, fishing and fish preparation sectors in Section 2. Furthermore, the analysis in section 2 covers two dimensions, findings based on seasonally adjusted and unadjusted data and trend analysis in quarterly indices.

2. Objective, scope, coverage and procedure of Producer Price Index

“In general terms a PPI can be described as an index designed to measure the average change in the price of goods and services as they leave the place of production or as they enter the production process.” *IMF, PPI manual* (<http://www.imf.org/external/np/sta/teggpi/index.htm>)

The PPI does not try to measure the value of production or cost of production, but it can be used to determine either the change in output prices owing to changes in the basic prices received by producers or, alternatively, the change in prices paid by producers of inputs of goods and services used in the production of output. The PPI presented in this report attempts to do the former assessment.

Theoretically the scope of production index is confined to the production of “non-agricultural commodities”. However, there are some practical problems of inclusion of construction. Hence the producer price index comprises of all sectors except agriculture, and construction and the prices are tabulated and aggregated by ISIC branches.

Price instability inherently introduces ambiguity into economic analysis and decision making, so the main use of PPI relate to efforts to reduce the uncertainty. PPI is used as a short-term indicator of inflationary trends in a wide spectrum of countries. It is also used in current cost accounting, indexation in legal contracts and as a national accounts deflator. Furthermore, it is used by researchers as well as the business community as an analytical tool to understand the situation of business.

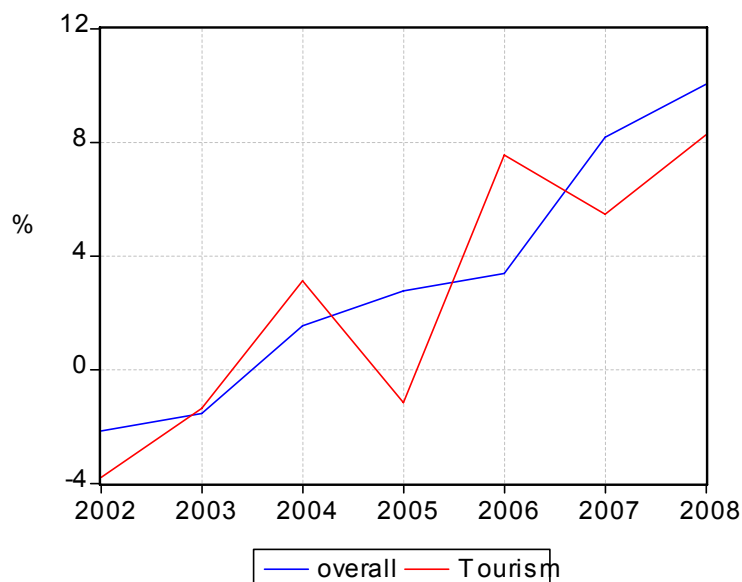
The main purpose of generation of a producer’s price index is to measure the real growth rate in different sectors during a specified period of time and to monitor the current position of price variations in the country. Quarterly indices of price shows the effect of seasonal fluctuations, market conditions, supply system of energy and materials, labour unrest and other current factors of production. Index calculated for longer period like annual indices reveal the general growth trend prevailing in the economy.

Producer's price indices are constructed from data collected through quarterly surveys of selected establishments. The establishment and production selection procedures and index calculation procedures are presented in the document MP_PPindex.PDF.

Section 2: Findings and Analysis

I. Overall and Tourism sector Annual Inflation in Producer Prices, 2002-2007

Chart 1: Inflation in Producer Prices, Annual 2002-2008



In general, prices of producer’s have been increasing except for the periods 2002 and 2003 which showed a decline of 2.18 percent and 1.54 percent respectively. The main reason for this decline in 2002 to 2003 could be due to the closure of some large scale clothing factories, which resulted in pulling down the production drastically and consequentially loosing the international market standing and hence lower prices, which ultimately led to the decrease in the index for wearing apparels, by negative growth of 8 percent. At the same time, the decline in prices of international calls and Internet Leased Line brought about a decrease in the index for telecommunication, by negative 14 percent and 17 percent respectively during the same period.

