

The Application of Inter-Industry Relations in Price-Cost Analysis for the Pre and Post-War of Kuwait Economy



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1 - Introduction

When Wassily Leontief published his "Quantitative Input-Output Relations in the Economic System of the United States", in *The Review of Economics and Statistics*, (August 1936), he launched a quiet revolution in economic analysis that has steadily gained momentum. That article, which represents a turning point in the development of economic thought, did not at first attract wide attention, was partly a matter of timing⁽⁸⁾. Unlike Keynes, Leontief was not concerned with the causes of disequilibrium in a particular type of economic system during a particular phase of its development. He was interested in the structure of economic system, in the way the component parts of an economy fit together and influence one another. Input-output analysis is a branch of economics, and the technical literature in the field draws heavily on the basis of mathematics⁽¹⁰⁾. The basis of Leontief's analytical system is the Input-output table. This table shows how the output of each industry is distributed among other industries and sectors of the economy. At the same time it shows the inputs to each industry from other industries sectors. A hypothetical input-output or transactions table is illustrated by Table (1).

In an Input-output table the production costs are equal to the gross sale. These costs are made up of payments for inputs and the 'value added' which represents payments made up of the exogenous (i.e, final demand) sectors, inter-alia labor, capital,... etc. Thus, price amounts to cost of inputs, which is of course the average cost per unit of input, plus the profit.

The object of this study is to make an application of the input-output technique in price-cost analysis for the economy of Kuwait, for the year 1986 (pre-war) and 1992 (post-war). In this paper we shall treat prices with reference to input-output table⁽⁷⁾.

Input-output analysis provides in a simple but a quantifiable way a method of examining, the relationship between prices (both of goods and factors) in a par-

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ticular economic system. It makes possible an estimate of the consequence of a change in price upon the quantities of goods consumed or produced. For this reason, price calculations using input-output methods have been much more widely adopted in centrally planned economies than in market economies. Whereas input-output studies in market economies have typically made ex-post comparisons of computed prices with those actually observed in different markets, input-output analysis has been used in centrally planned economies to determine the system of price which will be decreed by planning authority.

2 - Methodology

2.1 - Outlining the model for price in input-output analysis:

The long term prices in Simple Leontief system can be described by a simultaneous linear equation:

$$P_i = \sum_{j=1}^n a_{ij} P_j + V_i \quad \text{-----} \quad (2-1)$$

Where:

$P = [P_i]$ the column vector of prices, where the i^{th} element denotes the price of the i^{th} commodity;

$V = [V_i]$ the column vector of value added per unit of output of the i^{th} commodity⁽¹¹⁾.

$$\text{or } P_i = \sum_{j=1}^n a_{ij} P_j + W I_i + \pi_i \quad \text{-----} \quad (2-2)$$

Where:

$I_i = [I_i]$ the column vector of labour per unit of i^{th} commodity;

$\pi = [\pi]$ the column vector of profit per unit of output of the i^{th} commodity;

W = a sector of uniform wage rate.

Equation (1) and (2) can be written in vector form:

$$P = \hat{A}P + V \quad \text{-----} \quad (2-3)$$

$$\text{or } P = \hat{A}P + WL + \pi \quad \text{-----} \quad (2-4)$$

Where A is $[a_{ij}]$, the matrix of input coefficients
the solution for P is

$$P = [I - \hat{A}]^{-1} [WL + \pi] \quad (2-5)$$

Assuming that each producer retains a profit margin and introducing m_i on commodity i , the basic price equation can be rewritten as:

$$P_i = \sum_{j=1}^n a_{ij} P_j + Wl_i + m_i P_i \quad (2-6)$$

The profit margin matrix M is diagonal of order $(n \times n)$:

$$\begin{matrix} m_1 & 0 & 0 \\ 0 & m_i & 0 \\ 0 & 0 & M_n \end{matrix}$$

Solving for P in vector form:

$$P = [I - \hat{A} - M]^{-1} [WL] \quad (2-7)$$

In the above formulation profit is not linked to capital. This can be done by introducing the capital matrix as:

$$P = [I - \hat{A} - RB]^{-1} [WL] \quad (2-8)$$

Where B is $[b_{ij}]$, the matrix of capital coefficients, where b_{ij} is the requirement of the commodity i to increase the capacity of commodity j one unit R in the diagonal matrix of rate of profit.

