MEASUREMENT OF COST OF CAPITAL FOR FOREIGN DIRECT INVESTMENT IN PAKISTAN: A NEO-CLASSICAL APPROACH

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MEASUREMENT OF COST OF CAPITAL FOR FOREIGN DIRECT INVESTMENT IN PAKISTAN: A NEO-CLASSICAL APPROACH[1]

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ZAHIR SHAH AND QAZI MASOOD AHMED•

Abstract

This paper analyses the attractiveness of Foreign Direct Investment (FDI) in Pakistan with special emphasis on the cost of capital element in effecting the rate of return and the internal cash flow for investment of the investing firms. Using the Jorgenson's Neo-classical Investment Model the cost of capital is computed after considering the taxation policy and the treatment of invested capital. The paper elaborated fiscal provisions and their implications on the investment environment specifically available to foreign investors in Pakistan. The computed results show consistent and influencing impact of the cost of capital on FDI inflows. The objective of the study is to explore a realistic and in depth investigation of the tax concessions and the response of investors. The paper argues that fiscal incentives are more appropriate in attracting FDI as these have no direct drain over public resources and are increase the after tax return by availing the tax holidays and depreciation allowances.

1. Introduction

Capital can move inside and outside the boundaries of a country in search for highest financial returns and greatest security for their operation in the host regions. High return from investment is linked with the incentive mechanism offered by the host country in attracting FDI to fill the investment gap and diffusion of other skills.

To attract the foreign investors, the successive governments in Pakistan, offered various investment incentives in the form of tax concessions (tax expenditure) and direct expenditure on infrastructural provisions. The taxation policy of a Pakistan has great relevance for Transnational Corporation's (TNC) involvement in production activities. It is perceived to be a significantly influential factor in determining the inflow of foreign investment through the cost of capital and the resulting after tax return.

Stimulating foreign investment, mainly through the large TNCs, requires cost minimizing devices, which are reflected in fixed cost of a long-term investment project. The cost of fixed assets in such projects depends upon the rate of return, the price of capital goods and, most importantly, the tax treatment of generated income. Foreign investors are generally pursuing two sets of objectives that are related to their decision to invest. First, they prefer for locational advantages like market size, access to raw material and the availability of skilled labor. Secondly, they have their concern with the incentives offered by the host countries through their fiscal policies. These policies attract the investment considerations of the foreign investors. TNCs search the second set of objectives only if the first set is fulfilled.

This paper uses the Jorgenson's (1963, 1967) Neo-Classical Investment Model to explore the cost implications that are concerned with the importing capital and the return after being treated for fiscal provisions. Neo-classical investment model treats the relative price of capital as an important determinant of investment. The application of this theory has become the

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standard against which all of the remaining theories are measured. The concept of tax expenditure is being used widely in the budgets of every country as an alternative tool to provide financial assistance to an economic agent by reducing his tax liability in the form of tax exemptions, tax allowances, the tax credits and the tax relief's (Ahmed, 1997). The paper computes the cost of foreign capital for the period 1960-61 to 1999-00 and develops a framework that relates the effectiveness of this cost to FDI inflows in Pakistan.

The paper is organized in the following sequential order: Section 2 reviews the previous studies, Section 3 describes the methodological framework based on the Neo-Classical Investment Model, Section 4 reports the results for computed cost of capital and finally Section 5 consists of conclusion and the policy recommendations.

2. Review of previous studies

Jorgenson (1963, 1967) and Clark (1979) argued that investment should be a function of expected future interest rate, prices and taxes (Clark, 1979). It assumed that the desired stock of capital depends on planned output and the ratio of output price to the implicit rental price of the services of capital goods. This implies that investment decisions depend upon the cost of capital. Jorgenson's (1963) formulation asserts that capital is accumulated to provide capital services that are inputs to the productive process. The neo-classical theory suggests that firms adopt the criterion for optimal capital accumulation, under certain conditions, to maximize its net worth.

This model is used by various economists in analyzing the investment behaviors of the investing firms (Jorgenson & Siebert, 1968; Hufbauer, 1975; Guisinger & Kazi, 1978; Bond & Guisinger, 1985; Auerbach, 1990; Samuel, 1996; and Wong & Swain, 1997). Samuel (1996, 1998) found this model on top in ranking for time series analysis with and without lags while using panel data for US manufacturing firms for the period 1972-90. Ahmed (1997) found the cost of capital an influential factor in the context of Pakistan's private investment decision taking process while adopting the same computation.

