SHIFTING OF THE KENYAN SALES TAX, 1973-74

by

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ABSTRACT

This paper attempts to estimate the extent of shifting of the Kenyan Sales Tax in its first year of operation. The method involves looking at profits with and without the Sales Tax. The shifting model is a cross-sectional analysis, using indirect least squares as the estimating technique.

The outcome is that the Sales Tax is shown to be more than fully shifted. The implication of this as a possible cause of Kenya's recent inflation is then summarised. The reason for over-full shifting is attributed to the way the Sales Tax was administered.

INTRODUCTION

The aim of this paper is to provide an estimate of the extent to which firms in Kenya can "shift", or pass on, the sales tax. Manufacturing firms in Kenya are statutorily responsible for paying over to the government the sales tax. However, if they can by same means, adjust to the tax such that their profits are maintained then some other groups must bear the income loss caused by the tax. This adjustment process is general equilibrium in nature in that the final effect on profits may have been brought about by a direct response by the firms (e.g. by raising consumer prices) or by an indirect effect (e.g. by workers demanding higher wages to compensate them for the higher cost of living). The mechanism of shifting is therefore left unspecified. Nevertheless, seeing that the sales tax affects marginal costs, it is probable that the main means by which firms adjust is by raising their output prices.

Different outcomes of the extent of shifting of the sales tax would have various policy implications:

(i) If there were no shifting, the tax would be borne by profits with implications for private investment and income growth.

(ii) If there were full shifting, the likely effect of the sales tax would be on consumer prices. Thus the effectiveness of stabilisation policy in Kenya could be gauged.

(iii) If there were over-full shifting, this would poovide an insight to the motivation of the firm in Kenya. In particular, this would question the existinge of the goal of short-run profit maximisation.

SHIFTING AND INCIDENCE THEORY

The modern definition of the incidence of a tax relates to the overall effect it has on the distribution of income. The outcome of the exercise to estimate the extent of shifting of the sales tax will provide therefore only the first stage in an analysis to ascertain the incidence of this tax. This is so even assuming no "excess burden" (income losses in excess of the amount of tax revenue collected by the government). If firms can shift fully the sales tax then all that is known is that some other groups will incur that income loss: the groups are unidentified. If it turns out that the firms cannot shift the tax at all, one must still ascertain the income classes of those who own the firms subject to sales tax in Kenya.

The analysis will be within a "differential" incidence framework. The effect of the sales tax on profits will be considered simultaneously with the effect of the company income tax. Conceptually, what is being implied is that

for every £1 of sales tax collected the government reduces its revenue from the income tax by £1. In this way the macroeconomic/aggregate demand effect of the sales tax is neutralised.

The only other point of incidence theory to note about this study is that it is a short-run analysis. The effects of the tax will be examined in the first year of its operation. So it can be assumed that the period of analysis was too short for any firms, that incurred an income loss from the sales tax, to have moved their capital into other non-taxed industries.

METHODS USED

The estimates of tax shifting will be obtained by regressing two tax variables, and other factors, on profits net of all taxes. The underlying method is similar to a study of the U.S. Corporation tax undertaken by Kozyzaniac and Musgrave (8). That study has come under widespread criticism for trying to explain profits with:

(i) Variables that have no obvious economic rationale, e.g. the ratio of inventory to sales in the previous period; and

(ii) Variables that may conceal and be affected by the actual shifting mechanism. J.M. Davious points out,

"If there is forward shifting via price increases the inclusion of current price and company tax as independent variables will lead to collinearity." (2, p. 275)

Furthermore, the study used "instrumental variables" (to allow for the fact that company income taxes are themselves a function of the level of profits) and this technique has certain defects (e.g. the set of instrumental variables that one may choose is not unique and so one's final choice is arbitrary).[1]

This paper improves on the U.S. study by including only variables that have an economic justification and are relatively insensitive to the means of shifting. For example, one of the variables used to explain variations in profits will be the concentration ratio of the industry in which the firm is trading. It is possible that one way of adjusting to a tax is for the firm to merge with others and hence limit the state of competition. But, it is very unlikely to have occurred in the first year of operation of the sales tax.