Then the price relationship becomes:

$$P = (I - \hat{A})^{-1} [WL + \pi + \hat{A}P] \quad (2-9)$$

Where:

$\hat{A} = [a_{ij}]$, the matrix of input coefficient, exogenous to the system;

P = the column vector of commodity prices exogenous to the system.

The equations (2.7) and (2.8) can be respectively written as:⁽⁹⁾

$$P = [I - \hat{A} - M]^{-1} [WL + \hat{A}P] \quad (2-10)$$

$$P = [I - \hat{A} - RB]^{-1} [WL + \hat{A}P] \quad (2-11)$$

2.2 - The Modified price model used in the study:

The price of products is dependent on the prices on other products used input and the costs of no-produced or primary input, and thus the prices of products

could be traced as dependent solely on the costs of primary inputs, both the direct and indirect primary inputs. The basic price equation can be written as follows:

$$P = \hat{A} P + \bar{Y} \Rightarrow (I - \hat{A}) P = \bar{Y} \text{ ----- (2 - 2 - 1)}$$

$$P = (I - \hat{A})^{-1} \bar{Y} \text{ ----- (2 - 2 - 2)}$$

The vector of primary input coefficients, $\bar{Y}$, can be split into main components, wages ($\bar{W}$), profit ($\bar{r}$), indirect taxes ($\bar{t}$) and imports ($\bar{m}$).

Then we can write the general price equation as follows:

$$P = (I - \hat{A})^{-1} (\bar{W} + \bar{r} + \bar{t} + \bar{m}) \text{ ----- (2 - 2 - 3)}$$

Here the prices of home - produced commodities are seen to depend on the cost of those inputs which are exogenous to the productive sectors.

If a different vector $\bar{m}$, representing a different set of import prices, is entered in column (4) the new set of domestic product prices can be calculated in the same way ⁽¹⁾.

2.3 - The numerical example of the price model used in the study is shown in Tables 1-3 as follows:

Table (1)
Numerical Example

				Final Demand					
		Inter-mediate Demand		Total Inter-mediate	Consumption House-Govt. hold		Capital Formation	Total find demand	Total output
		Sector							
Sector A	A	B	C						
	-	20	45	65	30	5	-	35	100
	B	30	-	30	60	90	10	40	200
C	-	80	-	80	40	20	10	70	150
Total Inter-mediate input	30	100	75	205	160	35	50	245	450
Wages	30	80	45	155					
Profit	40	20	30	90					
Total Input	100	200	150	450					

If we perform these calculations using the data of (3X3) matrix, we have:

Table (2)
Prices or total cost of the products

$[I - \hat{A}]^{-1}$			Direct Labour (W) (1)	Input Cost Capital (R) (2)	Total Cost Labour (3)	Total Cost Capital (4)	Total Cost Price (5)
1.077	0.351	0.141	0.3	0.4	0.505	0.494	1.000
0.257	1.171	0.468	0.4	0.1	0.686	0.314	1.000
0.375	0.340	1.136	0.3	0.2	0.589	0.411	1.000

It will be immediately apparent that the price for unit of output in each of these sectors is given as 1.00. The reason for this is that we have not defined units of output in physical terms, the unit of output in this example is K.D. worth of output as the transactions in our table have all been valued in monetary terms. The result is that our calculations state the producer's selling price of K.D.1 worth of output. Most input-output tables are prepared in value terms. Similar to equation (2 - 1) they will yield a set of prices equal to unity. This does not, however, mean that such calculations are of no useful application.

Using the imaginary in Table (1) we see that the direct labour and capital costs per unit of output in sector A are 0.3 and 0.4 respectively when allowances made for the sector B will be increased by 10% from 0.4 to 0.44. We then perform the calculations in Table (2) and obtain the results shown in Table (3).

