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EAST AFRICA: ESTIMATION OF IMPORT DUTIES ON
TRANSFERRED GOODS

J. R. Clarke

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TRANSFERRED GOODS

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PROBLEM

The imports of each of the three East African countries can be divided into two parts. First there are goods consigned directly to the country in question - Direct Imports. Secondly there are goods originally consigned to another of the three countries and later re-exported to the country under consideration - Indirect Imports. Since duty is levied at the point of entry into the common market area these Indirect Imports, or "transferred goods" raise the question of allocating revenue between the three countries.

There are two ways of sub-dividing these transferred goods. First, transfers that can be traced to a particular import certificate (of their original entry) are called "referenced goods". Secondly, goods which are transferred not in their original packages are termed "broken bulk goods". To a large extent these categories are mutually exclusive, and seem to be treated as such, even though some referenced goods may be broken bulk, and vice versa. The problem of imputing duty arises in the case of non-referenced goods which are subject to an ad valorem tariff. Duty has been charged on the c.i.f. value at the point of entry into East Africa. But the merchant now transferring the goods across "internal" borders has no knowledge of this c.i.f. value. The value that he enters on the transfer form is that at which he will sell the goods (roughly speaking, the cost of the goods at the border).

For the purposes of this essay it is assumed to be impracticable (a) to trace all transferred goods back to their original entry, (b) to require a copy of the original import form when goods are transferred, and (c) to increase the precision with which goods are specified. It follows that some more or less crude method of estimation must be used, and that it will of necessity be inaccurate.

It should be noted that the estimation of duty may involve the estimation of the c.i.f. value of transfers. Whether this is so or not, some estimate of this c.i.f. value is necessary for statistical purposes. In all cases, however, the sources of error in estimating c.i.f. value are transferred to the corresponding estimate of duty, while some methods of estimating total duty will be inaccurate even if the total c.i.f. value they derive from is quite accurate.

PRESENT METHOD

For all goods the c.i.f. value is "estimated" as 70% of the (known) transfer value, and duty estimated accordingly. The figure of 70% was obtained by taking a sample of 295 transfer forms and tracing the goods back to their original importation. Commodities are specified by a five digit code number and a code for country of origin. The average ratio of c.i.f. to transfer value for the 295 forms was taken at the break-down corresponding to the first two digits. A weighted average (by importance in value of transfers) was taken to arrive at the overall "average" of 70%. For a number of reasons this is inadequate.

The first point to notice is that applying a uniform percentage in this way means that the estimated duty written on each transfer form is meaningless. e.g. If the rate of duty on any article is 100%, the actual c.i.f. value will normally be less than 50% of the transfer value.

The present method would estimate the c.i.f. value as 70% of the transfer value, and duty at 100% gives duty also equal to 70% of the transfer value. Since the actual duty is less than 50% of the transfer value, this is clearly quite misleading.

It is, however, the allocation of total revenue that is important. A two digit breakdown is not enough. At that level there are variations in margins and in tariffs. There are a number of points included here. Firstly, aggregating over groups of goods with different rates of duty will produce a bias even if the original ratios are in some sense accurate. This can be shown with simple numerical examples.

But to estimate the bias in practice is difficult because of the calculations involved, and dangerous because it cannot be assumed that the bias will have the same order of magnitude and direction over time. This last point applies to all the sources of error which arise from the various methods of estimation. Secondly, a two digit breakdown leaves very non-homogeneous classes, within which the ratio of c.i.f. to transfer value varies greatly. This will exaggerate the inaccuracy that would occur in any case due to the next point. It is dubious whether 295 is an adequate sample. More than 50,000 transfer forms are received each month. The 5% confidence limits would almost certainly cover a range of 3.5%

It should also be noted that this approach does not distinguish between the various routes (e.g. Kenyan transfers to Uganda and Tanzania are treated alike).

But the main reason why the 70% figure is inadequate is linked with the next point. This is that the survey was carried out in 1956. Since then rates of duty have been changed many times. The duty is one of the main differences between c.i.f. and transfer prices, and so this will make 70% inaccurate, unless the changes have been offsetting. Even in the absence of tariff changes, alternations in the services performed before transfer, and in the composition of transfers have made the 70% figure obsolete. Since in developing countries rapid structural change is to be expected, it is not likely that the composition of imports will remain even roughly constant.

On the other hand, just as it would be awkward to use a number of different percentages for different classes of goods, so it is not practicable to recalculate the figure to be used at short intervals of time, unless some simpler method can be introduced. Further, if changing the basis for estimation requires complex political negotiations, it may be extremely difficult to change the figure once established, possibly requiring legislation by each of the three governments.

POSSIBLE APPROACHES

There are three basic approaches. The first is that used to obtain the present figure of 70%. A larger sample would be necessary and a great deal of work would be involved. At reasonable sample sizes a three digit breakdown would be the finest possible. Also, while a random sample could be selected, it is unlikely that all of the sample would be traced without much personal interviewing and pressure. The costs might well outweigh the gains in accuracy.