In 2005, the Resorts and hotels sector contracted by negative 2 percent due to the sudden decline in tourist arrivals coupled with the closing of several resorts destroyed by the Tsunami disasters resulting in the resort owners bringing down prices to allure tourist to the country. Even though there is decline in tourism sector, overall price index showed a rise of 3 percent in 2005.

Overall inflation in PPI follows the same pattern as in the tourism sector due to the fact that it comprises of about 57% of the importance in the PPI, which shares about one third of the country’s GDP. Tourism sector shows a cycle of movements, with prices increasing and decreasing at varying degrees during the period in study.

Tourism indicators, such as bed nights and frontier arrivals show an acceptable trend as the PPI, except for the one instance, that is 2003. Theory of prices say that as production increases, resulting in more

available the product become, supply increases and price should decline. Table 1 gives some key indicators of the tourism sector in the Maldives, and almost all indicators follow the same trend, with 2005 decreasing while the rest of the years it's increasing, except for average duration of stay. However, the PPI trend is a little bit different.

Table 1: Some Key indicators of Tourism sector

Year	Tourist bed-nights ('000)	Tourist Frontier arrivals ('000)	Bed capacity ('000)	Bed-night capacity ('000)	Occupancy rate (%)	Average duration of stay
2001	3,932.75	460.98	16.48	6,015.08	65.62	8.58
2002	4,066.45	484.68	16.13	5,903.38	68.97	8.41
2003	4,704.59	563.59	16.69	6,109.00	77.23	8.35
2004	5,110.59	616.72	16.61	6,077.49	84.01	8.31
2005	3,300.03	395.32	13.95	5,108.19	64.43	8.33
2006	4,826.09	601.92	16.25	6,043.26	81.39	8.03
2007	5,293.22	675.88	17.51	6,514.09	82.76	8.52
2008	5,451.23	683.01	19.08	7,098.26	78.04	8.77

A better investigation of the tourism sector maybe through using data adjusted for seasonal patterns, which is evident in the quarterly data as observed in chart 2. Once the data is adjusted for seasonality (Chart 3) we still detect a variation which maybe due to other ad hoc variables such as international issues and events.

Chart 2: Producer Price Indices, Overall and Tourism sector

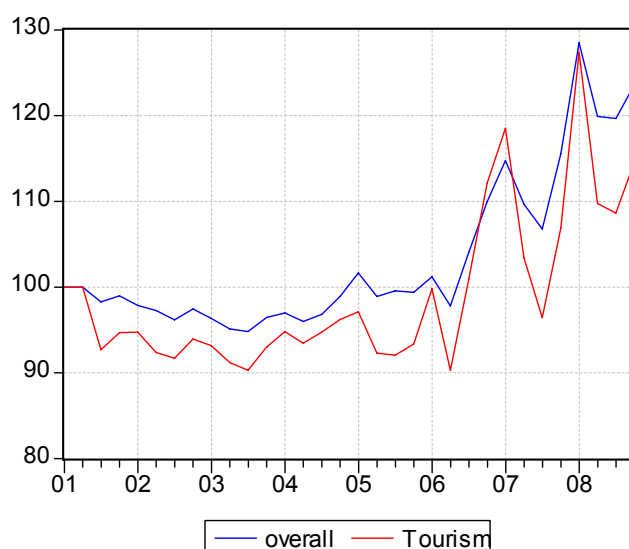
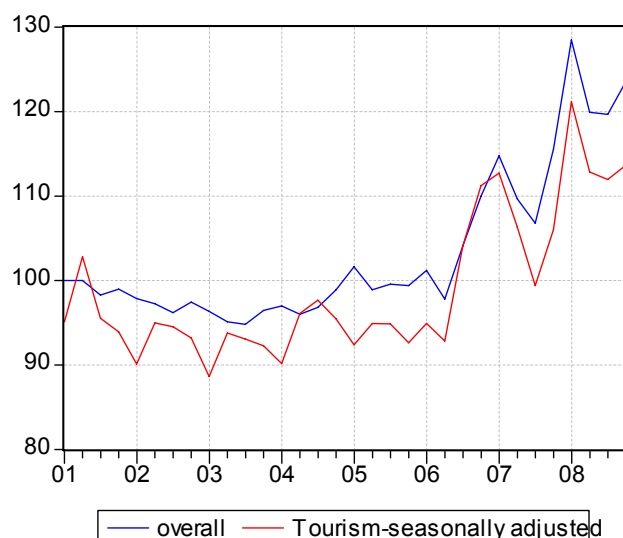
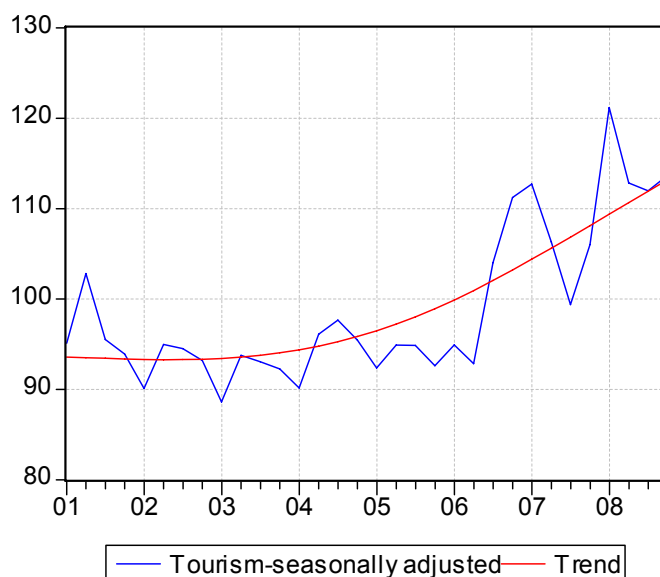