Table (3)
Percentage increase in prices of the products of sector B
(and percentage point increase in labour input costs of sector B)
due to a ten percent increase in labour rates of sector B

$[I - \hat{A}]^{-1}$	Direct Labour (W) (1)	Input Cost Capital (R) (2)	Total Input Labour (3)	Total Cost Capital (4)	Total Cost Price (5)
$[I - \hat{A}']^{-1}$	0.3	0.4	0.520	0.494	1.014
	0.44 +	0.1 =	0.733 +	0.314 =	1.047
	0.3	0.2	0.604	0.411	1.015

A comparison of column (3) here with column (3) in Table (2) shows that increase in wage rate by 10% in sector B has increased wage cost in all three industries. The total capital costs are unchanged and column (5) shows the new prices of each of the products. The largest increase of 4.7% occurs in sector B but increases of 1.4 and 1.5 percent in other sectors. These increases may not hold rigidly in practice, but nevertheless this type of analysis is useful in that it can indicate where pressure on costs leading to price increases is likely to be felt, and if such price⁽²⁾ increases do not come about, this analysis will enable one to see to what extent substitution between products and/or factors has limited the extent of the price increase.

2.4 - Computing an index of the cost of living:

Following directly from the previous example, an index for the average level of the cost of living can be computed by multiplying the fraction of consumer expenditure on the output of each sector by the corresponding price increases in that sector (5).

$$P_i = P_I C_I + P_2 C_2 + P_3 C_3 \text{ ----- (2.4.1)}$$

Where P_i = Price for sector (I) product and C_i = ratio of sector to total consumption

$$= 1.014 \times 0.1795 \div 1.047 \times 0.513 \div 1.015 \times 0.307 = 1.0307$$

Thus the rise in cost of living, measured by the above index of prices of goods consumed, as a result of the increase in price of 10% in the labour cost of sector B, was 3.07 percent.

This type of analysis can be extended to form an index for the average level of the cost of living due to change in each input prices for each sector. Cost of living index can be computed by multiplying the fraction of consumer expenditure of output of each sector by the corresponding price increase in that sector.

These applications will be discussed and applied to Kuwait data and the procedure can be illustrated using the matrix of 26X26 for pre-war and 26X26 for post-war situation.

The final results of the quantitative analysis of percentage increase in the prices of the products of 26 sectors (for pre-war) and 26 sectors (for the post-war) due to 10% increase in each input prices for all sectors simultaneously. Now we will discuss effects of changes in wage rates, profits, indirect taxes and imports one after another.

2.5 - Limitations on the price-cost analysis in practice:

Input-output analysis has been used in centrally planned economics to determine the system of prices which will be decreed by the planning authority. There are many limitations to the usefulness of input-output analysis in planning price system, which reflect more upon the usefulness of planning price systems than the relevance of input-output analysis. They deserve to be mentioned, if only to point out the danger of a mechanical application of a particular technique. Firstly, the assumptions of the input-output system are equally applicable (or inapplicable) as in quantity calculations. Secondly, many prices include elements of special taxes or subsidies so that they deviate from total factor costs; for example in erstwhile Soviet Union, the prices of alcohol and tobacco are increased by taxes, whereas the rent of houses are usually much lower than the factor cost would warrant. Thirdly, even in centrally planned economies, planned retail prices may deviate from factor costs because of market influences. In the case of agricultural products, some prices may even be determined entirely by market supply and demand. For all of these reasons, input-output analysis can have only an advisory role in planning process, ensuring over-all consistency, but not necessarily efficiency.

(3) - Application of the price model to the Kuwait economy

3.1 - Effects of change in wage rates:

The final results of the quantitative analysis of the effect of 10% increase in the wages and salaries rates simultaneously for all sectors are shown in Table (4) for the pre-war situation and in Table (7) for the post-war situation. That is, the first column of these Tables (4 and 7) tells us the effect on the price of products for all sectors of a 10% increase in wages-imports, indirect taxes and profits remaining unchanged.

The considerable effects of prices for the pre-war situation are shown in Table (4) for sector 23 (Education), sector 22 (Sanitary Services), sector 14 (Construction), sector 18 (Communication), sector 11 (Basic Metals), and sector 5 (Food and Beverages) which were measured at about 0.88, 0.81, 0.81, 0.53, 0.52 and 0.53 respectively. Here it is observed that if all sectors wages rates are increased by 10% only 6 sectors show some considerable effect on prices.

