ELASTICITY OF SUBSTITUTION, RETURNS TO SCALE AND FIRM SIZE: AN ANALYSIS OF KENYAN DATA

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ABSTRACT

In this paper the author attempts a comparative analysis of different firm sizes in Kenya's industrial sector, within the production function framework. It is discovered that substitution elasticities are roughly the same and uniformly greater than zero. Homogeneity parameters are about the same at the individual firm level and about unity, but at the aggregate level we witness constant returns to scale for the large firms and increasing returns to scale for the small firms. With present data, we cannot identify duality in factor prices faced by different firm sizes. Capital cost per job is lower for small firms than for large ones.

On the basis of the foregoing, we can tentatively conclude that, if there is a choice between firm sizes, for most policy objectives it would be advisable to opt for the small scale firm. The most important conclusion is that firm size can be a policy instrument.

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INTRODUCTION

In suggesting "some potentially fruitful avenues for further research in the structure of production", J.R. Moroney (22, pp.149-50) hints that highly promising research lies in the area of disaggregation. "One could ideally select a large sample of plants in each of several different ranges of plant size and estimate the production parameters for each range." He suggests that this test could be achieved in principle by dividing industry observations into two subsets, corresponding to those possessing small and large average plant sizes and proceeding with estimation for each subset. In this paper we shall attempt this kind of analysis using Kenyan data.

This approach is particularly important in Kenya in view of an official policy of setting up or otherwise fostering small industrial enterprises in the form of urban industrial estates and rural industrial programmes. (See 7, 15 and 19, p.294.) There is widespread feeling that substantial employment would be created by an accelerated programme of small scale industrialisation. (See 18, pp.18 and 70; and 19, pp.91, 93 and 297.) One school of thought led by Eckaus (9) contends that a major reason underlying the widespread unemployment in late developing countries is the rigidity of factor proportions. The extent to which the capital-labour ratio can be altered depends crucially on the elasticity of substitution between capital and labour. If there is limited scope for substitution, then the pace of expansion of jobs can only be as high (or as low) as the rate of capital growth. But if substitution possibilities exist, as Bruton contends (6), then such policies as shadow pricing and employment incentives would have a reasonable chance of success. The elasticity of substitution parameter indexes the ease with which capital and labour can be substituted. It is a measure of the flexibility of choice in production techniques.

We should seek an answer to the question: What is the nature of the production function underlying the production process? In particular, how substitutable are capital and labour? What is the nature of returns to scale? The latter is an important feature of the production function which would reflect the incidence of diminishing returns. What role can firm size play in reducing the severity of diminishing returns, and in making less imperfect markets prevail?

THE MODEL

We utilise the model developed by Phoebus J. Dhrymes. (8). He showed that if we take a typical firm that behaves as if it were a profit maximiser with its production function being homogeneous of degree h, namely,

$$Q=f(K,N)=N^{h}F(\frac{K}{N},1) = N^{h}f(\frac{K}{N}), \tag{1}$$

and relation (2) existing among wages, output and labour:

$$w = AQ^{\beta}N^{\gamma} \tag{2}$$

where w is the wage rate,

Q is the output,

N is the number of people engaged,

A, β, γ are parameters of the function.

and the following marginal productivity conditions prevailing

$$\frac{\partial Q}{\partial N} = \alpha(t)w \tag{3}$$

where α(t) is an index of market imperfection,[1] then the production function characterising the firm is

$$Q=C(t)\ \{\alpha_{1}(t)K^{h\delta} + \alpha_{2}(t)N^{h\delta}\}^{1/\delta} \tag{4}$$

Expression (4) is a Constant-Elasticity-of-Substitution (CES) class of production function[2] which is homogeneous of degree h in K and N. The elasticity of substitution between capital and labour is given by

$$\sigma = \frac{d\ln(\frac{K}{N})}{d\ln(\frac{w}{r})} = \frac{1}{1-h\delta} = -\frac{1}{\gamma} \tag{5}$$

and the homogeneity parameter is given by

$$h = \frac{\gamma+1}{\delta} = \frac{\gamma+1}{1-\beta} \tag{6}$$

By a logarithmic transformation of (2), we have

$$\ln w = \ln A + \beta\ln Q + \gamma\ln N. \tag{7}$$

Re-arranging, we get $\ln N = -\frac{1}{\gamma}\ln A + \frac{1}{\gamma}\ln w - \frac{\beta}{\gamma}\ln Q$ (8)

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1. If perfect competition prevails, α(t) = 1, but if the markets in which the firm operates are not perfect α(t) would take a value different from unity.