Chart 3: PPI tourism sector, Index, and seasonally adjusted index



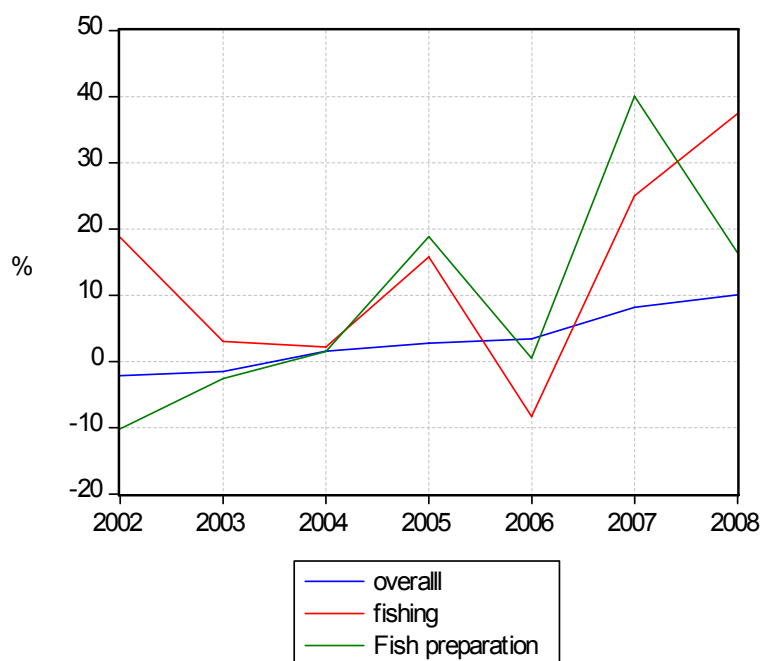
Even though a positive trend is evident from 2001 to 2006 the growth in prices was minor in the tourism sector which can be seen from the flat trend line for the period in question in Chart 4. However from 2006 onwards the slope of the trend line is steeper, meaning that there is a substantial growth in this sector. From 2006 onwards tourist arrival into the country improved, as seen in table 2, hence the producer's charge a higher price from the tourists due to high demand, theory stating demand pushes price up. Furthermore, there are more high-end resorts as well commanding a much higher price than the average resort.

