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An Empirical Verification of Keesings' Hypothesis-Skill Intensity of Exports and Import Replacement in India

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CENTER DISCUSSION PAPER NO. 329

AN EMPIRICAL VERIFICATION OF KEESING'S HYPOTHESIS -
SKILL INTENSITY OF EXPORTS AND IMPORT REPLACEMENT IN INDIA

Sharif Mohammad

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An Empirical Verification of Keesing's Hypothesis -
Skill Intensity of Exports and Import Replacement in India

Sharif Mohammad*

(Abstract)..

Keesing has shown that since U.S.A. has an abundant supply of skilled manpower it is not surprising that the exports originating from this country are highly skill-intensive and that imports much less skill-intensive. Does this explanation have a general validity? Does it follow from this that a country such as India, with an abundant supply of unskilled labour, would find it advantageous to export goods whose production is not highly skill-intensive and import skill-intensive commodities? In the framework of an open static input-output model we have attempted to answer these questions with reference to Indian economy.

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An Empirical Verification of Keesing's Hypothesis -
Skill Intensity of Exports and Import Replacements in India*

Sharif Mohammad

That the Leontief paradox is not really a paradox is clearly demonstrated by Keesing (1966). In some recent papers he has shown that since U.S.A. has an abundant supply of skilled manpower it is not surprising that the exports originating from this country are highly skill-intensive and that imports much less skill-intensive. Does this explanation have a general validity? Does it follow from this that a country such as India, with an abundant supply of unskilled labour, would find it advantageous to export goods whose production is not highly skill-intensive and to import skill-intensive commodities? These are the questions which we have attempted to answer in the present exercise.

The Methodology

Following Keesing (1965), an input-output model has been employed to determine the skill-intensity of exports from and imports into the country. Before describing the details of the model, a word about the determination of skill-intensity of imports is necessary. Given the difficulties of compiling data on skill-intensities of imports from several countries Keesing treats the skill-intensities of import competing industries as a close approximation to these. This assumption

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is based on the observation that skill-intensities of manufacturing industries do not vary significantly between different countries.

The model which we have used is an open static input-output model. In this model, imports are determined partly endogenously and partly exogenously. Exports are exogenously determined. The composition of exports is decided on the basis of the past trends. The steps used in deriving the skill-intensity of export and import-competing industries are shown below using matrix notations. Taking the domestic input coefficient matrix and exports, direct and indirect output required for exports is estimated which has been converted into employment and then skill requirements.

$$X = (I - A + M)^{-1} \cdot (E) \quad \dots(1)$$

$$L = (L/O) \cdot (X) \quad \dots(2)$$

$$S = (L) \cdot (SR) \quad \dots(3)$$

where,

A = Total input-output coefficient matrix of size (62x62)

I = Identity matrix (62x62)

M = Import coefficient matrix (62x62)

E = Diagonal matrix of exports (62x62)

L/O = Diagonal matrix of labour-output ratios (62x62)

SR = Skill-coefficient matrix (62x9)

L = Total sectoral labour requirements - estimates (62x1)

S = Skill composition of the labour requirements (62x9).

The Data

The input-output table used in the Fifth Plan divides the economy into 66 sectors. Since it was not easy to compute the labour-output ratios for the five agricultural sectors separately we have combined these sectors into a single agricultural sector. In all other respects the classification given in the Technical Note was used.

The sectoral labour-output ratios are taken from an earlier study, [Gaiha & Mohammad (1975)]. Since these estimates were obtained from different sources a complete uniformity in the definition of employment could not be attained. Also except for the sectors for which data was taken from the Census Reports, the coverage of the unorganised components of most other sectors is quite patchy.

The definition of skill used here is somewhat arbitrary.¹ We have worked with two alternative definitions: one includes occupational categories (0) and (1), and the second (0), (1), (2) and (3).²

The arbitrariness of this measure lies in the identification of skill in terms of educational attainment. This neglects the skills acquired on the job. While accepting this deficiency in our measurement of skill we would like to mention that in most cases a highly skilled person would be one with a high level of educational attainment.

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1. These two alternative definitions of skill-intensity have been used by Delehanty (1968).
 2. For occupational titles, see Appendix A.

The construction of skill ratios for the 62-sector classification could not be done with the published data (D.G.E. & T). Since the reports published by the D.G.E. & T. present occupational data for a few selected industries, we had to make use of unpublished data supplied by this organization. As unpublished data for a more recent year was not accessible, we relied on data for the year 1965-66.

