IMPACT OF FISCAL INCENTIVES ON INDUSTRIALISATION IN BACKWARD AREAS:
A Case Study of Hub Chowki in Baluchistan

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This paper analyses the impact of fiscal incentives on industrialization of backward regions with particular reference to Hub Chowki in Baluchistan. The approach employed is to compare the Net Present Value (NPV) of the project in the underdeveloped area with that in the developed area, after taking into account the variation in capital and recurring costs between the two areas. The analysis shows that the incentives have been more successful in diverting investments from developed areas than in generating new investment. Moreover, it appears that the incentive package has promoted a pattern of industrialization characterized by a high degree of capital and import intensity and a low regional multiplier. The negative impact of the incentives is further reinforced by high welfare costs imposed on the economy. An alternative three tier differential incentive scheme is proposed.

I. Introduction

The spatial inequality of incomes and opportunities is a pervasive facet of economic life, and governments in a number of countries are increasingly tending to incorporate regional development goals in their national plans. In this respect, fiscal and monetary incentives have generally emerged as the primary policy instruments for inducing faster development of backward areas. Such incentives include investment grants and credits, lower interest rates on institutional loans, accelerated depreciation allowances and income tax holidays.

However, while there is some consensus [see Ashcroft and Taylor (1977), Azhar and Sharif (1974), Lent (1967)] on the success of these incentives in diversifying the location of industrial investment and in raising the rate of capital formation, it has been argued that various biases have been created in the choice of projects. Levy and Sarnat (1975), Palash (1979), Ushr (1977), Bond (1981), Singer (1971) and Woodward (1974) claim that the concessions have provided a greater stimulus to projects with higher capital intensity and shorter gestation. This, it is argued, has tended to diminish the magnitude of the regional multiplier impact and led to industrial enclaves in backward areas with bulk of the capital income being pre-empted by residents in the more developed parts of the country.

In Pakistan also, fiscal and monetary incentives for industrial development have been on statute since as early as the 50s. Over time, the scope and content of these incentives have changed in line with the strategy of development being pursued during any period. Initially, the incentives were largely general in character with the objective of promoting industrial development *per se*. In recent years, however, they have become more industry and region-specific. Emphasis has shifted to development of sectors like engineering goods, electronics, agricultural machinery, and manufactured exports, and of backward regions like Baluchistan, Azad Kashmir and the Tribal Areas. Also, primary reliance is now being placed within the package of incentives on customs duty exemption on imported machinery (corresponding to investment credits) and to income tax holidays.

The objective of this paper is to analyse the impact of fiscal incentives on industrial development in one particular region of the country, viz., Hub Chowki in Baluchistan. The particular methodological innovation in the paper is that it represents an ex-ante analysis of investors' decisions regarding choice of project and its location. Such an analysis is considered more meaningful because feasibility studies precede, and do not follow, the decision to invest. However, results of the research cannot perhaps be readily generalized to other backward regions of the country because of the particular locational advantages possessed by Hub due to its close proximity to the city of Karachi, the leading commercial and industrial metropolis of Pakistan.

Section II of the paper contains the theoretical framework for analysis of the impact of the fiscal incentives on investment level and location. Section III gives a description of the data used in the analysis and section IV presents the results. Section V highlights the profile of the units being located in Hub from the viewpoint of determining the magnitude of the regional multiplier effects. Section VI quantifies the national welfare consequences of the scheme. Finally, section VII presents a set of policy recom-

mendations regarding the scope, content and level of fiscal incentives for regional development of industry which follow from the analyses.

II. Theoretical Framework

In this section we set up the methodology for analysing the impact of fiscal incentives, in the form of exemption of customs duty on imported machinery and a five year tax holiday on profits, on investment level and location. The primary purpose of this analysis is to compare the net present value of the project as implied by the investment proposal in Hub Chowki with that in a developed area. For this purpose the extent of variation in capital and recurring costs between the two areas has to be estimated.[1] This arises, firstly, because the relative factor price between capital and labour could differ significantly as a consequence of the reduction in the price of capital goods in the backward area due to the import duty exemption. However, there is the general presumption that wage rates are also lower in the underdeveloped region. But while this may be true with respect to unskilled labour the relative scarcity of skilled and managerial personnel in the region may require initially the transfer of such personnel from the developed areas of the country. Such labour could turn out to be more costly because of the need frequently to provide incentives in the form of dislocation allowances to facilitate the transfer. Therefore, the difference in total labour costs between the two regions may be marginal.