By replacing all tax variables in the model by exogenous variables on which they depend, and by factorising all variables that depend on the level of profits, a "reduced form" equation is obtained which is "exactly identified". This enables ordinary regression techniques to be applied to the

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1. See, for example, A. Koutsoyiannis (7, pp. 373-374).

reduced form equation (i.e."indirect least-squares") and this improves on the use of instrumental variables.[2]

An alternative approach to Krzyzaniak and Musgrave's was devised by R. Gordon (5) and was based on a "cost-plus" theory of firms' pricing behaviour. He developed his own estimation technique and his study met all of the complaints listed above concerning the earlier U.S. study. However, the method used in this paper has the advantage of simplicity and is more general, in that it can accomodate many different types of hypothesis of firm behaviour.

However, it is important to be aware of the existence of the two different approaches to estimating tax shifting. The results have been drastically altered by replacing one technique by the other. And the different results have usually been in one direction, i.e. the Gordon technique consistently gives lower estimates of tax shifting than those derived from Krzyzaniak and Musgrave's model.[3] So, perhaps, one should expect higher estimates of shifting in this paper. However, there is one difference between this study and all the previous ones of which I am aware. This is the first cross-section analysis, and it could be that one of the reasons why Krzyzaniak and Musgrave's results differed so much from Gordon's was because they included variables with a strong time trend.

2. MAIN CHARACTERISTICS OF THE SALES TAX

Since the attempt is to estimate shifting in the first year of the operation of the tax, this section will concentrate mainly on the sales tax as it was originally legislated.[4]

In July 1973 a broad-based sales tax was introduced. This was levied at an ad valorem rate of 10% on most manufactured goods at the wholesale stage; though, petrol, beer and electricity continued being levied at specific rates.

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2. There is still one disadvantage using indirect least squares, for it gives estimates of the original coefficients that are biased for small samples. See A Krntsoyiannis (7. p. 363). Providing the sample contains more than 30 cases, as it does in this study, the bias becomes negligible.

3. Comparisons for a number of countries are given in J.M. Davies (2).

4. The original Sales Tax Act (9) was amended by the Finance Acts of 1975 (4a) and (4b).

The base of the tax was reduced by four main categories of exemption:

(i) most food products, e.g. maize, wheat, flour and sugar;
(ii) some agricultural inputs, e.g. fertilisers and diesel fuels;
(iii) all small firms with a turnover of less than K£5,000, and
(iv) all exports.

The total value of consumption (K£817.3m. in 1974) can be taken to be the base of the tax in the absence of exemptions. The actual base in 1974 was K£319.9m. Thus the value of the exemptions was K£497.4m. and this reduced the potential base by 61%.

The most distinctive feature of the system of refunds as they existed at this time concerned the treatment of imports. Any manufacturer registered for sales tax purposes did not have to pay sales tax at the import stage and was liable only when the finished product was being sold. This provision kept refund claims down to a minimum, but it apparently gave widespread scope for evasion of the tax. Thus in the last two years, sales tax was paid on imports and then eligible for a refund if the items were used subsequently in production rather than consumption. This inceased enormously the number of refund claims.

The original sales tax system lasted till June 1974, when multiple rates were introduced e.g. watches and travel goods attracted a 15% levy and the rate on cigars and cigarettes was raised to 30%. By June 1975, apart from a very few items at 15% and 30%, there were effectively two rates of tax. The standard rate was 10% and a rate of 20% was levied on 51 items.

3. THE MODEL

The effect of taxes on companies can be judged by comparing profits as they exist with taxes, with what they would have been in the absence of taxes. If π^G stands for company profits (gross of taxes) and π^o stands for profits in the absence of taxes, then the two profit measures would diverge by the amount of the tax shifting. Given that the taxes being considered are a sales tax, T^s and company income tax, T^c, shifting can therefore be gauged by:

$$\pi^G = \pi^o + \alpha_s T^s + \alpha_c T^c \qquad (1)$$

where α_s is the extent of sales tax shifting and α_c is the extent of income tax shifting.