In the post - war situation the outstanding effects on prices are shown in Table (7) for sector 18 (Communication), sector 8 (Paper), sector 23 (Education) and sector 24 (Health) which were measured at about 0.92, 0.86, 0.80 and 0.76 respectively. Examining column 1 of Table (7) indicates that change in price for each 10% rise in wages is about 0.4% except for sector 1 (Agriculture), sector 2 (Fishing), sector 4 (Other Mining), sector 9 (Chemical) and sector 19 (Financial Institution), sector 20 (Insurance) and sector 26 (Personal Services) which were measured at about 0.33, 0.32, 0.23, 0.11, 0.11, 0.21, 0.39 and 0.38 percent respectively.

Column one of Table (5) shows the change in the index of the cost of living before war due to an increase in Wages and Salaries by 10% in each particular sector, where other cost factors are unchanged. Examining column 1 of this table indicates that the changes in the cost of living for each 10% rise in wages are less than 10% except for Sanitary Services sector (0.11%). Column 1 of Table (6) Shows that the total of increasing in wages and salaries by 10% for all sectors simultaneously is about 0.46%.

Table (8) column 1 shows the change in the index of the cost of living after the war owing to 10% increase in wages in each sector where the cost factors are unchanged. Examining column 2 of this table indicates that the change in the cost of living for each 10% rise in wages is less than 0.1 percent except for personal services - sector 26. It is 0.1093 percent. Table (9) column 1 shows that the

effect of increasing 10% in wages of all sectors simultaneously is about 0.5053 percent.

3.2 - Effects of changes in profit rates:

The results of the quantitative analysis of the effects of increase in profit rates by 10% for all sectors simultaneously are shown in Table (4) for the pre-war, and in Table (8) for the post - war situation. In particular, column 2 of these tables shows that if the profit rates of all sectors are increased simultaneously by 10%, the prices of all sectors are increased considerably.

Pre - war situation of the effects of change in profit rates is depicted in Table (4). In particular column 2 of this table shows if the profit rates of all sectors are increased simultaneously by 10%, prices of few sectors are increased considerably. Considerable increases are indicated for the prices of the products of sector 9 (Chemical), sector 2 (Fishing), sector 14 (Construction), sector 20 (Insurance), sector 16 (Hotels), sector 22 (Sanitary Services), sector 21 (Electricity & Gas, Water, Real Estate), sector 13 (Other manufactures), sector 10 (Non-metallic) and sector 7 (Wood); the increases are 0.96, 0.91, 0.87, 0.83, 0.82, 0.79, 0.72, 0.69, 0.68 and 0.68 percent respectively.

In the post - war situation, Table (7) shows if the rate of profit of all sectors is increased simultaneously by 10% prices of all sectors are increased considerably. Significant increases are indicated for the prices of the products of sector 1 (Agriculture), sector 3 (Crude Petroleum), sector 19 (Financial Institution) and sector 21 (Electricity & Gas; Water, Real Estate); the rates of increases are 0.75, 0.39, 0.85 and 0.78 percent. Rest sectors show a moderate rate of changes, i.e., about 0.50 percent, except for two sectors: sector 2 (Fishing) and sector 23 (Education) and these are 0.14 and 0.25 percent respectively.

Table (5) column 2 shows the effects of a 10% increase in the profit of each sector on the cost of living before the war, a 10% increase in the profit rate of Hotel and Sanitary Services sector, other cost factors remaining unchanged, leading to a 0.17% and 0.11% increase in the cost of living index respectively. All other sectors show some significant changes. Column 2 of Table (6) shows that if all profit rates increase by 10% simultaneously the index of the cost of living for the Kuwait economy as a whole will increase by 0.68 percent.

In the post-war situation, Table (8) column 2 shows the effect of a 10% increase in the profits rate of each sector on the cost of living. This 10% increase is

negligible, except for sector 26 (Personal Services), being 0.1984 percent. Column 2 of Table (9) shows that as all profit rates increase by 10% simultaneously, the index of the cost of living will increase by 0.57% for post-war period.