Secondly, differences in costs may arise due to a variation in the access to infrastructure by industrial plants in the two regions. This is one of the primary reasons why one area is more developed than the other. As such, in the backward area it may be necessary to invest privately in the provision of transport, electricity or water supply to the plant whereas such facilities may already have been publicly provided in the developed area.

The basic tradeoff, therefore, is between the operating cost advantages in the developed area versus the reduction in effective price of capital goods due to import duty exemption and higher net profits in the underdeveloped location due to tax holiday. If the latter is greater/smaller than the former then the fiscal incentives will succeed/fail in promoting regional development of industry.

Formally, the analysis is undertaken by designating first the following: K = capital cost of project, M = level of physical capital stock, E = equity, D = debt, L = employment, w = wage rate, W = wage bill, r = interest rate, m = rate of import duty on machinery, t = corporate tax rate and V = net

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[1] The differences between the two areas arise only from the cost side because of the assumption that the gross revenue stream of a project is unaffected by location.

present value of project. These magnitudes are identified for the under-developed and developed areas with the help of subscripts zero and one, respectively.

The extent of exemption of customs duty on imported machinery is denoted by e ($0 < e \leqslant 1$), and the number of years of tax holiday on profits in the backward area by n ($n > 0$).

K_o and L_o are given in the investment proposal. It is assumed at this stage that the production function[2] for output from the project can be specified as follows:

$$Q = AM^{\alpha} L^{1-\alpha} \tag{1}$$

where $\qquad M_o = \dfrac{K_o}{[1+m(1-e)] P_k} \quad$ and $\quad M_1 = \dfrac{K_1}{[1+m] P_k} \tag{2}$

and P_k is the c.i.f. price of imported capital goods.[3]

Clearly, the entrepreneur will opt for a different choice of technique if he were to produce in the developed area in view of the difference in factor prices. The cost minimising combination of K and L in the developed area then is given by

$$L_o = \frac{(1-\alpha) \; r K_o}{\alpha w} \tag{3}$$

Similarly, $\qquad L_1 = \dfrac{(1-\alpha) \; r K_1}{\alpha w} \tag{4}$

on the assumption that the average wage rate does not vary significantly between the two regions for reasons given earlier.

Given that the output from the project is the same in the two areas

$$M_o^{\alpha} L_o^{1-\alpha} = M_1^{\alpha} L_1^{1-\alpha} \tag{5}$$

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[2] The production function has been taken to be of the Cobb-Douglas type with constant returns to scale and unit elasticity of substitution. This is justified on the grounds that at the stage of formulation of investment proposal, *ex-ante* elasticity of substitution between capital and labour is likely to be relatively high. Given the constant returns to scale assumption, α is derived as the share of labour in total costs.

[3] It is assumed that bulk of the machinery is imported. This is confirmed by the data obtained from the sample units on the source of machinery for the proposed plants.

Substituting into this equation from (2), (3) and (4),

$$K_1 = \left[\frac{1+m}{1+m(1-e)} \right]^{\alpha} K_0 \tag{6}$$

We also have that
$$M_1 = \left[\frac{1+m(1-e)}{1+m} \right]^{1-\alpha} M_0 \tag{7}$$

and
$$L_1 = \left[\frac{1+m}{1+m(1-e)} \right]^{\alpha} L_0 \tag{8}$$

Therefore, given K_0 and L_0 from the feasibility exercise, the magnitude of K_1 and L_1, if the project had been located in the developed area, can be determined.

It may be noticed that in the case when $e=0$, the choice of technique, M/L, in the two areas is the same. Alternatively, when $e=1$, as is the case currently in Hub, then

$$K_1 = (1+m)^{\alpha} K_0$$

$$M_1 = \left[\frac{1}{1+m} \right]^{1-\alpha} M_0 \tag{9}$$

$$L_1 = (1+m)^{\alpha} L_0$$

Following the determination of the optimal factor combination in the developed area based on knowledge of the production function, choice of technique in the backward area and relative factor prices, we can now proceed to derive the net present value of the project in the two regions.

The magnitude of V in the underdeveloped area to equity holders is represented by

$$V_0 = -\sum_{i=0}^{t^*-1} \frac{E_{io}}{(1+r)^i} + \sum_{i=t^*}^{t^*+n} \frac{\pi_i}{(1+r)^i} + (1-t) \sum_{i=t^*+n+1}^{T} \frac{\pi_i}{(1+r)^i} + \frac{BUV_0}{(1+r)^T} \tag{10}$$

t^* is the gestation period of the project, and $\sum_{i=0}^{t^*-1} E_{io} = E_0$.