The corresponding relation for profits net of all taxes, π^N, follows from the accounting identity:

$$\pi^N \equiv \pi^G - T^s - T^c \qquad (2)$$

Thus, shifting can also be represented by:

$$\pi^N = \pi^o + \alpha_s T^s + \alpha_c T^c - T^s - T^c$$

i.e.

$$\pi^N = \pi^o + (\alpha_s - 1)T^s + (\alpha_c - 1)T^c \qquad (3)$$

It is equation (3) that one wishes ultimately to estimate. If neither of the taxes were shifted (α_s and α_c were both zero) net profits would fall by the full amount of the tax paid. If both taxes were fully shifted (α_s and α_s were both unity) net profits would be completely unaffected by the existence of taxes. A value for α_s and α_c greater than unity represents the case of over full shifting.

In order to estimate equation (3) by regression analysis, two conditions (at least) are necessary: Firstly, the variables on the right-hand side must be exogenous. Secondly, the variables on the right-hand side must be uncorrelated. Whether or not π^o will be exogenous depends on the particular theory of profits one has in mind. But, that T^s and T^c cannot be uncorrelatdd and exogenous is guaranteedby their definitions.

First consider T^c. Company income tax is levied at a proportional rate, t^c, on the profits tax base, π^c. That is:

$$T^c = t^c \pi^c \qquad (4)$$

Since income tax itself is not an allowable deduction, while a number of allowances, A, can be used to reduce the tax base, π^c is given by:

$$\pi^c = \pi^N + T^c - A \qquad (5)$$

Substituting (5) in (4) and isolating T^c on the left-hand side, results in:

$$T^c = \left(\frac{t^c}{1-t^c}\right) \pi^N - \left(\frac{t^c}{1-t^c}\right) A \qquad (6)$$

Now consider T^s. The sales tax is proportional to the sales tax base, R^s, which is given by deducting sales tax exemptions, E, from the total value of sales, R. Thus,

$$T^s = t^s R^s \qquad (7)$$

and

$$R^s = R - E \qquad (8)$$

R is itself a part of the income tax base. Note that gross profits are the difference between revenues and costs, C.

$$\pi^G = R - C \qquad (9)$$

This can be substituted into (2) to obtain:

$$\pi^N = R-C-T^S-T^C$$

or

$$R = \pi^N + C + T^S + T^C \tag{10}$$

Thus (8) becomes:

$$R^S = \pi^N + C + T^S + T^C - E \tag{11}$$

and substituting (11) into (7) results in:

$$T^S = t^S (\pi^N + C + T^S + T^C - E) \tag{12}$$

Isolating T^S onto the left-hand side produces,

$$T^S = \left(\frac{t^S}{1-t^S}\right) \pi^N + \left(\frac{t^S}{1-t^S}\right)(C - E) + \left(\frac{t^S}{1-t^S}\right)-T^C \tag{13}$$

Equations (6) and (13) therefore show that both T^S and T^C are endogenous (dependent on π^N) and intercorrelated. However by using (6) and (13), the reduced form of (3) can be obtained such that π^N will depend only on the exogenous variables in the system, i.e. Π^O, A, C and E. The reduced form is:

$$\pi^N = \left(\frac{1-t^S-t^C + t^S t^C}{1-\alpha_S t^S-\alpha_S t^C+\alpha_C t^S t^C}\right) \pi^O + \left(\frac{t^C-\alpha_S t^S t^C+\alpha_C t^S t^C-\alpha_C t^C}{1-\alpha_S t^S-\alpha_C t^C+\alpha_C t^S t^C}\right) A$$
$$+\left(\frac{t^S t^C-t^S+\alpha_S t^S-\alpha_S t^S t^C}{1-\alpha_S t^S-\alpha_C t^C+\alpha_C t^S t^C}\right) (C-E) \tag{14}$$