The Results

Our results are presented in Table 1 through 4. It can be seen from the tables that the skill-intensity in the import-competing industries is considerably higher than the skill-intensity of exporting industries. For example, the skill-intensity in Iron-ore, Other Minerals, Sugar and gur, Textiles, Other Electricals, Rail equipment, etc., is low, ranging between .02 to .06. On the other hand, in the import-competing sectors, Crude Oil, Paper and Paper products, Chemicals, Metal Products, etc. the skill coefficients are quite high, ranging between .05 to .27. The mean skill intensity in export industries is .035 and in the import competing industries .105. Since the mean is influenced by extreme values in the sample the coefficient of variation of skill intensities in two groups of industries are also computed. The coefficients turn out to be 54.63 and 67.25 for the export and import competing industries, respectively.

Another way of approaching this problem is to look at the wage rate differentials between the two groups of activities.³ We find that there is a strong positive correlation between skill-intensity and wage rate in a sample of 28 manufacturing industries. This leads to the inference that the average wage rate would be higher in import competing industries than in the export industries. This is in fact the case. However, there is no inverse relationship between exports and wages. Mean wages in the export and import competing industries are Rs. 1965 and Rs.2624 per annum respectively, and the coefficients of variation turn out to be 33.01 and 22.09 for the two groups, respectively. The Keesing hypothesis, therefore, survives comfortably in the Indian context.

A question which is being given considerable importance in the literature on employment planning concerns the effectiveness of employment as a redistributive measure. Since (a) import replacing industries are found to be more skill intensive than export industries, (b) there is a positive association between wages and skill intensity, and (c) the most highly skilled workers are drawn from relatively affluent families, a given increase of employment in export industries might benefit the weaker sections much more than the same increase in employment in import competing industries. Also, since a given increase in output in export industries would generate more employment than import competing industries the case for promotion of the former with a view to alleviating income inequalities is further reinforced.

3. Keesing (1966).

Conclusions

(1) Our analysis has shown that the availability of skills does influence the trade pattern. More specifically, other things being equal, the trade between two countries would reflect the relative abundance of skills. If a country possesses more of a certain type of skilled manpower it would be advantageous for the country to export commodities whose production requires this skill. The significance of this result lies in a generalisation of Keesing's finding that the exports from the U.S.A. are more skill-intensive than its imports. It focusses attention on an input into production which has not been emphasised sufficiently in the literature.

(2) Another inference which is suggested by our analysis is that the strategy of export promotion is likely to have a larger income-equalising effect than import substitution. If it could also be shown that the cost of achieving a unit increase in exports is lower than or equal to the unit cost of import substitution, a strong case for export promotion can be built up.

Table 1: Sector-wise Skill Ratios

| Sector (No. and title) | Skill Ratio (Definition 1) | Skill Ratio (Definition 2) |
|--|-------------------------------|-------------------------------|
| 1-5 Agriculture | .0391 | .1028 |
| 6 Coal | .060 | .0908 |
| 7 Misc. Coal and Petroleum Products | .0359 | .0908 |
| 8 Iron Ore | .0359 | .0907 |
| 9 Crude Oil | .0359 | .0906 |
| 10 Other Minerals | .0359 | .0907 |
| 11 Sugar and Gur | .0847 | .3127 |
| 12 Vegetable Oil | .0678 | .2772 |
| 13 Tea and Coffee | .0105 | .0792 |
| 14 Other Food Products | .0214 | .0967 |
| 15 Cotton Textiles | .0217 | .0836 |
| 16 Jute Textiles | .0226 | .0735 |
| 17 Other Textiles | .0398 | .1202 |
| 18 Misc. Textile Products | .0320 | .1250 |
| 19 Wood Products | .0332 | .1167 |
| 20 Paper and Paper Products | .0604 | .2323 |
| 21 Leather Products | .0361 | .1169 |
| 22 Rubber Products | .0985 | .2574 |
| 23 Fertilizers | .2476 | .4886 |
| 24 Inorganic Heavy Chemicals | .1085 | .3260 |
| 25 Organic Heavy Chemicals | .2727 | .5555 |

Contd...