Surrey (1973) used the term tax expenditure for fiscal provisions and defined that; "tax expenditures are public revenue losses which result from tax provisions which give special reliefs to various categories of tax payers. There are allowances and reliefs in the income tax system, which are not part of the structure required for the income tax itself, but which have been introduced for reasons of economic and social policy. Empirical studies have found a significant negative relationship between FDI and the cost of capital in both developed and developing countries (Root & Ahmed, 1979; Auerbach, 1990; Lucas, 1993; Rubio & Rivero, 1994; Wang & Swain, 1997; Khan, 1997; and Love & Hidalgo, 2000) and (Nishat & Anjum, 1998).

3. Methodological framework

The computation of cost of capital is carried out by using the Jorgenson's (1963, 1967) Neo-classical Investment Model that provides a coherent framework to find out the relationship between investment and the cost of capital. The model is further developed to incorporate the cost of capital facing the foreign investors in Pakistan.

3.1 The theoretical model

The complicated nature of investment behavior and the lagged response to changes in the demand for capital due to longer period and irreversible investment projects differentiate the simple opportunity cost from the cost of capital. The risk factor, the extent of markets to deal with risks, the institutional structure of the related agencies and the public policies are the major sources that complicate the issue. The cost of capital accounts for the observed rate of interest, the cost of assets, depreciation and taxation and is possibly defined as the user cost of capital or its shadow price (Jorgenson, 1963).

The Jorgenson's basic model is based on the Cobb-Douglas formulation and starts with the assumption of one variable input i.e. capital:

$$y = f(k) \text{ and } f' > 0, f'' < 0 \qquad \textbf{3.1.1}$$

Used by a producing firm with the price of capital goods q_t and output price p_t at time t. In this formulation, it is also assumed that the capital goods are depreciating exponentially and the firm's constant marginal cost of new capital goods makes the price p exogenous.

A Multinational firm's demand for capital stock is determined at a level that maximizes its net worth w. Net worth is the integral of discounted net revenues, given all prices p and interest rate r as constant. Net revenues are defined as total present revenue $(p_t Q_t)$ less all expenditures including taxes. If current revenue at time t is $R_{(t)}$, direct taxes $D_{(t)}$ and the rate of interest r, then net worth is maximized at:

$$W = \int_0^\infty e^{-rt}\left[R(t) - D(t)\right]dt \qquad \textbf{3.1.2}$$

The objective of the investing firm is to maximize w at the production level and combination of inputs both at home and host countries keeping in view the direct taxation, prices, depreciation (chargeable against income for tax purposes) and the rate of interest.

In the presence of exponentially depreciating capital services d, one unit of capital with lifetime t may be treated as e^{dt} unit new capital. Hence the capital stock k at time t is given by;

$$K_t = \int_0^\infty e^{-d(t-s)} I_s ds \qquad \textbf{3.1.3}$$

Where I_s is the investment at date s and, $s \le t$

The differentiation of (3.1.3) with respect to t gives transitional equation for capital stock;

$$\dot{k}_t = I_t - dk_t \qquad \textbf{3.1.4}$$

While investment at time t becomes;

$$I_t = \dot{k}_t + dk_t \qquad \textbf{3.1.5}$$

- $\dot{}$ represents the differentiated k,

The firm will maximize its profit R from investment through capital services which is defined as gross revenue pQ less the cost of current input sL (wages of labor), less the rental value of capital input qI.

Net revenue is:

$$R = pQ - sL - qI \qquad \textbf{3.1.6}$$

Equation (3.1.6) satisfies the objective of investing firm if it is maximized.

3.2 Tax policy and the cost of capital services

The rental can be calculated by the basic relationship between the price of new capital good $q_{(t)}$ and the discounted value of all the future services derived from this capital good. Without any direct taxation and any fiscal provisions, this relationship takes the following form;

$$q(t) = \int_t^{\infty} e^{-r(s-t)} C(S) e^{-d(s-t)} ds \qquad \textbf{3.2.1}$$

where q is the price of capital good at time t, r the rate of discount, $C,$ the cost of capital services, d the rate of replacement, s the time at which capital services are provided and $t,$ the time of acquisition of the capital goods. Without any intervention the rental cost can be obtained by differentiating (3.2.1), with respect to $t,$ the time of acquisition of capital goods. This gives us;

$$C = q(r+d) - \dot{q} \qquad \textbf{3.2.2}$$

where $\dot{q}$ is capital gain. This is the rental of capital services supplied by the firm to it self.