This can be simplified by recognising that the tax rates were the same for all firms in Kenya during 1974, i.e. $t^C = 0.45$ and $t^S = 0.1$. The reduced form then becomes:

$$\pi^N = \left(\frac{0.495}{1-\alpha_S 0.1 -\alpha_C 0.405}\right) \pi^O + \left(\frac{0.45-\alpha_S\ 0.045-\alpha_C\ 0.405}{1-\alpha_S 0.1 - \alpha_C 0.405}\right) A$$
$$+\left(\frac{-0.055 +\alpha_S\ 0.055}{1-\alpha_S\ 0.1-\alpha_C\ 0.405}\right) (C-E)$$

or

$$\pi^N = B_O\ \pi^O + b_A\ A + b_E(C-E) \tag{15}$$

Where:

$$b_O\ \frac{0.495}{1-\alpha_S\ 0.1 -\alpha_C\ 0.405}; \qquad b_A = \frac{0.45-\alpha_S\ 0.045-\alpha_C\ 0.405}{1-\alpha_S\ 0.1 - \alpha_C\ 0.405}$$

$$b_E = \frac{- 0.055 + \alpha_S\ 0.055}{1-\alpha_S\ 0.1 - \alpha_C 0.405} \tag{16}$$

These b coefficients provide two independent equations[5] with two unknowns and so the reduced form equation is determinate and hence "exactly identified". It is therefore amenable to estimation via the indirect least squares technique. Before going on to outline the particular hypothesis of profits, π^o, that is to be used in this study, it is useful to substitute limiting values for α_s and α_c into the b equations to see what sort of values one should expect.

First consider the case where both of the taxes were fully shifted. Substituting $\alpha_s = \alpha_c = 1$ into b_A and b_E produces:

(i) $b_A = 0$ and $b_E = 0$

The interpretation of this is that if taxes can be shifted fully then the existence of tax allowances and exemptions would have no effect on profits (π^N). Now consider the case where neither of the taxes can be shifted to any extent. Substituting $\alpha_s = \alpha_c = 0$ into b_A and b_E produces:

(ii) $B_A = 0.45$ and $b_E = -0.055$

The general principle here is that given that a tax would have otherwise reduced profits, the gain from securing a tax exemption is dependent on the rate of tax that was charged. Thus the value of the income tax allowance would be worth t^c, or 0.45. The value of the sales tax exemption would be worth $(1- t^c)t^s$, or 0.055, because being exempt from the sales tax does not preclude the gain from being subject to the income tax. In other words the firm would only be allowed to keep 55% of the 10% sales tax exemption.

THE PROFITS HYPOTHESIS

The profits af a firm (π^o) can be explained in two stages. Firstly, the firm is subsumed under some industry heading and its profits are then dependent on the prospects for the industry as a whole. Secondly, the firm may have some distinctive characteristics vis-a-vis other firms in the industry which may affect its profits performance.

Under the received theory of the firm, a firms' profit is dependent on the state of competition. The greater the competition the lower the level of profits, in the long run. Using the concentration ratio the industry's profit will therefore be determined primarily by X_1, where: X_1 =The Industry Concentration Ratio. However, in Kenya, certain industries are subject to a different degree of price control than industry generally. So a second industry profit determinant will be:

X_2 = Extent of Price Control

Since the dependent variable is the absolute size of profits, it is very likely that the larger the firm the larger will be π^N.

5. b_o is not independent of B_E or b_A.

X_3 = Firm Size will therefore pick up this scale effect. A second distinguishing characteristic for the firm that may be important, in a developing country, is whether it is a multinational corporation or not. Firms will therefore be classified according to:

X_4 = Nationality of Ownership

To summarise the model, if the four X variables are assumed to be linear determinants of profits in the absence of taxes, then:

$$\pi^o = b_k' + b_1' X_1 + b_2' X_2 + b_3' X_3 + b_4' X_a \qquad (17)$$

The complete shifting model will therefore take the form:

$$\pi^N = b_k + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_A A + b_E (C-A) \qquad (18)$$

where,

$$b_k = b_o b_k'; \; b_1 = b_o b_1'; \; b_2 = b_o b_2'; \; b_3 = b_o b_3' \text{ and } b_4 = b_o b_4'$$

The b coefficients given by (16) can be solved to give values of the shifting parameters in terms of b_A and b_E. Thus:

$$\alpha_s = \frac{-0.45\, b_E + 0.045\, b_A - 0.045}{-0.045\, b_E + 0.045\, b_A - 0.045} \qquad (19)$$

and

$$\alpha_c = \frac{0.1\, b_A - 0.045}{-0.045\, B_E + 0.045\, b_A - 0.045}$$

To estimate the extent of tax shifting then, it is the regression estimates of b_A and b_E in (18) that is of chief concern.