Table 1 Contd...

| Sector (No. and title) | Skill Ratio (Definition 1) | Skill Ratio (Definition 2) |
|---------------------------------|-------------------------------|-------------------------------|
| 26 Plastics | .0807 | .2369 |
| 27 Cosmetics and Drugs | .1384 | .5928 |
| 28 Manmade Fibres | .0693 | .1974 |
| 29 Other Chemicals | .0693 | .1965 |
| 30 Petroleum Products | .1129 | .3642 |
| 31 Cement | .0776 | .2397 |
| 32 Refractory | .0237 | .0814 |
| 33 Other Non-met. Min. Products | .0315 | .1109 |
| 34 Iron and Steel | .0747 | .2071 |
| 35 Non Ferrous Metals | .0496 | .1471 |
| 36 Bolts and Nuts | .0560 | .1696 |
| 37 Metal Containers | .0405 | .1617 |
| 38 Other Metal Products | .0515 | .2682 |
| 39 Ball-Bearings | .1020 | .2857 |
| 40 Office & Domestic Equipment | .0913 | .2670 |
| 41 Agricultural Implements | .0912 | .2670 |
| 42 Machine Tools | .1136 | .2564 |
| 43 Other Machinery | .0911 | .2673 |
| 44 Electric Motors | .1381 | .3933 |
| 45 Electric Wires | .0915 | .2863 |
| 46 Electronics | .1250 | .3846 |
| 47 Batteries | .0606 | 1.6923 |
| 48 Electric Household Goods | .1250 | .2857 |
| 49 Radio | .1304 | .3926 |
| 50 Telephone, Telegr. Equipment | .1666 | .4000 |

Contd...

Table 1 Contd...

| Sector (No. and Title) | Skill Ratio (Definition 1) | Skill Ratio (Definition 2) |
|------------------------------|-------------------------------|-------------------------------|
| 51 Other Electricals | .1385 | .3921 |
| 52 Motor Cycles | .0500 | .1859 |
| 53 Motor Vehicles | .1230 | .2939 |
| 54 Ships and Boats | .0425 | .1951 |
| 55 Aircrafts | .1228 | .4222 |
| 56 Rail Equipment | .0266 | .2129 |
| 57 Other Transport Equipment | .0569 | .3972 |
| 58 Watches and Clocks | .0288 | .1322 |
| 59 Misc. Sc. Instruments | .0788 | .2907 |
| 60 Other Industries | .0512 | .1998 |
| 61 Printing | .0781 | .3343 |
| 62 Electricity | .1082 | .5030 |
| 63 Construction | .1440 | .4336 |
| 64 Railways | .0344 | .2043 |
| 65 Other Transport | .0319 | .2122 |
| 66 Other Services | .7443 | 2.2535 |

Note: Skill Ratio = Number of Skilled Workers divided by
the number of unskilled workers.

**Table 2: Skill Intensity Per Crore Rupees of
Exports - 1973-74**

| Sector | Exports (Rs. Million) | Total Labour Required | Definition 1 | | Definition 2 | |
|--------|--------------------------|-----------------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|
| | | | No. of Skilled Workers | No. of Unskilled Workers | No. of Skilled Workers | No. of Unskilled Workers |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1-5 | 1.175 | 1580.00 | 60.00 | 1520.00 | 147.00 | 1432.00 |
| 6 | .024 | 7.37 | 0.26 | 7.11 | 0.61 | 6.75 |
| 7 | .011 | 14.91 | 0.52 | 14.39 | 1.24 | 13.67 |
| 8 | .119 | 15.60 | 0.54 | 15.05 | 1.30 | 14.30 |
| 9 | .0 | 1.95 | 0.06 | 1.89 | 0.16 | 1.79 |
| 10 | .120 | 47.91 | 1.66 | 46.25 | 3.99 | 43.92 |
| 11 | .161 | 2.30 | 0.18 | 2.12 | 0.55 | 1.75 |
| 12 | .400 | 2.62 | 0.17 | 2.45 | 0.57 | 2.05 |
| 13 | .883 | 78.40 | 0.82 | 77.58 | 5.76 | 72.64 |
| 14 | .217 | 7.47 | 0.16 | 7.31 | 0.66 | 6.81 |
| 15 | .970 | 41.96 | 0.89 | 41.07 | 3.24 | 38.72 |
| 16 | 1.072 | 55.31 | 1.22 | 54.09 | 3.79 | 51.52 |
| 17 | .153 | 3.27 | 0.13 | 3.14 | 0.35 | 2.92 |
| 18 | .327 | 10.71 | 0.33 | 10.38 | 1.19 | 9.52 |
| 19 | .064 | 6.08 | 0.20 | 5.88 | 0.64 | 5.44 |
| 20 | .047 | 3.46 | 0.20 | 3.26 | 0.65 | 2.81 |
| 21 | .554 | 9.67 | 0.34 | 9.33 | 1.01 | 8.66 |
| 22 | .048 | 3.79 | 0.34 | 3.45 | 0.78 | 3.01 |
| 23 | .0 | 0.06 | 0.01 | 0.05 | 0.02 | 0.04 |
| 24 | .0 | 1.85 | 0.17 | 1.68 | 0.45 | 1.40 |
| 25 | .0 | 0.02 | 0.0 | 0.02 | 0.01 | 0.01 |

Contd...