3.3 - Effects of changes in indirect taxes:

Table (4) and Table (7) show the pre-war & post-war changes respectively in prices of each sector if all indirect taxes are increased by 10% simultaneously. The results of the quantitative analysis show that the effects are very small, especially on few sectors where it is almost zero. The biggest pre-war change is for sector 5 (Food and Beverages) and it is 0.20 percent in the pre-war situation. In the pre-war period changes in the rest of the sectors are not at all mentionable.

In the pre-war period, column 3 of Table (4) shows the changes in the prices of each sector if all indirect taxes are increased by 10% simultaneously. The effects are very small, especially for few sectors where these are almost zeros. That is, over all changes are negligible.

Table (5) column 3 shows the effect on the cost of living for the pre-war period due to increase in indirect taxes by 10% in each sector. The effects are very small being a maximum of 0.01427 percent for food and beverages sector; column 3 of Table 6 shows that the overall effect on the cost of living owing to increase in the indirect tax by 10% is very small, being 0.03653 percent.

Table (8) column 3 shows that the overall effect on the cost of living in the post-war period due to increase in indirect taxes by 10% is very small, being a maximum of 0.0033 percent for food and beverages sector. Column 3 of table 9 shows that the overall effect on the cost of living due to increase in indirect taxes by 10%, is 0.0076%.

3.4 - Effect of changes in imports rates:

The results of the quantitative analysis of the effect of a 10% increase in import prices for all sectors simultaneously are shown in Table (4) (pre-war) and in Table (7) (post-war). In particular, column 4 shows the effect of an increase in import rates by 10% for all sectors on prices of all commodities in the economy as a whole.

The outstanding effects for pre-war period are indicated in column 4 of Table (4) for the prices of the product of sector 13 (Other Manufactures), sector 12 (Fabricated Metals), sector 11 (Basic Metals), and sector 6 (Textiles) which were

measured at about 38.46, 20.42, 13.39 and 11.43 percent respectively. Examining column 4 of this table, changes are observed for the sector 1 (Agriculture), 5 (Food & Beverages), 7 (Wood), 4 (Other Mining), 10 (Nonmetallic), 14 (Construction), 15 (Wholesale & Retail Trade), and 26 (Personal Services). The increases are 6.72, 4.49, 3.43, 2.57, 2.4, 2.16, 2.91 and 2.07 percent respectively.

In column 4 of Table (7) outside effects on prices for the post-war situation are shown for sector 13 (Other Manufactures), sector 11 (Basic Metals), sector 25 (Social and Community Services), sector 6 (Textiles) and sector 22 (Sanitary Services) which were measured at about 76.31, 15.53, 14.28, 13.17 and 12.02 percent respectively. In case of rest sectors there are also some moderate changes. This reveals that effects of change in import rate are very much price sensitive.

Column 4 of Table (5) shows the pre-war changes in the index of cost of living due to an increase of 10% in the import rate in each particular sector, where other cost factors are unchanged. Examining column 4 of this table indicates that the change in the cost of living for all sectors due to 10% rise in import rates is substantial, for sector 12 (Fabricated Metal), sector 13 (Other Manufactures) and sector 6 (Textiles) which were measured 2.48%, 1.73% and 0.016% respectively. Table (6) column 4 shows that pre-war effect of increase in import rates by 10% of all sector simultaneously is about 6.5%.

Column 4 of Table (9) shows the post-war effect of a 10% increase in the import rates of each sector on the cost of living, where other cost factors are unchanged. Examining column 4 of this table indicates that the changes in the cost of living for all sectors due to 10% rise in import rates are substantial for sector 26 (Personal Services), sector 12 (Fabricated Metal) sector 25 (Social & Community services), sector 24 (Health), sector 6 (Textiles) and sector 22 (Sanitary Services) which were measured at about 5.8297, 0.9582, 0.8782, 0.6895, 0.6385 and 0.5553 percent respectively. Table (9) column 4 shows that the effect of increase in import rates by 10% of all sectors simultaneously is about 10.9473 percent.