π_i is the profit in the ith year net of debt-servicing costs.

BUV_0 is the break-up value of the project in the backward area in year T.

The difference in capital costs, ΔK, and labour costs, ΔW, of the project in the two locations can be expressed as

$$\Delta K = K_1 - K_0 + KCA, \quad \Delta W = w(L_1 - L_0) \tag{11}$$

where KCA^4 is the capital cost advantage/disadvantage of the project in the developed area due to difference primarily in building and land costs. The latter is likely to be higher in the developed area while the former may be lower.

On the assumption that the debt-equity ratio in the developed area is the same as that observed in the backward area, we have

$$E_1 = E_0 + \left(\frac{E_0}{K_0} \Delta K \right) \tag{12}$$

while ΔD, the increase in corporate debt, is given by

$$\Delta D = \frac{D_0}{K_0} \Delta K \tag{13}$$

and, $$V_1 = - \sum_{i=0}^{t^*-1} \frac{E_{i1} + \Delta D_i}{(1+r)^i} + (1-t) \sum_{i=t^*}^{T} \frac{\pi_i + RCA_i - \Delta W_i}{(1+r)^i} + \frac{BUV_1}{(1+r)^T} \tag{14}$$

with $$\sum_{i=0}^{t^*-1} E_{i1} = E_1 \text{ and } \sum_{i=0}^{t^*-1} \Delta D_i = \Delta D.$$

RCA_i is the recurring cost advantage in the ith year of the developed area due to cheaper access to electricity, water supply, gas, transport, etc., BUV_1 is the break-up value in the developed area.

Once V_0 and V_1 for a particular investment proposal have been estimated a judgement can be made as to whether the choice of Hub for location of the project represents a case of diversion of the investment away from the developed area or corresponds to a rise in the level of investment in the economy due to the fiscal incentives. The former conclusion is implied if

$$V_0 > V_1 > 0 \tag{15}$$

and the latter if $$V_0 > 0, \; V_0 > V_1, \; V_1 < 0 \tag{16}$$

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[4] As a simplifying assumption, the same input-output coefficients have been taken for land and buildings at the two locations.

In other words, the fiscal incentives only affect the location of a project in favour of the backward area if its net present value is positive in both the developed and underdeveloped area; implying that investment would have taken place in the former area anyway. However, since $V_o > V_1$, due to fiscal incentives in the latter, the project gets diverted to this region.

Alternatively, it is possible that $V_1 < 0$, indicating that the project would not be undertaken in the developed area. However, since $V_o > 0$, following the special fiscal concessions, this is the case of an increase in the investment level in the economy.

III. Description of the Data

The theoretical framework developed in the previous section has been applied to a sample of 29 units sanctioned for investment upto April 1980 by official loan granting agencies viz., Pakistan Industrial Credit and Investment Corporation (PICIC) and Industrial Development Bank of Pakistan (IDBP), for which detailed feasibility studies had been undertaken. Information relating to capital structure, product mix, type and source of raw materials, market make-up, labour force size, asset composition, infrastructure needs and costs, profit stream and some relevant financial and economic ratios were obtained, firstly, from the feasibility reports submitted by intending investors to the official loan granting agencies and, secondly, through interviews with owners/managements of sanctioned industrial units.

A casual examination of the data reveals that bulk of the projects are large and capital intensive. Project size ranges from Rs 1.26 to 193.1 million, with the average being Rs 36 million. The capital-labour ratio ranges from Rs 0.036 to Rs 1.00 million per worker, with the average being close to Rs 0.3 million. The product mix is composed primarily of intermediate goods, like polyester yarn, concrete pipes, particle board, iron castings, cables, automobile wheel rims, etc., and some consumer goods like shoes, electric bulbs, flour, ice, etc. Interestingly, there are no capital goods projects among the industrial units sanctioned at Hub Chowki upto April 1980.

Analysis of the level of projected profitability of the units reveals that there is substantial variation with initial year profits as a percentage of capital invested ranging from less than one per cent to over 78 per cent. It appears that in most cases full capacity operation is expected to be obtained in one to four years and estimates of peak profits as a percentage of capital invested range from 9 per cent to 80 per cent.