2. That is, Dhrymes' function is of the family of production functions pioneered by K.J. Arrow, H.B. Chenery, B.S. Minhas and R.M. Solow. See their seminal article (1). Both Dhrymes(8) and Arrow, et al. (1) make no a priori assumption about the value of the substitution parameter; it is just a constant whose admissible range is given by the positive half-line, i.e., σ = (0,∞). The preference of Dhrymes over Arrow, et al. - and particularly the generalised form of the latter where h is not necessarily unity - is dictated by the less restrictive postulates of Dhrymes. Arrow et al. assume perfect competition in both product and factor markets while Dhrymes' formulation can accommodate any market situation. Arrow et al. (p.231) assume the existence of a relationship between value added per unit of labour and the wage rate independent of the stock of capital. Hildebrand and Liu (13, p.40) have shown this independence assumption to be untrue so that the estimation of σ by the method developed by Arrow et al. is statistically biased.

The parameters of (7) and (8) can be estimated by regression. Expression (8) yields the conditional expectation of N given w and Q, and with separate data for large and small firms within the same industry, it is possible to estimate the elasticity of substitution from it. The homogeneity parameters can be derived from the coefficients estimated by (7). A statistical test can be applied to determine how significantly different the coefficients generated by various firm sizes are.

DEFINITION FIRM SIZE

There is no universally accepted way of measuring the size of an industrial establishment. Diverse measures have been used to rank firms according to the amount or type of capital or assets of the enterprise, the number of employees, the volume or value of output, floor area of workshops and offices, amount of energy used, functional characteristics such as form of management, or any combination of these criteria.[3]

A United Nations report in 1958 on the Development of Manufacturing Industry in Egypt, Israel and Turkey, cited by Staley (27) refers to small scale as establishments with less than ten persons employed; establishments employing ten or more persons are medium scale and large. Staley himself (27) refers to firms with less than 100 employees as small scale. A combination criterion is suggested by a working group of the Economic Commission for Asia and the Far East, cited by Staley (27), when they recommend that small industry be defined for statistical purposes as establishments with no more than 20 employees when employing power, or 50 when not using power. Albert Berry (4) defined 'cottageshop' establishments in Colombia as having less than 5 workers and less than 24,000 pesos output.

The number of employees is the criterion that is the most widely available, the most convenient and, on the whole, probably the least objectionable for general purposes. It should be appreciated that size is a continuum and that any classificatory demarcation is apt to be arbitrary. Categorisation can be justified only on the basis of theoretical interest, functional usefulness or data availability in a conveniently usable form.

In Kenya's official statistics a large scale firm is one "in which fifty or more workers are engaged". (16) Statistics are shown for establishments or plants — specific locations in which a clearly defined type of economic activity is being undertaken — rather than for firms — independently administered business units which may be made up of more than one establishment. But the words firm, plant or establishment are here used interchangeably because most manufacturing enterprises in Kenya are one-plant firms.

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3. Use of whatever measure is implicitly or explicitly justified on the grounds that different measures are correlated. For an analysis of such correlations, see D.J. Smyth, et al. (26).

We shall use the latest comprehensive Census of Industrial Production. (17) This covered 1967 and was published by the Central Bureau of Statistics of the Ministry of Finance and Planning in 1972. It covered all private and public establishments employing five or more persons. In effect there is an under-enumeration for small firms since firms with 5 to 49 employees are covered and firms with 1 to 4 employees are left out. This can be justified on the grounds that the data for very small units are less complete and accurate. In general, there is much 'noise' in the smaller units. A study in Norway by Grilliches and Ringstad excluded all establishments with less than three production workers after some experimentation. They caution:

> In other contexts one might wish to raise this limit to perhaps ten (or even more) production workers. In any case, in studies of this type, the very small units should be either excluded or subjected to some other special treatment. (12, p.126)

In our case, we simply do not have comparable 1967 data for firms with less than five persons engaged to even apply some special treatment.[4] We therefore, take size category 5-49 as small and 50+ as large.