Table (4)
Percentage increases in the prices of the products of each
26 sectors for the pre-period due to 10% increase in each input
prices for all sectors

Sector	Wage 1	Profit 2	Indirect Tax. 3	Import 4
1. Agriculture	0.38326	0.39033	0.07235	6.72688
2. Fishing	0.17363	0.91207	0.0006	0.01490
3. Crude petroleum	0.01495	1.08599	0.00064	0.02223
4. Other mining	0.42998	0.52708	0.02079	2.57253
5. Food and beverages	0.53001	0.60619	0.20070	4.49046
6. Textiles	0.49586	0.62022	0.00932	11.43382
7. Wood	0.39996	0.68195	0.00722	3.43225
8. Paper	0.44774	0.58919	0.02044	1.79469
9. Chemicals	0.11434	0.96339	0.00322	0.72203
10. Non - metallic	0.73392	0.68276	0.03559	2.39817
11. Basic metal	0.52185	0.28668	0.00380	13.39014
12. Fabricated metal	0.44511	0.58860	0.00338	20.41781
13. Other manufactures	.42582	0.69010	0.00636	38.4505
14. Construction	0.81694	0.87260	0.00335	2.15772
15. Wholesale & retail trade	0.42053	0.46185	0.01276	2.91417
16. Hotels	0.27112	0.82455	0.01943	0.21668
17. Transport	0.435444	0.61916	0.04302	1.08312
18. Communication	0.53627	0.53755	0.08208	1.66677
19. Financial Institution	0.44046	0.29513	0.00640	0.52889
20. Insurance	0.24102	0.82664	0.00247	0.12686
21. Electricity & gas; Water, real estate	0.36741	0.71792	0.00859	0.12686
22. Sanitary services	0.81229	0.78964	0.03241	1.01433
23. Education	0.88075	0.23269	0.02783	0.61010
24. Health	.054109	0.65453	0.01105	0.70565
25. Social and community services	0.34154	0.43007	0.00086	0.07210
26. Personal services	0.46010	0.64284	0.00998	2.0674

Table (5) Increases in the index of cost of living for pre-war period due to increase in input of 10% each of 26 sectors

Sector	Wage 1	Profit 2	Indirect Tax. 3	Import 4
1. Agriculture	0.02744	0.02795	0.00518	0.48164
2. Fishing	0.00052	0.00274	0.00000	0.00004
3. Crude petroleum	0.00000	0.00000	0.00000	0.00000
4. Other mining	0.00000	0.00000	0.00000	0.00000
5. Food and beverages	0.03768	0.04310	0.01427	0.31927
6. Textiles	0.04408	0.05514	0.00083	0.01647
7. Wood	0.00664	0.01132	0.00012	0.05698
8. Paper	0.00206	0.00271	0.00009	0.00826
9. Chemicals	0.00224	0.01888	0.00006	0.00533
10. Non - metallic	0.00277	0.00505	0.00026	0.01775
11. Basic metal	0.00016	0.00009	0.00000	0.00402
12. Fabricated metal	0.05426	0.07175	0.00041	2.48893
13. Other manufactures	0.01916	0.03105	0.00029	1.73066
14. Construction	0.01274	0.01361	0.00005	0.03366
15. Wholesale & retail trade	0.00416	0.00635	0.00013	0.02885
16. Hotels	0.05669	0.17241	0.00406	0.04531
17. Transport	0.00691	0.00941	0.00065	0.01646
18. Communication	0.03121	0.03129	0.00478	0.09701
19. Financial Institution	0.00317	0.00212	0.00005	0.00381
20. Insurance	0.01000	0.03431	0.00010	-0.00526
21. Electricity & gas; Water, real estate	0.00180	0.00352	0.00004	0.00063
22. Sanitary services	0.11526	0.11205	0.00560	0.14393
23. Education	0.00458	0.00121	0.00014	0.00317
24. Health	0.00433	0.00452	0.00009	0.00656
25. Social and community services	0.00041	0.00052	0.00000	0.00009
26. Personal services	0.01472	0.02057	0.00032	0.06616