Under static expectations the rental (3.2.2) will reduce to;

$$C = q(r+d) \qquad \textbf{3.2.3}$$

Expression (3.2.3) may be extended to include proportional tax on business income, investment tax credit and depreciation deduction allowed from income for tax purposes.

The relationship between price of capital good and the discounted value of capital services become:

$$q_{(t)} = \int_t^{\infty} e^{-r(s-t)} [(1-u)\, C(s) e^{-d(s-t)} + u(1-k) q_{(t)} D(s)] ds + k q_{(t)} \qquad \textbf{3.2.4}$$

u = proportional tax rate

k = investment tax credit rate

$D(s)$ = depreciation formula (that may be deducted from income for tax purposes)

$u(1-k)q_{(t)}D(s)$ = Depreciation net of investment tax credit

$Kq_{(t)}$ = Investment tax credit

The present value of depreciation deduction Z on one unit of investment can be computed from the following formula;

$$Z = \int_0^{\infty} e^{-rs} D(s) ds \qquad \textbf{3.2.5}$$

Now differentiating (3.2.5) with respect to t and under the assumption of static expectations the rental value of capital services in the presence of taxation becomes:

$$C = q(r+d) \frac{(1-k)(1-uz)}{1-u} \qquad \textbf{3.2.6}$$

The value of z can be computed from the depreciation deduction formula given in (3.2.5), according to the legal provisions in the income tax ordinance of Pakistan. The procedure for computing present value z is the same as specified by Ahmed (1997). Under the straight line depreciation method, the present value of the depreciation deduction after applying limits and

taking $1/r$ as common, (3.2.5) becomes:

$$Z = \left[\frac{1}{-tr} e^{-rt} \right]_0^t \qquad \textbf{3.2.7}$$

where t is the life time of capital good for tax purposes. Expression (3.2.7) gives the value of depreciation deduction from the income against the tax liabilty.
The final expression obtained from the basic Jorgenson's equation for the cost of capital in Pakistan in terms of the price of capital good, the rate of interest, the depreciation deduction rate, the tax rate, the investment tax credit, the life of capital good for tax purposes and the period of tax holiday, as obtained by Ahmed (1997), is as under;

$$C = \frac{q(r+d)(1-uz)}{1-ue^{-(r+d)N}} \qquad \textbf{3.2.8}$$

where N is the period of tax holiday.
The final equation is obtained under the assumption of zero capital gains (Ahmed, 1997).

The discussion untill this point and the final expression for the cost of capital may be extented to include the rental cost of capital for foreign firms investing in other host countries. Hufbauer (1975), Horst (1977) and Bond & Guisinger (1985) argued that the tax laws in the home country must be taken into account as the parent firm may be liable for taxes on its foreign income. If the taxes due in the home country are less than the liability in the host country, the difference must be paid to the home country at the time when dividends are repatriated (Bond & Guisinger, 1985).

The effective tax rate for FDI in equation (3.2.6) and (3.2.8) will be replaced by;

$$m\hat{u} + (1-m)u$$

$\hat{u}$ = the home country tax rate
m = the share of income repatriated to the parent firm as didvidends
u = the host country tax rate
Here it is assumed that the parent firm ignores the future liability associated with retained earnings that are retained by the foreign subsidiary and are not transferred within the subsidiaries.

3.3 The present value of depreciation allowance

In order to compute the cost of capital, first we compute the present value of depreciation deduction as permissible by the Income Tax Ordinance. The Third schedule of this ordinance allowed depreciation on the following rates, which are equally provided to foreign investors.

1. Normal depreciation on the value of machinery and plant under Rule 2(IV) is 10% (for period 1960-61 to 1964-56 it was 8%).
2. Initial depreciation of the value of machinery and plant against tax liability, Rule 5(c) 25%.
3. The normal life of capital goods is 7.5 years for tax purposes.

Table 1 shows the present value of depreciation allowances under the above stated rules for the period of study i.e.1960-61 to 1999-00 (selected years) in respect of different policy options available for investment in Pakistan.