Industrial Classification

By manufacturing industry is meant all productive processes which are included under ISIC categories 2 and 3. (28) This is done by including those enterprises which are wholly or mainly engaged in manufacturing activities as defined in the ISIC, and excluding enterprises which may be partially engaged in manufacturing but whose principal activities are in other fields.

The industrial classification used in this study and set out in Table 1 is based on the three-digit ISIC. This table should always be referred to for an interpretation of the codes used.

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4. The only official source which we would have expected to provide data for firms with less than five persons engaged is the 1967 Survey of Rural Non-agricultural Enterprises. Unfortunately that survey is not published. Scrutiny of such figures as are available reveals that some firms covered had more than five employees, suggesting a possible overlap and duplication of the 1967 Census of Industrial Production. Value added was not adequately calculated and it is not clear whether what the 1967 rural survey calls 'Annual Mark-up Value', i.e. business receipts minus purchases, should pass as gross production.

Table 1. Industrial Classification.

I.S.I.C. Code Division 2 & 3	Manufacturing and Repairs
200	Coffee Processing
201	Meat Products
202	Dairy Products
203	Canned Fruits and egetables
204	Canning and Preservations of Fish
205	Grain Mill Products
206	Bakery Products
207	Sugar
20	Sugar Confectionery
2	Miscellaneous Foods
211	Spirits
212	Wine Industries
213	Be r and Malt
214	Soft Drinks
220	Tobacco
231	Cotton Ginning
232	Knitting Mills
233	Cordage, Rope and Twine
234	Spinning, Weaving and Finishing of Textiles
241	Footwear
243	Clothing
244	Made-up Textiles
251	Sawn Timber
259	Wood and Cork Products
260	Furniture and Fixtures
271	Manufacture of Pulp, Paper and Paperboard
272	Manufacture of Articles of Pulp, Paper and Paperboard
280	Printing and Publishing
291	Tanneries and Leather Finishing Plants
299	Fur and Leather Products
300	Rubber Products
311	Basic Industrial Chemicals
312	Vegetable and Animal Oils and Fats
313	Paints
314	Wattle Bark Extract
315	Soap
316	Pyrethrum Extract
321	Petroleum Products
331	C ay Products
332	Glass and Glass Products
334	Cement
339	Other Non-metallic Mineral Products
350	Metal Products
360	Non-electrical Machinery
370	Electrical Machinery
381	Shipbuilding and Repairs
382	Railway Rolling Stock
383	Motor Vehicle Bodies
384	Motor Vehicle Repairs
385	Bicycle Repairs
386	Aircraft Repairs
390	Miscellaneous Manufacturing

The Basic Data

One concern in this study is to find out if firm size really makes any difference. Or, put in another way, to establish whether it makes much sense to make size of a firm a policy variable. To be able to choose, choice must be possible. One way to ascertain that choice in firm size is possible is to observe a coexistence of differing **firm** sizes within the same industry.[5]

In this framework, we can use an observation within a particular ISIC classification only if it has at least one observation in every cell. For this reason, we deleted Pyrethrum Extract (316) and Aircraft Repairs (386) because they are found in Kenya only as large firms: there are no small counterparts. Some industries were combined to facilitate comparability within the two size categories.

In Tables 2 and 3 we present the basic data for large firms and for small firms, respectively. Ideally we need data for individual establishments but these are not available in the Census. A partial correction for aggregation can be achieved by using as sample observations the arithmetic means of the data in Tables 2 and 3. The justification is that those means may be taken as proxy observations for the 'representative' establishment. This is one of the reasonings adopted in the analysis that follows when results are presented on a 'per-firm' basis. Wage rate, w, is calculated by dividing labour costs by the number of persons engaged. Labour costs cover all wages and salaries paid in cash including bonuses, the cost of rations and house allowances and also all non-cash labour benefits such as housing, clothing, National Social Security Fund contributions, medical benefits, etc.

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5. It is assumed that when two firms are classified within the same ISIC code they are in fact in the same industry. They may not produce identical prod cts in terms of physical attributes, but their products are substitutable in consumption, i.e. they satisfy virtually the same human need. Ideally, products are the same if they have a high and positive cross elasticity of demand. Determination of such elasticities is not central to this paper. In some cases large firms may be involved in, say, the making of paper, while small firms may be involved in using such paper to, say, assemble cartons. More often than not such firms would be in different ISIC categories (e.g. automobile manufacture vs. automobile repairs). That firms produce competitive products is assumed in the size schema used here.