Table (6) Percentage increase in the cost of living for pre-war period due to 10% increase each input price for all sectors simultaneously. (3)

Sector	Wage 1	Profit 2	Indirect Tax. 3	Import 4
	0.46301	0.68167	0.03653	6.57933

Table (7)
Percentage increases in the prices of the products
of each of 26 sectors for the post-war period due to 10 %
increase in each input price for all sectors

Sector	Wage 1	Profit 2	Indirect Tax. 3	Import 4
1. Agriculture	0.33	0.75	0.02	6.42
2. Fishing	0.32	0.14	0.00	2.13
3. Crude petroleum	0.02	0.39	0.01	8.21
4. Other mining	0.23	0.39	0.01	8.21
5. Food and beverages	0.48	0.59	0.08	5.87
6. Textiles	0.46	0.62	0.00	13.47
7. Wood	0.44	0.61	0.00	3.72
8. Paper	0.86	0.48	0.01	3.40
9. Chemicals	0.11	0.95	0.00	0.39
10. Non - metallic	0.35	0.56	0.02	.087
11. Basic metal	0.50	0.27	0.00	15.53
12. Fabricated metal	-	-	-	-
13. Other manufactures	0.42	0.60	0.00	76.31
14. Construction	0.48	0.50	0.01	2.41
15. Wholesale & retail trade	0.44	0.65	0.02	2.88
16. Hotels	-	-	-	-
17. Transport	0.52	0.44	0.03	1.22
18. Communication	0.92	0.43	0.00	0.50
19. Financial Institution	0.21	0.85	0.00	0.16
20. Insurance	0.39	0.67	0.01	0.31
21. Electricity & gas; Water, real estate	0.50	0.76	0.02	2.28
22. Sanitary services	0.49	0.53	0.00	12.02
23. Education	0.80	0.25	0.00	3.55
24. Health	0.67	0.40	0.01	5.20
25. Social and community services	0.51	0.56	0.00	14.21
26. Personal services	0.38	0.69	0.00	20.27

Table (8)
Increase in the index of cost of living for the post-war period
due to increase in input price of 10 %
each of 26 sectors separately

Sector	Wage 1	Profit 2	Indirect Tax. 3	Import 4
1. Agriculture	0.011	0.0252	0.0007	0.2157
2. Fishing	0.007	0.0003	-	0.0045
3. Crude petroleum	-	-	-	-
4. Other mining	-	-	-	-
5. Food and beverages	0.0198i	0.0243	0.0033	0.2418
6. Textiles	0.0218	0.0294	-	0.6385
7. Wood	0.0029	0.0040	-	0.0246
8. Paper	0.0039	0.0022	0.0000	0.0153
9. Chemicals	0.0013	0.0113	-	0.0046
10. Non - metallic	0.0056	0.0090	0.0003	0.0619
11. Basic metal	-	-	-	-
12. Fabricated metal	0.0302	0.0339	-	0.9582
13. Other manufactures	0.0015	0.0021	-	0.2671
14. Construction	0.0012	0.0013	0.0000	0.0063
15. Wholesale & retail trade	0.0096	0.0142	0.00	0.0068
16. Hotels	0.0057	0.0072	0.00	0.0337
17. Transport	0.0174	0.0147	0.0010	0.0409
18. Communication	0.0053	0.0025	-	0.0029
19. Financial Institution	0.0031	0.0124	-	0.0023
20. Insurance	0.0009	0.0016	0.00	0.0007
21. Electricity & gas; Water, real estate	0.0261	0.0396	0.0010	0.1188
22. Sanitary services	0.0026	0.0245	-	0.5553
23. Education	0.0789	0.0247	-	0.3500
24. Health	0.0888	0.0530	0.0013	0.6895
25. Social and community services	0.0314	0.0344	-	0.8782
26. Personal services	0.1093	0.1984	-	5.8297

Table (9)
Percentage increase in the cost of living for the post - war period due
to a 10% increase in each input price for all sector simultaneously

Sector	Wage 1	Profit 2	Indirect Tax. 3	Import 4
	0.5053	0.5702	0.0076	10.9473

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