Chart 4: PPI tourism sector, Index, and trend - seasonally adjusted index



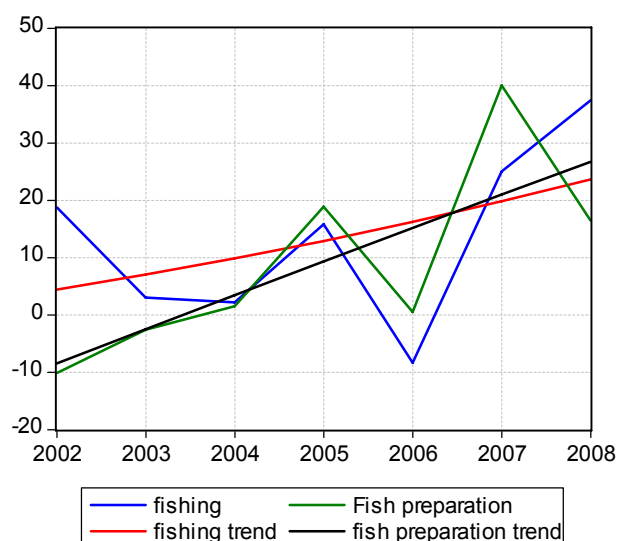
II. Overall and Fishing and Fish preparation sector Annual Inflation in Producer Prices, 2002-2007

Chart 5: Producer Price Indices, Overall and Fishing and fish preparation



In general, prices of fishing and fish preparation have been increasing except for the period 2006 for fishing which showed a decline of 8.32 percent. The main reason for this decline in 2005 to 2006 could be due to the increase in fish catch over the same period, which resulted in pulling down the prices of fish.

Chart 6: PPI Fishing and Fish preparation, Index, and trend



Even though a positive trend is evident from 2001 to 2008 the growth in prices was minor in the fishing sector. However for fish preparation the slope of the trend line is steeper, meaning that there is a substantial growth in this sector.

Annex

Table1: Quarterly Producer Price Indices by sectors, 2001-2008

ISIC	DESCRIPTION	WEIGHT	Q1_2001	Q2_2001	Q3_2001	Q4_2001	Q1_2002	Q2_2002	Q3_2002	Q4_2002
0	Overall	100	100.00	100.00	98.27	98.98	97.85	97.25	96.18	97.43
50	Fishing	6.02	100.00	100.00	137.30	130.89	123.53	129.46	153.30	149.60
151	Fish preparation	4.5993	100.00	100.00	116.91	115.21	95.04	96.69	96.97	99.55
154	Other food products	1.1271	100.00	100.00	110.71	110.71	111.82	111.82	111.82	111.82
155	Beverages	0.4767	100.00	100.00	100.00	100.74	100.74	100.74	100.74	100.74
181	Wearing apparel	4.2954	100.00	100.00	84.74	85.03	86.57	85.40	85.30	85.59
202	Manufacture of wood products	0.0383	100.00	100.00	101.33	100.00	100.00	97.79	97.79	97.79
221	Publishing	0.6683	100.00	100.00	100.00	100.00	107.09	109.84	113.96	121.74
222	Printing	0.1874	100.00	100.00	100.00	98.57	95.29	95.29	96.93	98.57
242	Chemical products	0.2878	100.00	100.00	100.00	100.00	100.00	100.08	102.89	102.89
269	Cement products	0.7457	100.00	100.00	99.64	99.64	102.97	103.93	103.93	103.92
281	Structural metal products	0.4997	100.00	100.00	99.31	96.54	97.92	98.96	98.27	96.54
351	Boat building	0.2231	100.00	100.00	114.99	114.99	114.99	114.99	114.99	115.00
361	Furniture	0.4322	100.00	100.00	100.00	97.01	94.25	94.99	94.55	94.98
401	Electricity	2.8073	100.00	100.00	98.22	100.00	100.00	96.61	96.61	96.61
410	Water supply	0.5264	100.00	100.00	100.00	99.99	99.94	99.97	99.92	100.00
551	Resorts and hotels	57.3819	100.00	100.00	92.68	94.67	94.72	92.38	91.68	93.93
611	Sea Transport	4.8672	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
621	Air Transport	7.48	100.00	100.00	100.00	100.00	100.00	105.69	100.00	100.00
642	Telecommunication	6.02	100.00	100.00	100.00	99.97	99.97	99.97	71.45	71.45
802	Education	1.2746	100.00	100.00	100.00	100.00	105.45	105.45	105.45	105.45
851	Health	0.0128	100.00	100.00	100.00	100.00	101.55	101.55	103.78	100.34