4. THE DATA

The sample of firms used to estimate tax shifting was chosen as follows. The Sales Tax Act (9) identified those industries whose output were subject to sales tax. There were 31 such industiies using the I.S.I.C. classification on a 4-digit basis.[6] All the firms contained in these industries were listed in the "DIRECTORY OF INDUSTRIES, 1974" (3) so this represented the sample frame. The aim then was to choose the sample so as represent all the sales taxed industries, and within each industry, to represent firms of all size categories. The directory used a size code based on the number of employees in the firms and there were 6 categories. The potential maximum number of firms that could appear in the smmple was therefore 186. However, because not all industries contained each of the 6 firm sizes, the actual maximum was around 120.

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6. Strictly, there were 31 industries subject to sales tax for which data was available in W. House (6) on their concentration ratio.

The next stage was a visit to the Sales Tax Division of the Ministry of Finance to see which of these firms were registered for sales tax purposes. Of those registered, only those firms for which the Ministry had complete records of their sales tax returns for 1974 were chosen. This reduced the sample to a maximum of about 70 firms. Questionnaires were then sent, or delivered personally, to 55 of these firms, the remainder being covered by their company's Annual Report, supplemented by telephone reguests for information when the reports had any omissions. Whatever the means, the information collected was on a consistent basis, and followed the form of the questionnaire which is appended at the end of the paper. The final outcome was a sample of 35 firms in 23 of the industries whose output was subject to sales tax.

Apart from X_1, all the X variables were specified as dummy variables. X_1 is the concentration ratio allowing for competition from abroad, and the index is as defined in W. House (6).[7] The extent of price control, X_2, was gauged by whether the firm was in an industry which was subject to "selective" price control. Technically, all firms in Kenya are subject to price control and firms must apply to the price commission if they wish to raise their prices. This system can be called "General" price control. However, there a number of industries whose products are thought to constitute essentials for low income earners, and their prices are much more closely requlated. For example, the prices of these products are fixed at the Manufacturing, Wholesale and Retailling levels. There were 5 of the 23 Industries in the sample which were subject to this selective control, and they were:
Soap, Beer, Soft Drinks, Cement, and Wines and Spirits.[8]

Firm size, X_3, was according to the 6 categories given in the Directory of Manufacturing industries. Because there were very few very small firms in the sample, only categories C, D, E and F were tested, where

C = 50 - 99 employees

D = 100 - 199 employees

E = 200 - 499 employess, and

F = Over 500 employees.

Finally, X_4 was according to whether the firm was a "multinational" corporation or not. The definition used was a very broad one and relates to firms that were owned by, subsidiaries of, or affiliates of, firms established outside of

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7. I am grateful to W. House for providing me with the 1974 version of his concentration index.

8. This list comes from a summary of Current Price Orders(1) given to me by one of the officials in the Price Control Division of the Ministry of Finance and Planning.

East Africa. Information on this basis was derived from U.S.(11) and U.K.(10) Embassy lists, and also from "Who Controls Industry in Kenya"(12).

Income tax allowances were measured by multiplying the firm's "trading profits" by the tax rate (0.45) and deducting from this the amoont of oompany tax actually paid. Production costs were estimated by subtracting trading profits from the total value of sales. Sales Tax exemptions were measured by multiplying total sales by the sales tax rate (0.1) and deducting from this the amount of sales tax actually paid. Lastly, the dependent variable, π^N, was obtained by deducting the company income tax paid from "trading profits".

The full specifications of these variables are therefore:

X_1: INDUSTRY CONCENTRATION RATIO

Percentage of total industry output and imports produced by the 3 largest firms in the industry

X_2 SELECTIVE PRICE CONTROL (Dummy Variable)

X_2 = 1 when the firm is in one of the 5 industries subject to selective controls;

X_2 = 0 for all other firms.