The infrastructure cost disadvantages at Hub relate to land and buildings in the case of capital and water, power and transport in the case of recurring costs. In 13 out of 29 projects, accounting for 42 per cent of investment,

the situation is one of capital cost advantage due to lower land costs at Hub. These cost advantages as a percentage of capital invested range from 0.2 per cent to 7 per cent. The ratio for capital cost disadvantage in Hub for the remaining 16 projects ranges from 0.2 per cent to 18 per cent. The recurring cost disadvantage of Hub applies to all projects and its ratio with respect to capital invested ranges from as low as one per cent to as high as 68 per cent. Therefore, the latter cost differentials are generally of greater importance in affecting profitability.

Magnitudes of the parameters used in the net present value calculations are 52.5 per cent for Corporate Income Tax (t), 40 per cent of c.i.f. value for import duty on machinery (m), and 15 per cent for the rate of discount (r).[5] Further, the period of the tax holiday (T) and the time horizon of the investor have been fixed at 5 and 12 years respectively. The former is fixed by government policy while the latter is based on the loan maturity period which is equal to 12 years.

IV. Impact on Investment Level and Location

The principal results based on application of the methodology developed earlier are presented in Table 1. It appears that 24 out of 29 projects accounting for 76 per cent of investment are characterised by positive net present values even if located in the developed area; implying, thereby, that this component of investment would have occurred even without the incentives. However, since the net present value is higher in the underdeveloped area on account of the incentives, these investments have been diverted from the developed area.[6] Five projects accounting for 24 per cent of investment are characterised by negative net present values in the developed area and positive net present values in the underdeveloped area; implying·that this component of investment has been generated as a result of the incentives.

It can be seen, therefore, that the incentives have been largely successful in diverting investment from the developed to the underdeveloped area but not in terms of raising the level of investment significantly. It must also

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[5] The opportunity cost of capital in the private sector is relatively high, firstly, on account of alternative investment opportunities in trading, real estate, etc., and secondly, because of the high subjective risk perception of investment. As such, the real rate of discount has been fixed at 15 per cent. Further, in order to confirm the soundness of the selected rate, all sanctioned projects at Hub were evaluated at varying rates which showed that the minimum value of r at which virtually all projects exhibited $NPV_o \geqslant 0$ was, in fact, at 15 per cent.

[6] The NPV for Project No. 8 is negative in both developed and underdeveloped area; although, it is less negative in the latter. This can be classified as a case of wrong investment. Further, Project Nos. 21 and 27 have NPVs higher in the developed area than in the underdeveloped area. These can be classified as cases of wrong location.

TABLE 1

Net present value of sample projects in the developed and underdeveloped area

(Rs. in Million)