TABLE 1

PRESENT VALUE OF ACCELERATED DEPRECIATION ALLOWANCE UNDER DIFFERENT POLICY OPTIONS

(1) Observation	(2) WNR	(3) PVDH	(4) PVDN	(5) PVDD
1961	0.0573	0.3078	0.6700	0.5778
1966	0.0736	0.2228	0.6399	0.5603
1971	0.0822	0.2081	0.6184	0.5300
1976	0.0986	0.1829	0.5797	0.4969
1981	0.1202	0.1543	0.5333	0.4538
1986	0.1280	0.1452	0.5176	0.4268
1991	0.1365	0.1359	0.5012	0.4113
1996	0.1519	0.1204	0.4731	0.3893
2000	0.1424	0.1297	0.4902	0.3919

WNR = Nominal weighted average rate of interest charged against machinery
PVDN = Present value of depreciation allowance claimed in non-tax holiday zones
PVDH = Present value of depreciation allowance claimed in Tax holiday Regions (Tax holiday period is 5 years)
PVDD = Present value of depreciation allowance if these can be deferred in a tax holiday region (It is hypothetical as there is no such clause available in the income tax ordinance of Pakistan).

Column 4 of Table 1 presents the present value of depreciation allowance under straight-line depreciation method in developed areas, where tax holiday provision is not allowed. Column 3 shows the present value of depreciation allowance in a tax holiday zone where only normal depreciation can be claimed after the expiry of tax holiday period (the life of machinery is 10 years if initial depreciation is not claimed). The last column presents the hypothetical present value if depreciation allowance can be deferred in a tax holiday zone. From the table it can be concluded that the present value of depreciation allowances varies against the rate of interest in all the cases. It is also evident that the PV in tax holiday region is smaller from other areas while it is greater in the non-tax holiday area.

4. Computation of The Cost of Capital

Computation of the cost of foreign capital is based on tax liabilities and concessions under the legal framework. To facilitate this computation we ignore those provisions that have no published data or where it is inappropriate for estimation purposes. As the Income Tax Ordinance of Pakistan exempted capital gain and the face value of bonus shares from the income tax, (clause 116 and 108 of the Second Schedule respectively) we ignore them. Due to the non-availability of any source of the losses from carry forward provision for five years, this component is also dropped from the computation. In computing the cost of foreign capital the following components are being considered.

Corporate income is taxed by three different rates in Pakistan. Highest rate is applied to banking companies, second to private companies and lowest to public companies. These rates are ranging between 65%, 60% and 55% to 50%, 35% and 33% respectively during the period of analysis (1960-61 to1999-00). This gradual reduction in corporate tax rates was aimed to reduce the cost of capital and to reduce the tax evasions. The major share of FDI is in those companies that are declared as Pakistani joint stock companies where the foreigners hold the majority shares (more than 10% of the paid-up capital).

The second source of FDI inflows is those foreign associations that are declared companies by the CBR. These foreign associations are taxed at the rate applicable to private companies, and for most of the time it remained 55%. These rates are obtained from the Taxation Structure of Pakistan, an official publication of the Ministry Of Finance, and from Taxman for the years 1992 and onwards.

The second component is the rate of interest and we have chosen the weighted average rate on advances for machinery. The nominal rate is adjusted for inflation by correcting it and is transformed in real interest rate. This real rate is used for computation of the cost of capital.

The third component is the rate of depreciation allowed for income tax purposes. The general rate was 0.08 during the first five years of study and thereafter remained 10% for machinery.

The Present value of depreciation allowance is computed in the previous section under the prevailing rules for this computation. Here we used nominal interest rate to compute z, (the present value of depreciation deduction) in Table 1.

The last component is the price index of capital goods. As there is no proper indexation of these goods, the data is not available from any published source and therefore we have used the unit value index of import to transform in real price of capital equipments imported by foreign investors, taking 1980-81 prices as the base year. In the regression analysis (Shah, 2002) we used per unit cost of invested capital, as was also adopted by Ahmed (1997) and found it more appropriate in the absence of proper indexation. The results of the cost of capital computation are presented in Table 2 below for four different areas of provisions for specified years.