The second method involves comparing the prices of goods transferred and goods imported. The unit c.i.f. price of some class of goods (at Mombasa, say) would be calculated. The corresponding unit price for transfers to Uganda from Kenya would be found. The ratio of these unit prices would be an estimate of the ratio of c.i.f. to transfer value. It would be possible to obtain ratios for the full five digit breakdown and country of origin for some time period.

The level of aggregation at which either of these methods is used could be varied. In either case weighted average could give global figures, or, alternatively, individual figures for each section (the breakdown by first digit). Similarly, there could be different figures for each route. Each aggregation introduces a bias of uncertain magnitude and direction.

The advantage of the 'sample' method is that, for each transfer considered, the correct c.i.f. value should be obtained. There would, of course, be a sampling error depending on the size of the sample and the standard deviation of the ratios in the class considered. A 5% confidence range of less than 6% seems unlikely.

Other disadvantages have been mentioned above. The greatest is that re-calculation would be necessary, and yet unlikely to take place often for administrative reasons.

With the aid of a computer the 'unit price' method could cover all transfers. Clearly, it will be impracticable to use separate percentages for all goods. Some aggregation would be necessary. Again, to use the same figure(s) over a period of years has the inadequacies outlined above. The other inaccuracy introduced by this method is that at even/the finest available breakdown, goods are non-homogeneous. If the types which make up a class occur in different proportions in imports and transfers, there will be a bias. Thus if the transfers of a certain good are of higher average quality than the total imports of that good, the estimated ratio of c.i.f. to transfer value will be too low. There seems no a priori reason however, for believing that Ugandan indirect imports from Kenya, say, are of higher quality than total imports through Mombasa.

The third method is to allocate duty according to the proportion by quantity of a commodity that is transferred in a given year. If q units are imported into Kenya and shs. d duty is paid on them; and if t units are transferred to Uganda, then shs. $\frac{t}{q}d$ will be allocated to Uganda.

This amounts to converting the ad valorem rate into a specific rate by calculating duty/unit imported and applying this to the number of units transferred. Since quantities imported and transferred, and duty paid are available for the full breakdown there should be no difficulty in programming a machine to work out for each commodity, quantity transferred \times duty paid \div quantity imported.

It can be easily shown¹ that this is equivalent to using the 'unit price' method at a disaggregated level, and, in a sense, re-calculated yearly.

Unlike the other two methods this approach does not give an estimate of c.i.f. value en route. One is implied however, viz. $\frac{t}{q} V$, where V is the total c.i.f. value of imports of the good in question. Just as in the other cases, estimated c.i.f. value and estimated duty partake of the same sources of error, so this estimate shares with the corresponding estimate of duty the error due to non-homogeneity of goods even at the full breakdown.

¹

For commodity A from country X:

Let q_i = units of type i of A imported into Kenya (say) in year y.

p_i = price of one unit of i, c.i.f. Mombasa.

t_j = no. of units of j transferred to Uganda from Kenya.

s_j = 'selling price' to Uganda of j.

d = rate of duty on A (ad valorem)

all in year y. j is known to be a type of A, but it is not known to which i it belongs. It is assumed that duty remains constant throughout the year.

$$\text{total duty on A} = \sum p_i q_i d$$

$$\text{duty on A transferred} = \sum p_j t_j d, \text{ but } p_j \text{ is unknown.}$$

$$\text{unit price of A c.i.f.} = \sum p_i q_i / \sum q_i$$

$$\text{unit selling price} = \sum s_j t_j / \sum t_j$$

therefore ratio is $\sum p_i q_i \sum t_j / \sum s_j t_j \sum q_i = r$, say and so for type j

estimated duty = $r s_j t_j d$ and summing over the j's estimated duty on

A transferred = $r \sum s_j t_j d = \sum p_i q_i d \times \sum t_j / \sum q_i = \text{total duty} \times \sum t_j / \sum q_i$

If $t_k/q_k = t_1/q_1$ for all k, 1 then this = $\sum p_i t_i d = \text{actual}$

duty on transfers.

Both for duty and c.i.f. value, however, the errors due to aggregation and change over time are thus avoided. The method does not require any initial calculation or subsequent re-calculation, and does not involve long term commitment to specific figures. It is clearly superior in principle to other unit price methods. Whether it is more accurate than a 'sample' is not so easy to decide -- but there is no need for a time consuming survey, and there are the advantages noted at the head of the paragraph.

If duty changes during the year, what then? The 'proportion transferred' method will take an average duty/unit imported. Since for any transfer it will be uncertain when it was imported, this seems reasonable. The 'sample' method would however be applying a figure estimated from a different population and would therefore be at least unsound.

There may however be administrative difficulties. At present duty is transferred between governments every month. The 'proportion transferred' method would mean that duty on non-referenced goods could only be estimated annually. Since these goods make up only a small part of total revenue, some method of making interim payments and an annual adjustment should be possible.

For example, monthly payments could be made, allocating revenue received according to the proportions in which revenue from non-referenced goods was paid in the previous year. Settlement would then be made at the end of the year.

CONCLUSION

If it is administratively feasible, the 'proportion transferred' method should be adopted. It is crude but has the merit of conceptual simplicity. At the same time, if merchants can be encouraged to provide information which will increase the proportion of referenced transfers, the problem will be lessened.