ISIC	DESCRIPTION	WEIGHT	Q1_2003	Q2_2003	Q3_2003	Q4_2003	Q1_2004	Q2_2004	Q3_2004	Q4_2004
0	Overall	100	96.33	95.10	94.82	96.46	96.96	95.98	96.82	98.89
50	Fishing	6.02	141.70	139.76	143.54	147.67	142.80	142.03	143.54	156.86
151	Fish preparation	4.5993	96.70	93.85	93.88	93.84	93.90	93.88	93.99	102.25
154	Other food products	1.1271	111.82	111.82	111.82	111.82	92.49	92.49	92.49	92.49
155	Beverages	0.4767	100.74	100.74	104.62	104.62	104.62	104.62	104.62	104.62
181	Wearing apparel	4.2954	85.13	89.12	88.88	86.45	87.70	88.78	88.78	88.78
202	Manufacture of wood products	0.0383	97.79	97.79	97.79	97.79	102.48	100.11	100.11	100.11
221	Publishing	0.6683	121.74	121.74	121.74	121.74	121.74	121.74	121.74	121.74
222	Printing	0.1874	98.57	97.14	95.71	98.57	98.57	98.57	98.57	98.57
242	Chemical products	0.2878	102.91	103.06	103.06	89.60	89.60	89.60	89.60	89.60
269	Cement products	0.7457	100.18	100.18	100.18	102.82	105.22	105.22	105.22	111.25
281	Structural metal products	0.4997	96.54	96.54	91.69	95.33	95.33	49.98	49.98	53.57
351	Boat building	0.2231	113.93	113.93	113.93	113.93	101.02	101.02	101.02	101.02
361	Furniture	0.4322	95.65	93.72	95.07	94.61	96.67	97.70	100.00	100.00
401	Electricity	2.8073	96.61	96.61	96.61	94.03	91.53	91.53	91.53	91.53
410	Water supply	0.5264	96.28	97.28	99.99	99.70	99.32	98.75	98.84	94.32
551	Resorts and hotels	57.3819	93.17	91.20	90.29	93.00	94.77	93.45	94.73	96.21
611	Sea Transport	4.8672	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
621	Air Transport	7.48	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
642	Telecommunication	6.02	71.45	71.45	71.45	71.45	71.43	71.43	71.43	71.43
802	Education	1.2746	106.36	105.45	106.36	106.36	108.18	108.18	108.18	108.18

ISIC	DESCRIPTION	WEIGHT	Q1_2005	Q2_2005	Q3_2005	Q4_2005	Q1_2006	Q2_2006	Q3_2006	Q4_2006
0	Overall	100	101.62	98.89	99.56	99.37	101.18	97.80	104.03	109.97
50	Fishing	6.02	168.27	168.27	182.85	158.46	127.48	161.31	162.99	169.65
151	Fish preparation	4.5993	110.66	112.04	111.16	122.69	120.90	118.50	118.92	100.57
154	Other food products	1.1271	92.49	92.49	92.49	92.49	92.44	92.44	92.49	92.49
155	Beverages	0.4767	104.62	101.46	101.46	101.46	101.46	101.46	101.94	101.94
181	Wearing apparel	4.2954	89.44	88.78	88.78	88.78	88.78	88.78	88.78	88.78
202	Manufacture of wood products	0.0383	100.11	100.11	102.48	108.68	100.14	100.14	100.14	100.14
221	Publishing	0.6683	121.74	121.74	121.74	121.74	121.74	121.74	121.74	121.74
222	Printing	0.1874	101.91	101.91	101.91	101.91	101.91	101.91	101.91	101.91
242	Chemical products	0.2878	89.60	90.17	90.75	90.75	91.33	91.33	91.33	91.33
269	Cement products	0.7457	117.28	120.79	124.43	129.03	143.69	157.42	158.16	151.90
281	Structural metal products	0.4997	57.17	57.24	57.51	57.66	56.33	56.33	55.69	56.06
351	Boat building	0.2231	101.02	101.02	101.02	101.02	101.02	101.60	102.19	102.19
361	Furniture	0.4322	100.92	98.08	102.25	104.53	106.21	106.21	111.51	111.51
401	Electricity	2.8073	91.53	91.53	88.98	87.71	86.24	87.03	86.62	86.65
410	Water supply	0.5264	90.11	90.06	88.40	88.33	84.95	88.18	88.18	84.95
551	Resorts and hotels	57.3819	97.11	92.29	92.04	93.35	99.80	90.28	100.91	112.11
611	Sea Transport	4.8672	119.42	119.42	119.42	119.42	119.42	119.42	119.42	119.42
621	Air Transport	7.48	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
642	Telecommunication	6.02	71.43	71.43	71.43	71.43	71.43	71.43	71.43	71.43
802	Education	1.2746	117.58	117.58	117.58	117.58	117.58	118.18	117.58	118.94
851	Health	0.0128	100.34	100.34	100.34	99.31	99.31	99.31	101.03	99.48