TABLE 2

COMPUTATION OF THE COST OF FOREIGN CAPITAL

(Under various policy options)

(1) Observation	(2) CCDC	(3) CCWC	(4) CCHN	(5) CCHD
1961	0.1262	0.1998	0.1150	0.0945
1966	0.2686	0.4144	0.2089	0.1647
1971	0.1773	0.2687	0.1531	0.1225
1976	0.1706	0.2504	0.1476	0.1192
1981	0.1374	0.1944	0.1242	0.1018
1986	0.2890	0.4040	0.2149	0.1787
1991	0.1838	0.2485	0.1554	0.1314
1996	0.1969	0.2472	0.1697	0.1490
2000	0.2865	0.3458	0.2421	0.2189

CCWC = Cost of capital without any concessions
CCDC = Cost of capital under the option of claiming initial and normal depreciation allowances.
CCHN=Cost of capital in a tax holiday region with normal depreciation allowance in the post tax holiday period.
CCHD = Cost of capital in a tax holiday zone depreciation allowances can be deferred (hypothetical).

Table 2 gives the computed cost of capital under various incentive schemes being offered in different zones in the country. From the table we can observe the following conclusions:

1. Per unit cost of capital is the highest in the case of non-availability of any concession (column 3) and is lowest if there would have been clause of deferral (column 5).
2. As the rate of interest increases per unit cost also increases and resulting in a positive relationship between interest rate and the cost of capital.
3. An increase in corporate tax rate increases the cost of capital. It is more effective in case of cost of capital without any concessions (column 3).
4. Column 5 presents a hypothetical case, as the Income Tax Ordinance of Pakistan has no clause of deferral.

The higher inflation rate during the fiscal year 1973-74 and 1974-75 resulted in extremely lower per unit cost (even negative). Complete results for the whole period of study of the computed unit cost of capital are presented in Appendix B. These findings are consistent with that of Ahmed (1997) while he computed the cost of capital for private investment in the manufacturing sector of Pakistan for the period 1977-94.

5. Conclusion and Policy Implications

This paper analysis the FDI regime in Pakistan with special reference to the effects of fiscal provisions in the form of reducing production cost via cost of capital in Pakistan. To achieve the goal we incorporate the well-known Jorgenson's investment model for its application to compute the cost of capital for foreign firms in Pakistan. In order to reach this computation, present values of the depreciation deductions are computed and then the components of cost of capital are explained. These per unit values are computed for different policy provisions prevailing in different zones of the country.

The cost of capital has strong implications for investment firms and public institutions as it can be influenced by the fiscal incentives and public actions. Per unit cost of capital is computed by using the Jorgenson's (1963) model and reflects a strong considerations for its effectiveness as regard to inward FDI flows. It is preferred over discount rate and long-term bond yields as it reflects the real price paid for one unit of invested capital. The computed results prove the validity of our hypothesis.

After considering the real economic fundamentals that are related to FDI regime and the investigated determining forces provide us an opportunity to formulate some specific policy implications. This formulation might be a valuable consideration for the policy makers and researchers. Some of the implications emerged from this study are described as under.

First, the emergence of globalization and a consistently growing environment for international competition in resource utilization needed required elements of acceptance. Changing perceptions, attitudes and competitive outlook does change the restrictive and protectionist policy stance in favor of liberalized and outward looking policies. Secondly, the resource gap, declining official inflows and technological advancement can only be achieved by reducing public burden and by the encouragement of private business activities in the country. FDI is a potential source of filling this multidimensional gap.

Third empirically significant co-efficient of the cost of capital in most of the studies suggests an effective role of the government in promoting investment in the country. There is further need of the effective and encouraging policies from the public sector to restore the confidence of the investors.

Lastly the strength of the market, reduced costs related risks and sustainable public contracts are the pre-requisites to consistently encourage FDI. TNCs have concerns of greater profitability, lowering costs and widening of their monopolistic powers. The host country particularly a developing economy has concerns of spillovers on the domestic economy, a minimization of any socio-economic losses and maximization of other positive gains that are related to inward FDI.

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APPENDIX A

Investment Incentives as Policy Option

Pakistan, with limited capacity for providing financial support, uses the option of fiscal incentives to channelize domestic and foreign investment for industrial development and rural-urban integration. Tax concessions are available for potential sectors and locations in the country without any discrimination among domestic and foreign investors. These incentives or tax expenditures are usually available to investors for the promotion of private investment activities in selected sectors/regions and in the following forms.

- Tax holidays
- Reduced corporate income tax rates
- Accelerated depreciation allowances on industrial machinery and other capital equipments
- Investment allowances
- Loss carry-forward for income tax purposes
- Tax credit for exported products

- Exemption of capital goods, equipments and raw material from import duties and other surcharges
- Exemption of interest on foreign loans
- Allowances for job training expenses
- Reduction in taxes on dividends (15% for foreign firms)
- Tax credit for value addition
- Reduction in social security contribution
- Tax credit for foreign hard currency
- Relief from double taxation in case of those countries with which Pakistan has agreements of avoidance of double taxation.