Table 2. Basic Data for Large-Scale Firms.

I.S.I.C. Code	No. of Firms	Persons Engaged (Number)	Gross Product (K£ '000)	Labour Costs (K£ '000)
201, 202, 203	10	4,868	1,858.3	1,626.0
205	4	1,479	1,235.1	575.7
206, 207, 208	11	2,576	1,185.9	696.9
209	4	1,007	770.4	312.0
211, 213, 214, 220	7	3,213	4,896.0	2,178.1
233	2	1,969	640.4	404.8
234	11	3,569	977.7	696.0
241, 243	19	2,596	975.7	626.2
251	27	3,858	813.8	481.5
260	7	549	188.9	157.7
271, 280	15	2,860	2,523.7	1,578.8
299, 300	5	427	310.0	165.6
311, 312, 313, 315	10	1,434	3,686.2	959.7
319	6	710	834.2	366.0
331, 332, 334, 339	9	1,923	2,326.5	748.2
350	12	2,611	2,064.8	1,005.8
360	7	513	483.7	193.5
370	4	2,411	1,714.8	1,293.1
381, 382, 383	13	8,640	3,000.6	2,494.8
384	17	2,922	2,473.9	1,495.5
390	5	569	254.7	198.8
TOTAL	205	50,704	33,215.3	18,254.7

Source: Kenya. Census of Industrial Production, 1967. Nairobi, Government Printer, 1972, various tables. For ISIC Codes, see Table 1.

Table 3. Basic Data for Small-Scale Firms.

I.S.I.C. Code	No. Firms	Persons Engaged (Number)	Gross Product (K£ '000)	Labour Costs (K£ '000)
201, 202, 203	30	298	167.0	76.2
205	36	364	436.8	183.5
206, 207, 208	38	668	245.8	173.5
209	24	527	288.0	197.7
211, 213, 214, 220	19	341	364.5	160.2
233	12	63	12.9	7.4
234	30	177	164.0	100.2
241, 243	132	1,469	746.7	437.0
251	45	750	314.2	222.4
260	88	1,166	624.7	320.7
271, 280	79	1,553	866.0	606.5
299, 300	22	416	217.4	131.2
311, 312, 313, 315	19	323	270.7	150.5
319	25	469	641.4	247.3
331, 332, 334, 339	15	113	115.6	42.6
350	40	477	309.7	140.0
360	43	630	340.4	212.3
370	18	260	203.0	96.4
381, 382, 393	15	324	186.4	139.6
384	126	1,561	701.6	468.5
390	35	477	349.5	178.3
TOTAL	891	12,426	7,566.3	4,292.0

Source: As for Table 2.

REGRESSION RESULTS

Let the stochastic form of expression (7) be

$$\ln w = \ln A + B\ln Q + \gamma \ln N + E \qquad (9)$$

and than of (8) be

$$\ln N = -\frac{1}{\gamma}\ln A + \frac{1}{\gamma}\ln w - \frac{\beta}{\gamma}\ln Q + u \qquad (10)$$

where E and u are the disturbance terms.

It is assumed that the errors are randomly distributed so that they have an expected value of zero; they also have a finite variance.

The expected sign for γ is negative because a well-behaved demand curve for labour slopes downward and to the right. The sign for β is positive because Q serves as a positive shift parameter to the labour demand schedule. Therefore, $\frac{1}{\gamma}$ is negative and $-\frac{\beta}{\gamma}$ is positive.

The coefficients obtained by Ordinary Least Squares regression of lnN on lnw and lnQ with separate data for large and small firms—on both aggregate and per-firm bases—are given in Table 4. The elasticity of substitution parameters are also shown in this table.

It will be noticed that all the regression coefficients for lnw and lnQ are significantly different from zero at the 95 per cent level of confidence. Hence, rigidity of capital-labour substitution à la Eckaus (9) is manifestly not in tune with empirical fact. To see whether there is a cross-firm-size difference in capital-labour substitution, we test the null hypothesis that $\sigma_L = \sigma_S$ against the alternative hypothesis that $\sigma_L \neq \sigma_S$.