X_3: FIRM SIZE (4 Dummy Variables)

(i) X_3^1 = 1 when the firm is size F;

X_3^1 = 0 for all other firms.

(ii) X_3^2 = when the firm is size E or F (E and over);

X_3^2 = 0 for all other firms

(iii) X_3^3 = 1 when the firm is size D, or E, or F (D and over);

X_3^3 = 0 for all other firms.

(iv) X_3^4 = 1 when the firm is size C, or D, or E, or F (C and over);

X_3^4 = 0 for all other firms.

X_4: MULTINATIONAL CORPORATIONS (Dummy variable)

X_4 = 1 for firms that are owned by, subsidiaries of, or affiliates of firms established outside E.A.

X_4 = 0 for all other firms.

A: INCOME TAX ALLOWANCES

The difference between what should have been paid by applying the tax rate to "trading profits" and what actually was paid, measured in hundreds of Kenyan pounds.

C-E: COSTS MINUS SALES TAX EXEMPTIONS

Costs are the difference between trading profits and total sales (a positive figure) measured in hundreds of Kenyan pounds. Sales tax exemptions are the difference between what should have been paid by applying the sales tax rate to total sales, and what actually was paid, measured in hundreds of Kenyan pounds.

5. THE RESULTS

THE SHIFTING MODEL AS A WHOLE

The regression estimates of equation (18) show that 89% of the variation in profits net of taxes can be explained by the six independent variables specified above. Taking the result for the most significant of the firm size variants (X_3^2), the outcome was:

$$\pi^N = \underset{(0.20)}{193.1} + \underset{(0.24)}{3.782}\, X_1 + \underset{(1.34)}{1272}\, X_2 + \underset{(1.99)}{1946}\, X_3^2 + \underset{(0.74)}{670.8}\, X_4 + \underset{(3.10)}{0.0001}\, A + \underset{(8.28)}{0.0556}\,(C-E) \qquad (20)$$

(the figures in brackets are "t" values)

Only firm size was a significant factor of the variables thought to explain π^o. Concentrating only on significant factors led to this alternative result:

$$\pi^N = \underset{(0.13)}{59.23} + \underset{(3.02)}{2371}\, X_3^2 + \underset{(3.71)}{0.0001}\, A + \underset{(9.04)}{0.0552}(C-E) \qquad (21)$$

The explanatory powers of this equation was almost as high as the previous one (the R^2 was 0.88); so variables X_1, X_2 and X_4 in equation (20) did not contribute much to the explanation of profits net of taxes.

THE INDIVIDUAL VARIABLES

X_1: The concentration ratio was not a significant factor behind variations in firm profit levels. It would seem that a firm's profitability was more a product of its individual characteristics (its size) than any group characteristics it may share with other firms (the industry concentration ratio).[9]

X_2: The price control variable had a "t" value greater than 1, but failed to reach significance at the 5% level. This does not show, of course, that the overall system of price control was ineffective. It suggests only that the selective system did not exhibit any differential effect on profits over and above the general system of price control.

X_3: Of the four firm size indicators, X_3^2 (firms employing two hundred persons and above) was the most significant. It reached (approximately) the 5% level in equation (20) and the 1% level in equation (21). And its effect on profits was positive as expected. Though, the independent effect

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9. When the absolute level of profits (π^N) was expressed as a ratio of (a) sales, (b) share capital and (c) depreciation, the concentration ratio was the most significant factor. But, the overall statistical results for such regressions were very poor. No variables, including the tax variables, were significant at the 5% level, and the highest R^2 was 0.20.

of X_3^1 (firms employing 500 and over) could not be tested from the sample of firms in this study, because of the high degree of multicolinearity between it and the income tax allowances variable, A[10].

X_4: Foreign ownership was not a significant factor. Its large correlation with X_3^2 suggests that multinational firms are distinctive from their size point of view;[11] and it is this, rather than foreign dominance per se, that enables such firms to earn higher than average profit levels.