The aim of the governmental policies has remained multidisciplinary with respect to attracting foreign investment at every stage. The emphasis on promoting inward FDI and the fiscal measures undertaken in this regard are subject to the most desirable gains attributed to these investments. These include:

- Transference of managerial skills and advance technology to accelerate the pace of industrialization.
- Rural-urban integration by widening the process of development.
- Sectoral specific incentives to boost those sectors that are strategically crucial in nature.
- To get spillover effects from the R & D and innovation of the TNCs for competitive domestic industry.
- Promotion-oriented incentives that enhance export orientation, employment generation, skill development and domestic value added activities.

A public policy framework that incorporates these objectives in formulating fiscal incentives could be viable in the process of globalization. It requires an in-depth consideration and optimal policy reform mechanism to dispose off the public obligations. An effective tax expenditure policy should be accompanied with four major steps, which involves financial as well as administrative costs. These steps are:

- Designing policy framework for tax expenditure
- Granting fiscal incentives
- Implementation of the policy
- Follow-up of compliance by enterprises.

The formulation and execution of these steps needs institutional vigilance for the time lag response by the firms. Specification of sectors and industries for availing benefits from incentives and a transparent and justifiable legal framework is a useful indicator for positive response from investing institutions. In this respect coordination among executing agencies and the discretionary powers of the officials granting incentives have superfluous effects on the decision to invest.

Investment projects are normally long-lived and irreversible, therefore opportunity cost of such investments does not suffice to evaluate the real cost of these undertakings. Foreign investors are more concerned with the higher rate of after tax return and the net worth of the invested capital. Taxation measures directly affect the cost of capital and hence affect the

incentive to invest in specific projects. The environment facing the foreign firms in different host countries is different which may well follow that their objectives will not be identical.

In order to get maximum gain from incentives the whole national economy is divided into four fields of option for investors to select any of these.

1. Incentives related to rural industrialization.
2. Concessions for industrial estates.
3. Industry specific incentives.
4. Incentives for undertakings in Export Processing Zones.

These are briefly explained to analyze the important policy measures undertaken by the government in accelerating private investment.

a. Rural Industrialization

The successive governments in Pakistan have attached greater emphasis on the rural areas to bring them at par with the developed regions. To achieve specific objectives in this regard, the government offered attractive incentive packages to local and foreign investors to establish industrial units in rural areas. The major relief measures are stated below.

1. Complete exemption of imported machinery from custom duty, sales tax and import surcharge, if such machinery is not locally manufactured. Import license fee is also being reduced from 6% to 2% for these undertakings.
2. Public institutions will acquire necessary technology from abroad for transferring it to rural enterprises along with technical assistance and marketing expertise.
3. Debt-equity ratio for imported machinery in a project has been fixed to 70:30 while for local machinery it is 80:20.
4. Availability of tax holiday for maximum of eight years on average.
5. Private power plants are exempted from corporate taxes, import duties and sales tax in all these areas.
6. Beside, encouraging power generation by rural entrepreneurs the excess electricity will be purchased by WAPDA.

b. Concessions For Industrial Estates

Nearly sixty industrial estates have been established in various parts of the country, after she came into being. These estates are operating with maximum possible infrastructural facilities and concessions approved by the government. Special incentives related to these estates are mentioned below.

1. Hundred percent exemption from custom duty for approved industrial estates located in Hub, Mianwali, Bhakkar, Khushab, Tharparker and Dadu (excluding Taluka of Kotri).
2. 50% exemption from leviable custom duty for estates located in Islamabad, Rawalpindi, Gujranwala, Sialkot, Faisalabad, Lahore, Multan, Ferozwala, Taluka of Kotri and Hyderabad.
3. 75% of the leviable custom duties are exempted for approved industrial estates located in all other areas except Karachi.
4. All of the industrial estates enjoying the scheme of income tax rebates on export earnings and on value added items. The rebate on such export earnings has increased from 25% in 1960-61 to 50% in 1976-77, 55% in1979-80 and 75% in 1990-91.

c. Industry Specific Incentives

In addition to the incentives available in the above-mentioned cases the government has also advanced the following industry specific incentives in Pakistan to accelerate investment in these specified industries.