Table 2 Contd...

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----|------|-------|------|-------|------|-------|
| 26 | .039 | 1.07 | 0.08 | 0.99 | 0.20 | 0.87 |
| 27 | .0 | 0.20 | 0.02 | 0.18 | 0.08 | 0.12 |
| 28 | .0 | 0.50 | 0.03 | 0.47 | 0.08 | 0.42 |
| 29 | .344 | 20.32 | 1.32 | 19.00 | 3.34 | 16.98 |
| 30 | .136 | 1.09 | 0.11 | 0.98 | 0.29 | 0.80 |
| 31 | .027 | 0.57 | 0.04 | 0.53 | 0.11 | 0.46 |
| 32 | .0 | 1.88 | 0.04 | 1.84 | 0.14 | 1.74 |
| 33 | .033 | 8.18 | 0.25 | 7.93 | 0.82 | 7.36 |
| 34 | .252 | 19.73 | 1.37 | 18.36 | 2.29 | 16.34 |
| 35 | .0 | 9.33 | 0.44 | 8.89 | 1.19 | 8.14 |
| 36 | .0 | 0.51 | 0.02 | 0.49 | 0.07 | 0.44 |
| 37 | .0 | 0.47 | 0.01 | 0.46 | 0.06 | 0.41 |
| 38 | .314 | 9.90 | 0.49 | 9.41 | 2.09 | 7.81 |
| 39 | .0 | 0.02 | 0.0 | 0.02 | 0.0 | 0.02 |
| 40 | .011 | 0.58 | 0.05 | 0.53 | 0.12 | 0.46 |
| 41 | .0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 42 | .0 | 0.02 | 0.0 | 0.02 | 0.0 | 0.02 |
| 43 | .326 | 18.39 | 1.54 | 16.85 | 3.88 | 14.51 |
| 44 | .0 | 0.19 | 0.02 | 0.17 | 0.05 | 0.14 |
| 45 | .0 | 0.16 | 0.01 | 0.15 | 0.03 | 0.13 |
| 46 | .0 | 0.02 | 0.0 | 0.02 | 0.0 | 0.02 |
| 47 | .0 | 0.04 | 0.0 | 0.03 | 0.02 | 0.02 |
| 48 | .0 | 0.01 | 0.0 | 0.01 | 0.0 | 0.01 |
| 49 | .0 | 0.03 | 0.0 | 0.03 | 0.01 | 0.02 |
| 50 | .0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Contd...

Table 2 Contd...

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------|-------|---------|--------|---------|--------|---------|
| 51 | .147 | 5.12 | 0.62 | 4.50 | 1.44 | 3.68 |
| 52 | .020 | 0.75 | 0.04 | 0.71 | 0.12 | 0.63 |
| 53 | .053 | 5.64 | 0.62 | 5.02 | 1.28 | 4.36 |
| 54 | .0001 | 0.05 | 0.0 | 0.05 | 0.01 | 0.04 |
| 55 | .0 | 0.03 | 0.0 | 0.03 | 0.01 | 0.02 |
| 56 | .182 | 18.56 | 0.48 | 18.08 | 3.26 | 15.30 |
| 57 | .0 | 0.10 | 0.0 | 0.10 | 0.03 | 0.07 |
| 58 | .005 | 0.24 | 0.01 | 0.23 | 0.03 | 0.21 |
| 59 | .032 | 1.76 | 0.13 | 1.63 | 0.40 | 1.36 |
| 60 | .486 | 13.78 | 0.67 | 13.11 | 2.30 | 11.48 |
| 61 | .009 | 2.66 | 0.20 | 2.46 | 0.66 | 2.00 |
| 62 | .0 | 13.27 | 1.29 | 11.98 | 4.44 | 8.83 |
| 63 | .0 | 16.49 | 2.07 | 14.42 | 4.99 | 11.50 |
| 64 | .0 | 12.22 | 0.39 | 11.83 | 2.07 | 10.15 |
| 65 | .643 | 293.98 | 9.09 | 284.89 | 51.48 | 242.50 |
| 66 | .593 | 433.57 | 185.01 | 248.56 | 300.31 | 133.26 |
| Total | 9.980 | 2805.84 | 274.03 | 2531.82 | 562.93 | 2242.91 |