ISIC	DESCRIPTION	WEIGHT	Q1_2007	Q2_2007	Q3_2007	Q4_2007	Q1_2008	Q2_2008	Q3_2008	Q4_2008
0	Overall	100	114.76	109.65	106.77	115.56	128.48	119.90	119.67	123.57
50	Fishing	6.02	172.94	177.24	190.49	236.21	245.92	266.71	273.91	281.10
151	Fish preparation	4.5993	118.33	170.93	176.58	176.87	182.92	188.99	188.52	188.21
154	Other food products	1.1271	92.49	92.49	92.49	92.49	92.49	92.49	92.49	92.49
155	Beverages	0.4767	101.94	101.94	103.61	107.18	107.22	107.24	107.24	107.24
181	Wearing apparel	4.2954	88.78	88.78	88.78	88.78	88.78	88.78	88.78	88.78
202	Manufacture of wood products	0.0383	100.14	100.14	100.14	100.14	100.14	100.14	100.14	100.14
221	Publishing	0.6683	121.74	121.74	121.74	121.74	121.74	121.74	121.74	121.74
222	Printing	0.1874	107.63	107.63	104.77	101.91	112.20	120.00	120.71	120.71
242	Chemical products	0.2878	118.50	118.50	118.50	118.50	118.50	118.50	118.50	118.50
269	Cement products	0.7457	152.08	158.20	164.81	165.07	165.67	165.99	167.60	168.66
281	Structural metal products	0.4997	56.59	56.63	56.63	56.63	57.47	57.47	56.42	57.47
351	Boat building	0.2231	102.19	102.19	102.19	100.76	100.47	101.74	98.99	122.16
361	Furniture	0.4322	100.24	100.26	100.25	100.18	100.18	100.25	100.25	100.18
401	Electricity	2.8073	88.16	87.56	87.74	88.79	93.22	93.22	93.22	93.22
410	Water supply	0.5264	84.95	84.95	84.95	84.95	88.18	86.61	86.61	86.61
551	Resorts and hotels	57.3819	118.50	103.39	96.42	106.85	127.39	109.74	108.62	114.57
611	Sea Transport	4.8672	119.42	119.42	119.42	119.42	119.42	119.42	119.42	119.42
621	Air Transport	7.48	100.00	111.37	111.37	111.37	111.37	111.37	111.37	111.37
642	Telecommunication	6.02	71.43	71.43	71.43	71.43	71.43	71.43	71.43	71.43
802	Education	1.2746	120.91	120.91	120.91	120.91	129.09	129.09	129.09	129.09
851	Health	0.0128	100.17	110.14	120.19	128.01	150.14	150.65	150.65	150.65