Project*	Capital Cost in Hub Chowki	Cost Advantage of Developed Area		π_o	N (Years)	π_c	V_1	V_o	Type
		Capital	Recurring						
1. Wheel Rims	193.10	0.54	5.34	27.00	7	79.60	25.57	123.81	Diverted
2. Jute Sacking	83.00	-1.00	2.47	6.11	4	15.11	8.87	40.03	Diverted
3. Pre-Fabricated Houses	77.50	-1.01	4.19	15.20	1	15.20	-3.74	18.63	Generated
4. Polyester Yarn	75.96	0.45	3.65	5.33	3	7.79	-9.81	11.61	Generated
5. Glass Bottles	70.00	0.33	0.81	9.72	3	20.26	4.15	42.95	Diverted
6. Electric Cables	60.00	-1.00	14.75	7.04	4	20.00	37.01	37.06	Diverted
7. Bicycle Tyres	59.60	-0.09	5.68	6.54	1	6.54	7.38	18.36	Diverted
8. Concrete Pipes	55.00	-0.23	0.91	0.06	3	4.90	-13.58	-2.18	Wrong Investment
9. Lamp Bulbs	53.40	0.57	2.86	2.44	4	13.84	0.49	19.06	Diverted
10. Iron Castings	54.50	0.14	19.95	24.40	1	24.40	74.84	76.92	Diverted
11. Laminates (Formica)	39.00	-0.13	0.72	3.47	1	3.47	-9.98	2.06	Generated
12. Jute Twine	52.00	0.09	5.55	3.14	4	9.20	7.02	13.44	Diverted
13. Particle Board	33.90	0.40	7.41	11.88	1	11.88	29.02	38.00	Diverted
14. Polypropylene Bags	22.00	0.45	2.37	6.30	1	6.30	8.26	16.09	Diverted
15. Flourescent Tubes	14.00	0.70	1.11	0.99	1	3.00	1.25	3.36	Diverted
16. Plastic Shoe Soles	13.70	-0.17	0.25	2.00	3	3.61	1.36	7.54	Diverted
17. Brass Products	12.90	-0.10	1.19	1.44	3	3.67	4.69	7.90	Diverted
18. Polythelene Sacks	11.81	-0.06	1.14	0.12	4	1.96	0.35	1.63	Diverted
19. Cooking Oil and Margerine	11.45	0.67	1.32	6.43	1	6.43	9.27	16.66	Diverted
20. Liquid Oxygen	9.90	-0.15	1.50	0.58	4	1.38	1.20	1.38	Diverted
21. Oxygen Gas	6.10	1.10	4.12	4.78	1	4.78	15.29	13.30	Wrong Location
22. Pesticides	6.00	0.13	0.30	1.35	1	1.35	-0.53	1.49	Generated
23. Oxygen Gas	5.40	0.33	0.68	0.83	1	0.83	0.60	0.87	Diverted
24. Wheat Flour	3.40	-0.25	0.54	0.77	3	1.26	1.88	2.18	Diverted
25. Oxygen Gas	8.10	-0.05	1.48	1.61	1	1.61	3.01	3.80	Diverted
26. M.S. Bars	2.59	-0.09	0.36	0.88	3	1.19	2.36	3.23	Diverted
27. Ice	2.54	-0.09	0.26	0.17	4	0.27	0.34	0.08	Wrong Location
28. Sanitary Ware	1.95	0.13	0.18	0.11	4	1.18	2.00	3.30	Diverted
29. Paints & Coating	1.26	0.13	0.18	0.52	3	1.01	1.75	2.68	Diverted

* Names of the projects have been suppressed in order to preserve confidentiality of information. π_o = first year profits, N = Number of years to attain full capacity operation, π_c = profits at full capacity operation.
Source: PICIC and IDBP, Project Feasibility Reports.

be noted that the said impact has been limited to Hub Chowki, situated as it is in close proximity to Karachi, and therefore having access to some of the agglomeration economies, labour supply, capital and entrepreneurship in the latter.

V. Impact on Regional Development

The emerging pattern and composition of the industrialization process at Hub Chowki in response to the given incentive package possess certain distinguishing characteristics which may tend to run counter to the stated national and regional developmental goals.

A profile analysis of the sanctioned projects with respect to size of investment, type of products, capital intensity, head office location, source of raw material and market make-up is shown in Table 2. It can be seen that about 90 per cent of the projects are large-scale endeavours involving an investment of Rs 20 million or more each. With respect to type of output, over 90 per cent of the projects are stipulated to produce intermediate goods for the domestic market, thereby, underlining the highly import substituting nature of industrialization. The remaining 10 per cent of the projects are of consumer goods. None of the projects is in the capital goods sector.

A perhaps not unanticipated feature of these investments is their high capital intensity with 95 per cent of the projects possessing a capital-labour ratio of over Rs 100,000 per worker as compared to the incremental capital-labour ratio of Rs 72,700 per worker for the industrial sector as a whole during the Fifth Plan period.[7] In the case of eleven projects accounting for 73 per cent of investment, the capital cost of creating one job even exceeds Rs 250,000 while in one case it touches the Rupees one million mark. Another feature of the capital installed is that, as mentioned earlier, virtually all the machinery is imported. The high capital intensity of industrial investments at Hub Chowki, as mentioned earlier, is quite understandable given the distortion in relative prices of capital and labour due to the complete exemption of import duty on machinery. A natural corollary of the high capital intensity is the relatively low employment effect. Moreover, with managerial personnel and skilled labour also likely to be recruited from Karachi, the size of regional employment generation stands further reduced.

Further, while the incentive package offered appears to have succeeded in raising the mobility coefficient of capital in the developed areas, it has failed to stimulate or generate indigenous capital and/or entrepreneurship. This is indicated by the fact that the head offices of all the 29 projects are

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[7] Fifth Five Year Plan, 1978-83, Government of Pakistan, June 1978, pp. 17 and 90.