**Table 3: Skill Intensity Per Crore Rupees of
Import-Replacement, 1973-74**

| Sector | Imports (Rs. Million) | Total Labour Required | Definition 1 | | Definition 2 | |
|--------|--------------------------|-----------------------------|--------------------|----------------------|--------------------|----------------------|
| | | | Skilled Workers | Unskilled Workers | Skilled Workers | Unskilled Workers |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1-5 | .611 | 477.32 | 18.00 | 459.32 | 44.50 | 432.82 |
| 6 | .0 | 7.97 | 0.27 | 7.70 | 0.66 | 7.31 |
| 7 | .002 | 30.27 | 1.05 | 29.22 | 2.52 | 27.75 |
| 8 | .0 | 2.76 | 0.09 | 2.67 | 0.23 | 2.53 |
| 9 | .663 | 27.86 | 0.97 | 26.89 | 2.32 | 25.54 |
| 10 | .067 | 62.72 | 2.18 | 60.54 | 5.22 | 57.50 |
| 11 | .0 | 0.03 | 0.0 | 0.03 | 0.0 | 0.03 |
| 12 | .133 | 0.96 | 0.06 | 0.09 | 0.21 | 0.75 |
| 13 | .0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | .109 | 4.57 | 0.10 | 4.47 | 0.40 | 4.17 |
| 15 | .017 | 0.86 | 0.02 | 0.84 | 0.07 | 0.79 |
| 16 | .006 | 2.44 | 0.05 | 2.39 | 0.17 | 2.27 |
| 17 | .007 | 0.15 | 0.01 | 0.14 | 0.02 | 0.13 |
| 18 | .002 | 0.42 | 0.01 | 0.41 | 0.05 | 0.37 |
| 19 | .0 | 1.04 | 0.03 | 1.01 | 0.10 | 0.95 |
| 20 | .307 | 13.74 | 0.78 | 12.96 | 2.59 | 11.15 |
| 21 | .0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 22 | .004 | 1.19 | 0.11 | 1.08 | 0.24 | 0.95 |
| 23 | .740 | 9.73 | 1.98 | 7.75 | 3.27 | 6.46 |
| 24 | .277 | 12.12 | 1.15 | 10.97 | 2.98 | 9.14 |
| 25 | .256 | 0.32 | 0.07 | 0.25 | 0.11 | 0.21 |

Contd...

Table 3 Contd...

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----|------|--------|------|-------|-------|-------|
| 26 | .050 | 0.71 | 0.05 | 0.66 | 0.14 | 0.57 |
| 27 | .130 | 3.06 | 0.37 | 2.69 | 1.14 | 1.92 |
| 28 | .024 | 0.26 | 0.02 | 0.24 | 0.04 | 0.22 |
| 29 | .189 | 10.84 | 0.70 | 10.14 | 1.78 | 9.06 |
| 30 | .500 | 2.93 | 0.30 | 2.63 | 0.78 | 2.15 |
| 31 | .0 | 0.18 | 0.01 | 0.17 | 0.03 | 0.15 |
| 32 | .0 | 3.74 | 0.08 | 3.82 | 0.29 | 3.45 |
| 33 | .162 | 19.69 | 0.60 | 19.09 | 1.97 | 17.72 |
| 34 | .544 | 37.77 | 2.63 | 35.14 | 6.48 | 29.29 |
| 35 | .527 | 56.80 | 2.69 | 54.11 | 7.28 | 49.52 |
| 36 | .002 | 1.52 | 0.08 | 1.44 | 0.22 | 1.30 |
| 37 | .001 | 0.83 | 0.03 | 0.80 | 0.12 | 0.71 |
| 38 | .039 | 1.37 | 0.07 | 1.30 | 0.29 | 1.08 |
| 39 | .004 | 0.16 | 0.01 | 0.15 | 0.04 | 0.12 |
| 40 | .010 | 0.52 | 0.04 | 0.48 | 0.11 | 0.41 |
| 41 | .046 | 0.89 | 0.07 | 0.82 | 0.19 | 0.70 |
| 42 | .030 | 11.96 | 0.18 | 1.78 | 0.40 | 1.56 |
| 43 | .924 | 105.33 | 8.80 | 96.53 | 22.21 | 83.12 |
| 44 | .007 | 1.34 | 0.16 | 1.18 | 0.38 | 0.96 |
| 45 | .004 | 0.35 | 0.03 | 0.32 | 0.08 | 0.27 |
| 46 | .0 | 0.04 | 0.0 | 0.04 | 0.01 | 0.03 |
| 47 | .001 | 0.04 | 0.0 | 0.04 | 0.03 | 0.01 |
| 48 | .0 | 0.01 | 0.0 | 0.01 | 0.0 | 0.01 |
| 49 | .003 | 0.15 | 0.02 | 0.13 | 0.04 | 0.11 |
| 50 | .008 | 0.23 | 0.03 | 0.20 | 0.06 | 0.17 |

Contd...