Table2: Annual Producer Price Indices by sectors, 2001-2008

ISIC	DESCRIPTION	WEIGHT	2001	2002	2003	2004	2005	2006	2007	2008
0	Overall	100	99.31	97.18	95.68	97.16	99.86	103.24	111.69	122.90
50	Fishing	6.02	117.05	138.97	143.17	146.31	169.46	155.36	194.22	266.91
151	Fish preparation	4.5993	108.03	97.06	94.57	96.00	114.14	114.72	160.68	187.16
154	Other food products	1.1271	105.36	111.82	111.82	92.49	92.49	92.46	92.49	92.49
155	Beverages	0.4767	100.19	100.74	102.68	104.62	102.25	101.70	103.67	107.23
181	Wearing apparel	4.2954	92.44	85.72	87.39	88.51	88.94	88.78	88.78	88.78
202	Manufacture of wood products	0.0383	100.33	98.34	97.79	100.70	102.85	100.14	100.14	100.14
221	Publishing	0.6683	100.00	113.16	121.74	121.74	121.74	121.74	121.74	121.74
222	Printing	0.1874	99.64	96.52	97.50	98.57	101.91	101.91	105.49	118.41
242	Chemical products	0.2878	100.00	101.46	99.66	89.60	90.32	91.33	118.50	118.50
269	Cement products	0.7457	99.82	103.68	100.84	106.73	122.88	152.79	160.04	166.98
281	Structural metal products	0.4997	98.96	97.92	95.03	62.21	57.39	56.10	56.62	57.21
351	Boat building	0.2231	107.50	115.00	113.93	101.02	101.02	101.75	101.83	105.84
361	Furniture	0.4322	100.00	94.69	94.76	98.59	101.45	108.86	100.24	100.22
401	Electricity	2.8073	99.55	97.46	95.97	91.53	89.94	86.64	88.06	93.22
410	Water supply	0.5264	100.00	99.96	98.31	97.81	89.22	86.56	84.95	87.00
551	Resorts and hotels	57.3819	96.84	93.18	91.92	94.79	93.69	100.77	106.29	115.08
611	Sea Transport	4.8672	100.00	100.00	100.00	100.00	119.42	119.42	119.42	119.42
621	Air Transport	7.48	100.00	101.42	100.00	100.00	100.00	100.00	108.53	111.37
642	Telecommunication	6.02	99.99	85.71	71.45	71.43	71.43	71.43	71.43	71.43
802	Education	1.2746	100.00	105.45	106.14	108.18	117.58	118.07	120.91	129.09
851	Health	0.0128	100.00	101.80	97.34	100.34	100.09	99.79	114.63	150.52

Table3: Inflation in Producer Prices, 2002-2008

ISIC	DESCRIPTION	WEIGHT	2002	2003	2004	2005	2006	2007	2008
0	Overall	100	-2.15	-1.54	1.55	2.78	3.39	8.18	10.05
50	Fishing	6.02	18.73	3.02	2.19	15.82	-8.32	25.02	37.42
151	Fish preparation	4.5993	-10.15	-2.57	1.52	18.89	0.51	40.06	16.48
154	Other food products	1.1271	6.13	0.00	-17.28	0.00	-0.03	0.03	0.00
155	Beverages	0.4767	0.56	1.92	1.89	-2.27	-0.54	1.94	3.44
181	Wearing apparel	4.2954	-7.28	1.96	1.27	0.49	-0.19	0.00	0.00
202	Manufacture of wood products	0.0383	-1.98	-0.56	2.98	2.13	-2.63	0.00	0.00
221	Publishing	0.6683	13.16	7.58	0.00	0.00	0.00	0.00	0.00
222	Printing	0.1874	-3.14	1.02	1.10	3.39	0.00	3.50	12.25
242	Chemical products	0.2878	1.46	-1.78	-10.10	0.81	1.12	29.75	0.00
269	Cement products	0.7457	3.87	-2.74	5.84	15.13	24.34	4.74	4.34
281	Structural metal products	0.4997	-1.05	-2.96	-34.53	-7.75	-2.25	0.93	1.03
351	Boat building	0.2231	6.98	-0.93	-11.33	0.00	0.73	0.08	3.94
361	Furniture	0.4322	-5.31	0.08	4.04	2.89	7.31	-7.92	-0.02
401	Electricity	2.8073	-2.11	-1.53	-4.63	-1.74	-3.67	1.65	5.86
410	Water supply	0.5264	-0.04	-1.65	-0.51	-8.78	-2.98	-1.86	2.42
551	Resorts and hotels	57.3819	-3.78	-1.36	3.13	-1.15	7.56	5.47	8.27
611	Sea Transport	4.8672	0.00	0.00	0.00	19.42	0.00	0.00	0.00
621	Air Transport	7.48	1.42	-1.40	0.00	0.00	0.00	8.53	2.62
642	Telecommunication	6.02	-14.29	-16.64	-0.02	0.00	-0.01	0.00	0.00
802	Education	1.2746	5.45	0.65	1.93	8.68	0.42	2.41	6.77
851	Health	0.0128	1.80	-4.39	3.09	-0.26	-0.30	14.87	31.32