Table 4. Coefficients in Regression (10).

$$\ln N = -\frac{1}{\gamma}\ln A + \frac{1}{\gamma}\ln w - \frac{\beta}{\gamma}\ln Q$$

Description	Sample Size (n)	Intercept	W	Q	R	σ
Aggregate Basis:						
Large Firms	21	-0.52	-1.27 (0.18)	0.95 (0.09)	0.93	1.27 (0.18)
Small Firms	21	-1.10	-1.20 (0.17)	1.05 (0.05)	0.97	1.20 (0.17)
Per-Firm Basis:						
Large Firms	21	-0.52	-1.24 (0.20)	0.94 (0.10)	0.92	1.24 (0.20)
Small Firms	21	-0.72	-1.22 (0.51)	0.95 (0.28)	0.68	1.22 (0.51)

The figures in brackets are standard errors.

We apply the Student's t test for the difference between two sample means under the assumption that the population variances are equal. The test statistic is:

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{\sqrt{(n_1-1)S_1^2 + (n_2-1)S_2^2}} \cdot \frac{n_1 n_2 (n_1+n_2-2)}{\sqrt{n_1+n_2}} \qquad (11)$$

where $\bar{X}_1$ = mean value of the first sample

$\bar{X}_2$ = " " " " second sample

S_1^2 = variance of the first sample

S_2^2 = " " " second sample

n_1 = number of observations in the first sample

n_2 = " " " " " second sample

since $n_1 = n_2 = n$, (11) reduces to

$$t = \frac{(\bar{X}_1 - \bar{X}_2)\sqrt{n}}{\sqrt{S_1^2 + S_2^2}} \qquad (12)$$

with 2(n-1) degrees of freedom.

Now σ_L and σ_S are the mean or expected values of the true but unknown elasticity of substitution, which is some constant equal to σ. By the very properties of Ordinary Least Squares these are unbiased estimates of σ. To test the difference between σ_L and σ_S we can use (12) as follows:

$$t = \frac{(\sigma_L - \sigma_S)\sqrt{n}}{\sqrt{V_{ar}\sigma_L + V_{ar}\sigma_S}}$$

The variances appearing in this test are simply the squares of the estimated standard errors of the respective elasticity coefficients.

The calculated t-value for the per-firm[6] data is 0.24. From a t-table the critical t value, $t_{0.05}$ with 40 degrees of freedom, equals 2.021. We, therefore, cannot reject the null hypothesis that $\sigma_L = \sigma_L$. We conclude that the estimated elasticities of substitution are the same for both large and small firms. We may not, therefore, be able to use firm size to effect greater flexibility in factor proportions, though data limitation makes us hesitate to label this a very firm conclusion.

The OLS regression of lnw on lnQ and lnN yields the coefficients given in Table 5. The homogeneity parameters, h, are obtained by the application of formula (6) and are also given in this table. The variance for h is calculated by following Klein's method[7] of Taylor's expansion of $h = f(\gamma, \beta)$, dropping terms of the order of two or higher and assuming that $\text{Cov}(\gamma, \beta) = 0$.

Table 5. Coefficients in Regression (9).

$$\ln w = \ln A + \beta \ln Q + \gamma \ln N$$

Description	Sample size (n)	Intercept	Q	N	R	h
Aggregate Basis						
Large Firms	21	-0.001	0.604 (0.077)	-0.573 (0.083)	0.88	1.08 (0.220)
Small Firms	21	-1.268	0.697 (0.080)	-0.611 (0.087)	0.90	1.28 (1.229)
Per-firm Basis						
Large Firms	21	-1.065	0.604 (0.074)	-0.549 (0.451)	0.89	1.14 (0.310)
Small Firms	21	-1.312	0.660 (0.075)	-0.446 (0.118)	0.91	1.62 (1.360)

The figures in brackets are standard errors.

6. A per-firm basis is more meaningful than an aggregate basis because production decisions are made at the firm level. The t-value for the aggregate basis is 1.838 which suggests that $\sigma_L > \sigma_S$, but we should not read too much into this. However it tends to support A.S.Bhalla who, in a study of retail trade (2, p.2), argues: "one may expect that large-scale department stores have a greater elasticity (due to easier credit facilities and capital accessibility) than the small-scale stores". But this is no more than a tentative hypothesis.