A and C-R: These tax (proxy) variables were significant at very high levels, so the shifting estimates are unlikely to be random outcomes. Both variables had coefficient with a positive sign, but this in itself is not important. One cannot say in advance what one would expect these signs to be because they are a product of an interaction between the unknown shifting parameters.

THE SHIFTING PARAMETERS

The estimates of b_A and b_E are virtually the same whether they come from equation (20) or (21). So the shifting estimates can be taken from (21) with no bias. Substituting b_A=0.0001 and b_E=0.0552 into equation (19) produces:

$\alpha_s = 1.47$ and $\alpha_c = 0.95$

The extent of tax shifting was therefore very high. The company income tax was almost fully shifted and the sales tax was over fully shifted.

6. CONCLUSIONS

(i) If one accepts the suggestion, given in the introduction, that the most probable mechanism of shifting is by firms raising their output prices, than the high levels of tax shifting in Kenya must have contributed, to a not-insignificant extent, to Kenya's recent inflation. With sales tax revenues in 1974 of K£31.90m and additional company income tax of K£7.06m, the shifting estimates imply that K£53.74m was added onto the total value of consumption. This is 96.6% increase.[12] It is true that this is an average effect and the weights in the Nairobi price index give importance to items that are not subject to sales tax (such as food). But, it is unlikely that an average effect of such a magnitude would not have filtered through noticeably to the the consumer price indices.

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10. The simple correlation coefficient between X_3^1 and A was 0.72.

11. The simple correlation coefficient between X_3^2 and X_4 was 0.55.

12. The percentage rises to 8.4% if the shifted value is expressed as a ratio of private consumption only.

(ii) On the face of it, the existence of over-full shifting of the sales tax does suggest that firms (prior to the tax being instigated) were not profit maximising in the short-run. But, why should firms over fully shift the sales tax and not do the same with the company income tax? It would seem therefore that there was something special about the administration of the sales tax that enourages a differential response, even from a profit maximising firm. Two points seem important in this connection. The first explains why the administration of the sales tax encourages fuller shifting, and the second why it could be over-full shifting.

The first point regarding administration is that firms are more or less automatically allowed by the price commission to raise their prices for any rises in costs due to the sales tax, and this is not the case for income tax charges.

The second point concerns the system of refunds. A firm must show the sales tax as a separate item in its purchases of any inputs that it wishes to claim for refund. For two main reasons firms have not always been able to show this. (a) It is costly for the firm to contact every supplier who charges sales tax on its imputs. And (b), some suppliers refuse to provide evidence of sales tax in their invoices for fear that in so doing, information will be gained by competitors as to the firms system of costing.

However, not only will many firms be unable to claim a legitimate refund, any refunds applied for carry a degree of uncertainty as to when they will be forthcoming. The average delay for firms seemed to be 4-5 months. Thus, it could have been that firms considered that rather than claim officialyy for a refund, they would simply add the tax paid on their inputs to the value of their output. In this way, as one manager informed me, "the consumer would be paying twice".[13]

What is being suggested is that, effectively the sales tax is exactly fully shifted, but that there is an element of unrecorded sales tax that the firm pays and reclaims from the consumer rather than the Sales Tax refunds section.[14] Any recorded sales tax paid would then appear to be over-fully shifted.

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13. This need not imply any administrative laxity on the part of the price commission, because any firms applying for a price increase could show evidence of a real rise in costs.

14. This problem of refunds is likely to be somewhat lessened by the 1976 Budget. For a number of items of packaging are now exempt from sales tax and thus do not necessitate a refund application.

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APPENDIX: THE QUESTIONNAIRE USED

FINANCIAL ACCOUNTING DATA FOR THE YEAR ENDING IN 1974

1. Date of Accounting Period .....

2. TRADING PROFIT for 1974 Accounting Year .....

3. CORPORATION TAX on the profits for 1974 Accounting Year
.....

4. DEPRECIATION for 1974 Accounting Year .....

5. TOTAL VALUE OF SALES for 1974 Accounting Year.....

6. VALUE OF AUTHORISED SHARE CAPITAL as at end of 1974 Accounting Year
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