1. Plant and machinery not manufactured in Pakistan and imported for establishment of key industries like biotechnology, electronics, fertilizers, fiber optic and solar energy are completely exempted from the whole of custom duty and sales tax there on.
2. These industries are also availing four years tax holidays through- out Pakistan.
3. Raw material and components used in the manufacturing of capital goods and machinery for initial installation, Balancing Modernization or Replacement (BMR) are exempted from the whole of custom duties thereon.

d. Incentives For Export Processing Zones

An Export Processing Zone has been set up in 1980 at Karachi, under EPZA Ordinance, on 500 acres area to attract foreign investment in export-oriented industries. The concessions and other facilities offered by the Government of Pakistan for EPZs include:

1. Duty free import and export of goods in and from the zone.
2. Special income tax exemptions up to 75% of the normal corporate tax rate after the expiry of tax holiday period.
3. Five years tax holiday for all undertakings.
4. Availability of infrastructural facilities like, water, gas, telecommunication etc, in the zone.
5. Removal of the restriction on imports from the zone into tariff area.
6. Pakistanis working abroad are equally eligible for investment in the zone while resident Pakistanis can invest up to the limit of 40% of the total investment.
7. Warehousing facilities for goods that are in transit.

The establishment of two more such zones, at Sialkot and Risalpur are at the final stage of completion. The government has also approved in principle to establish more EPZs in other parts of the country. These lucrative policy options are clearly indicating the will of the planning machinery that the investors should benefit from the available opportunities.

APPENDIX B

COMPUTATION OF THE COST OF CAPITAL
(Under various policy options)

(1) Observation	(2) CCDC	(3) CCWC	(4) CCHN	(5) CCHD
1961	0.1262	0.1998	0.1150	0.0945
1962	0.1973	0.3109	0.1604	0.1320
1963	0.2243	0.3516	0.1762	0.1453
1964	0.1540	0.2404	0.1334	0.1101
1965	0.1238	0.1884	0.1129	0.0940
1966	0.2686	0.4144	0.2089	0.1647
1967	0.0995	0.1520	0.0990	0.0783
1968	0.2435	0.3709	0.1937	0.1534
1969	0.2272	0.3438	0.1837	0.1458
1970	0.2387	0.3611	0.1905	0.1523
1971	0.1773	0.2687	0.1531	0.1225
1972	0.1731	0.2293	0.1581	0.1363

1973	0.0289	0.0369	0.0323	0.0284
1974	-0.2061	-0.3076	1.2507	1.0091
1975	-0.0535	-0.0782	-0.0922	-0.0746
1976	0.1706	0.2504	0.1476	0.1192
1977	0.1440	0.2084	0.1295	0.1050
1978	0.2356	0.3364	0.1859	0.1506
1979	0.2032	0.2689	0.1748	0.1487
1980	0.1671	0.2213	0.1495	0.1279
1981	0.1374	0.1944	0.1242	0.1018
1982	0.2264	0.3213	0.1802	0.1485
1983	0.2590	0.3673	0.1990	0.1647
1984	0.1924	0.2713	0.1596	0.1322
1985	0.2671	0.3771	0.2033	0.1684
1986	0.2890	0.4040	0.2149	0.1787
1987	0.2795	0.3918	0.2098	0.1743
1988	0.2069	0.2884	0.1678	0.1395
1989	0.2246	0.3102	0.1778	0.1482
1990	0.2528	0.3518	0.1944	0.1619
1991	0.1838	0.2485	0.1554	0.1314
1992	0.2370	0.3228	0.1857	0.1559
1993	0.2453	0.3224	0.1963	0.1682
1994	0.1099	0.1422	0.1051	0.0912
1995	0.1187	0.1500	0.1124	0.0984
1996	0.1969	0.2472	0.1697	0.1490
1997	0.1454	0.1802	0.1345	0.1198
1998	0.2583	0.3088	0.2191	0.1975
1999	0.2509	0.3014	0.2142	0.1928
2000	0.2865	0.3458	0.2421	0.2189

CCWC = Cost of capital without any concessions
CCDC = Cost of capital under the option of claiming initial and normal depreciation allowances.
CCHN = Cost of capital in a tax holiday region with normal depreciation allowance in the post tax holiday period.
CCHD = Cost of capital in a tax holiday zone depreciation allowances can be deferred (hypothetical).