TABLE 2

Profile of diverted, generated and total investment at Hub

(%)

Project Characteristic	Diverted Investment	Generated Investment	Total Investment
Size:			
0.00 — 10 (million)	5.3	2.4	4.6
0.01 — 20 (million)	8.1	—	6.1
0.02 — above (million)	86.6	97.6	89.3
Total	100.0	100.0	100.0
Capital Intensity (K/L):			
0.000 — 0.073 (million)	—	—	—
0.073 — 0.100 (million)	6.0	—	4.5
0.100 — above (million)	94.0	100.0	95.5
Total	100.0	100.0	100.0
Output Type:			
Consumer	12.8	—	9.7
Intermediate	87.2	100.0	90.3
Capital	—	—	—
Total	100.0	100.0	100.0
Head Office Location:			
Baluchistan	—	—	—
Karachi	100.0	100.0	100.0
Elsewhere	—	—	—
Total	100.0	100.0	100.0
Source of Raw Material:			
Baluchistan	11.1	—	8.4
Rest of Pakistan	18.3	52.3	26.6
Foreign	70.6	47.7	65.0
Total	100.0	100.0	100.0
Market Make-up:			
Baluchistan	4.1	—	3.1
Rest of Pakistan	95.6	99.5	96.6
Foreign	0.3	0.5	0.3
Total	100.0	100.0	100.0

Source: PICIC and IDBP, Project Feasibility Reports.
Sample Survey.

located in Karachi. Also, most of the units are sponsored by the established capitalist families of Pakistan, who have been among the first to seize the profit opportunities created by the concessions.

The source of raw materials/inputs and the market make-up of output of industrial units at Hub Chowki also point towards weak backward and forward linkages.[8] About two-thirds of raw materials/inputs to be used by the sanctioned projects are likely to be imported while about one-fourths is to be supplied by the rest of the country and only one-twelfths by Baluchistan. Twenty-one units accounting for 80 per cent of investment are not likely to utilize any raw material or inputs produced, manufactured or extracted in Baluchistan. Further, 11 units accounting for 54 per cent of investment are likely to be entirely dependent upon imported raw materials.

The share of Baluchistan in the marketing of output is a meagre 3 per cent. Bulk of the marketing is to the rest of the country and a small proportion, less than one per cent, is to be exported. Twenty-three units accounting for 97 per cent of investment are not likely to market any of their output in Baluchistan.

Altogether, the regional multiplier effect exerted by the pattern of industrialisation in Hub Chowki appears to be minimal. The role of indigenous capital and labour directly in the projects appears to be marginal. Also, the regional backward and forward linkages created by the investments at Hub are not very significant.

VI. Welfare Consequences of the Incentives

Regional development by fiscal incentives tends to create a trade-off between considerations of national efficiency and interregional equity, as highlighted by Deweese and Kotowitz (1980), Hewings (1978) and Sasaki (1978). In other words, there are welfare losses associated with the process of dispersal of industry into the backward areas of a country. These losses can be demonstrated with the help of Figure 1.

D_0 and D_1 are the investment demand schedules in the absence of fiscal incentives in the two areas. D'_0 represents the upward shift in the schedule for the backward area following the granting of the concessions. This leads to an amount of investment, I_D, being diverted to the area and an amount, I_G, being generated. $I_D + I_G$ is the total quantum of investment

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[8] Linkages have been estimated as follows: $S_i = (K_j/K) S_{ij}$, where S_i = share of Baluchistan, rest of Pakistan or foreign; K_j = capital outlay of project j, K = total capital investment in sample projects in Hub, and S_{ij} = share of project j in i in total raw material usage/marketing of output.

in the underdeveloped region. The deadweight loss created by this strategy is represented by the shaded area. It corresponds to the net present value of the capital and recurring cost disadvantage of all the projects located in the backward area in relation to the developed area plus the extent to which the net present value of the generated projects is negative in the developed area. The former is represented by the Area ABCFX and the latter by Area XEF.
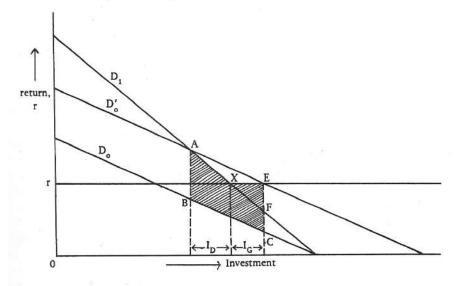