Table 3 Contd...

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------|-------|---------|--------|---------|--------|---------|
| 51 | .134 | 4.57 | 0.56 | 4.01 | 1.29 | 3.28 |
| 52 | .0 | 0.04 | 0.0 | 0.04 | 0.01 | 0.03 |
| 53 | .025 | 3.60 | 0.17 | 3.43 | 0.62 | 2.98 |
| 54 | .004 | 0.21 | 0.01 | 0.20 | 0.03 | 0.18 |
| 55 | .034 | 1.81 | 0.22 | 1.59 | 0.55 | 1.26 |
| 56 | .031 | 4.10 | 0.11 | 3.99 | 0.72 | 3.38 |
| 57 | .0 | 0.08 | 0.00 | 0.08 | 0.02 | 0.06 |
| 58 | .0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 59 | .022 | 1.22 | 0.09 | 1.13 | 0.27 | 0.95 |
| 60 | .007 | 1.04 | 0.05 | 0.99 | 0.17 | 0.87 |
| 61 | .016 | 2.90 | 0.21 | 2.69 | 0.73 | 2.17 |
| 62 | .0 | 17.69 | 1.72 | 15.97 | 5.92 | 11.77 |
| 63 | .0 | 15.06 | 1.89 | 13.17 | 4.56 | 10.50 |
| 64 | .0 | 21.21 | 0.68 | 20.53 | 3.60 | 17.61 |
| 65 | .343 | 186.61 | 5.77 | 180.84 | 32.68 | 153.93 |
| 66 | 1.975 | 663.54 | 283.15 | 380.39 | 459.60 | 203.94 |
| Total | 9.97 | 1830.93 | 338.60 | 1492.64 | 620.64 | 1210.29 |

Table 4: Skill Intensity of Exports in Different Variants of the Fifth Plan

| | Variants of the Plan | | | |
|--|----------------------|----------------|----------------|----------------|
| | 1 | 3* | 4 | 5 |
| Annual Rate of Growth of Exports (per cent) | 7.5 | 7.0 | 6.5 | 8.0 |
| Total Exports (Rs. million) | 28339.1 | 27777.4 | 27047.9 | 28877.4 |
| <u>Occupational Categories</u> | | | | |
| 0 Professional, Technical and Related workers | 536710 | 527005 | 512251 | 546825 |
| 1 Administrative, Executive and Managerial workers | 124345 | 122089 | 118678 | 126688 |
| 2 Clerical and Related Workers | 660809 | 648844 | 630696 | 673263 |
| 3 Sales workers | 9178 | 9014 | 8760 | 9351 |
| 4 Farmers, Fishermen and Related workers | 2599967 | 2551506 | 2481500 | 2648973 |
| 5 Miners, Querrymen and Related workers | 94785 | 93403 | 90456 | 96560 |
| 6 Workers in Transport and Communication | 331847 | 325809 | 316729 | 338103 |
| 7&8 Craftsmen and Production Process workers | 1205925 | 1184498 | 1150963 | 1228645 |
| 9 Service, Sports and Recreation workers | 378181 | 371333 | 360947 | 385309 |
| TOTAL | 5941747 | 5833502 | 5670982 | 6053717 |

*3D is the preferred variant of the Approach Paper of the Fifth Five Year Plan.

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APPENDIX A

Occupational Categories (D.C.E.&T. Classification)

| <u>Code</u> | <u>Title</u> |
|-------------|--|
| 0 | Professional, Technical and Related workers |
| 1 | Administrative, Executive and Managerial workers |
| 2 | Clerical and Related workers |
| 3 | Sales workers |
| 4 | Farmers, Fishermen and Related workers |
| 5 | Miners, Quarrymen and Related workers |
| 6 | Workers in Transport and Communication occupations |
| 7&8 | Craftsmen and Production Process workers |
| 9 | Service, Sports and Recreation workers. |