7. An exposition of Klein's method is to be found in Jan Kmenta. (20, pp.444-45).

Testing whether h differed from unity, we obtained the following t values: 1.62 for large firms at the aggregate level and 2.03 at the firm level; 2.09 for small firms at the individual firm level and 2.29 at the aggregate level. Since the critical t value, $t_{0.025}$ with 20 degrees of freedom, is 2.09, this suggests constant returns to scale for all firms at the individual firm level and regardless of firm size. This further suggests that sizes as they now are should not be altered. However, the question of which sizes to duplicate should be influenced by overall returns to scale. At the aggregate level, large firms display constant returns to scale and small firms display increasing returns to scale. This shows that small firms are too few. We should, therefore, promote small scale industries to the point where the homogeneity parameter is roughly equal to unity.

FURTHER ANALYSIS

Since σ is roughly the same across firm sizes, the only way in which small firms could be a better instrument than large firms for generating employment is in either of two situations. Either:

(1) small firms' factor prices are more 'right', i.e. are closer to shadow equivalents, given that isoquants for both sizes are parallel with $Q_S < Q_L$; or

(2) small firms have lower capital-labour ratios, maybe inherent in their organisation, than their large counterparts, given the same relative prices but non-parallel isoquants with $Q_S < Q_L$.

Let us take the first situation first. Some authors (e.g. 21, p.255; 5, p.6; 11, pp.5-7; and 3, p.11) have argued that factor and commodity prices faced by small scale firms are close to perfectly competitive ones, since small firms have little ability to manipulate in factor or product markets. Hence $\alpha(t)$, the index of markets imperfections, tends to be more pronounced where large firms dominate. Let us see how significant market imperfections are in Kenya. According to Dhrymes, the

> index could be interpreted variously depending on the sample at hand. Thus if we are dealing with time series we could interpret t as time ... market imperfections simply depend on the time of observation. Or if the sample is a cross-sectional one, then t could be interpreted as the rank of the size of the given observation... market imperfections faced by the various units differ, depending upon their size. (8, p.362)

In the same way as Dhrymes (8, p.365), who took t to measure the proportion of a state's labour force employed by the industry in question, we shall use the proportion of employees accounted for by large firms as an index of imperfections.

The regression result is presented below:

$$\ln N = -\ 1.29 - \underset{(0.22)}{1.40} \ln w + \underset{(0.14)}{1.04} \ln Q - \underset{(0.40)}{0.01} M \qquad (10)$$

where N, w, and Q are as previously defined,
M is the index of market imperfections,
$R = 0.92$, and
the figures in brackets are standard errors.

It should be noticed that the coefficient for M is not significantly different from zero. As a result, we conclude that, for the firms considered in this paper, there are no outstanding factor price differentials between large and small firms. One possible source of the relative uniformity of such prices may be that we did not have data for the very small firms -- those employing less than five people. Perhaps the so-called small firms are not really small in the context of Kenya. It would be interesting to repeat this exercise when reliable data on truly small-scale firms are available and finer classification is feasible.

Documentation to the effect that small firms are less capital intensive than large firms is to be found in Hughes (14, p.43), Power (25), Fei and Ranis (10, pp.134 & 168), Pack and Todaro (24, p.25) and Mureithi (23). Capital cost per job is higher in large-scale firms. Hence, in an employment-oriented development strategy emphasis should be placed on small-scale enterprises because they tend to be less capital expensive.

CONCLUSION

In this study we utilise a CES production function as developed by Phoebus J. Dhrymes to estimate both the elasticities of substitution between capital and labour and the homogeneity parameters for Kenya's manufacturing sector - aggregatively and disaggregated by firm size. We discover that the elasticity of substitution between capital and labour, while roughly the same across firm sizes, is uniformly greater than zero so that the so-called factor proportions problem is not a major stumbling block in Kenya. The homogeneity parameters are roughly unity across firm sizes at the individual firm level, but at the aggregate level small firms display increasing returns and large firms constant returns - suggesting that while firm sizes should stay as they are, expansion should emphasise the multiplication of small enterprises.

Duality in factor prices in not discernible between the two firm sizes chosen as indicated by the insignificance of the index for market imperfections. But this may be because of data inadequacy. However, there is ample evidence to show that capital-labour ratio is lower in small than in large firms. Hence, while we are unable to express preference as between firm sizes by reference to the elasticity of substitution (σ) and market imperfection (M), we could certainly propose to promote small-scale enterprises on the homogeneity (h) and the capital-labour ratio ($^{K}/_{L}$) criteria. Firm size can be a policy instrument, if there is a choice between sizes.

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