Figure 1

The relevant magnitudes can be computed as follows:

$$\text{ABCFX} = \sum_{j=1}^{n_1} \left(\sum_{i=0}^{t^*-1} \frac{KCA_{ij}}{(1+r)^i} + \sum_{i=t^*}^{T} \frac{RCA_{ij}}{(i+r)^i} \right) \quad \begin{array}{l} \text{for the } j=1, n_1 \\ \text{diverted projects} \end{array} \quad (17)$$

and

$$\text{XEF} = \sum_{j=1}^{n_2} V_{1j} \quad \begin{array}{l} \text{for the } j=1, n_2 \\ \text{generated projects} \end{array} \quad (18)$$

The magnitude of the effective transfer payment to investors in the backward area due to the fiscal incentives is ABCE in Figure 1.

ABCFX is estimated in net present value terms at Rs 382.9 million and XEF at Rs 7.7 million. The total magnitude of investment in the sample projects is Rs 1040.1 million. Therefore, for every rupee of investment in Hub the economy will have to incur an efficiency loss of as much as 37.5 paisas. This indicates that the policy of inducing regional development through fiscal concessions is likely to have serious welfare consequences.[9]

It may also be noted that the net present value of transfer payments in the form of duty exemption and tax holiday is even higher than ABCEX. The difference is represented by the area ÅXE in Figure 1. Altogether, it appears that the present value of transfer payments per rupee of investment in Hub is over 40 paisas.

VII. Policy Implications

The preceding analysis has demonstrated that the prevailing incentive scheme, applied across the board to all industries located in Hub, is likely to contribute to the development of an alien, capital intensive import-dependent industrial structure, lacking in sufficiently strong regional backward and forward linkages. Also, examination of the welfare implications of the fiscal concessions has indicated that this process of industrialisation, firstly, imposes high deadweight losses on the economy and, secondly, that the benefits of these concessions accrue primarily to entrepreneurs from developed areas in the form of transfer payments.

Therefore, there is need to alter the level and structure of incentives to reduce the degree of capital intensity and import dependence and to make the package of concessions more specific in character with a special focus on promoting industries with stronger regional backward or forward link-ages. As such an alternative three-tier differential fiscal incentive scheme is proposed as under:

Fiscal Incentive	Category of Industry
Type A: 50 per cent Exemption of Import Duty, plus 8 year Income Tax Holiday.	Industries using at least 60 per cent Raw Materials/Inputs produced, extracted or manufactured in Baluchistan; Industries of basic, heavy capital goods type.
Type B: 25 per cent Exemption of Import Duty, plus 5 year Income Tax Holiday.	Industries using at least 60 per cent Raw Materials/Inputs produced, extracted or manufactured in Pakistan.
Type C: No Exemption of Import Duty, 3 year Income Tax Holiday.	All other industries.

[9] This conclusion is based on the assumption of distributional neutrality between the developed and underdeveloped area.

The proposed incentive scheme has been applied to the 29 industrial units under analysis. Three units are identified as qualifying for Type A incentives, 15 units for Type B incentives and 11 units for Type C incentives. The net present value of each unit under the proposed incentive scheme has been calculated and compared with that under the present scheme. The results are shown below:

(Rs. in Million)

Unit Type	NPV Under Present Scheme	NPV Under Proposed Scheme	Ratio
A	88.05	96.41	1.095
B	164.08	116.37	0.709
C	273.10	70.51	0.258

It can be seen that as compared to the existing incentive scheme, the net benefit of the desired projects under the revised scheme remains, more or less, constant, while for the less desired projects it falls by one-third and for the least desired projects by three-fourths. Therefore, the modified scheme, as such, can emit a strong signal to the private sector as to the direction the industrial sector is intended to take in the light of national and regional development goals.

Finally, the industrialization process in Baluchistan is currently concentrated in Hub tehsil [10], on account of proximity to agglomeration economies in Karachi. However, in order to generate a wider regional development impact it is imperative that this process be spatially extended towards the interior of the province. In this respect, a graduated time-table needs to be drawn up for different parts of the province whereby the incentive scheme would only apply over time to districts of the province which remain underdeveloped. The operational implications of the scheme would be that Hub tehsil would be the first to face the withdrawal or restriction of incentives thereby inducing entrepreneurs to invest further away from Karachi, for example, in Uthal. In subsequent stages, the industrialization process can be pushed further inland, i.e., Bela, Khuzdar, etc., by creating appropriate regional differentiation in the level of fiscal incentives.

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[10] Tehsil is a sub-division of a district.

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