



Social Costs Benefits Analysis of Special Economic Zones: Scanning the Dynamics of an Alternative Model

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Abstract

Social Costs Benefits Analysis is a technique which can be used to find the real value of the Special Economic Zones. Under Warr Peter G enclave model had been not included environment cost, land acquisition cost and government revenue lost due to incentives given for the promotion and development of Special Economic Zones in the country. Earning foreign exchange is one of the main objectives for setting up Special Economic Zones in the country, but under existing model foreign exchange earnings are not included as social benefits for the performance evaluation of Special Economic Zones. Hence the researcher made an adaptive model for determine the real value of Special Economic Zones in the country. As per the adaptive model researcher included foreign exchange earnings, wage receipts, rent receipts, price paid for locally purchased inputs and public utilities, the tax receipts and tax payments, net profit accruing to local shareholders, the infrastructure cost of the zones and operational cost, expenditure incurred for acquisition of land and the environment cost.

Keywords: Special Economic Zones, Social Costs, Social Benefits Analysis, Shadow price approach, Warr Peter G Enclave Model

Introduction

Free Trade Zones, Export Processing Zones, Export Processing Factories and Special Economic Zones are similar concepts with different determined by policy treatments and objectives (Madani 1999). According to Rob Jenkins (2007) "A Special Economic Zone is a geographical region within a nation – State, in which a distinct legal framework provides for more liberal economic policies and governance arrangements than that prevail in the country at large, the intent being to stimulate investment, trade and employment". The objectives for setting up Zones vary from one country to another. The main objectives behind setting up Special Economic Zones in India are for the creation of employment opportunities, mobilization of investments, promoting export and development of infrastructure facilities. For achieving those objectives Special Economic Zones in India are receiving various benefits like, an attractive fiscal package, the minimum possible regulations, single window scheme for clearance within the zone, encouraging public- private partnership to develop world- class infrastructure, providing an internationally competitive and hassle –free environment. So both the state and central government incurring revenue losses due to the above mentioned incentives provided for the development and promotion of Special Economic Zones in the country.

According to former Prime Minister V P Singh (2006) "Special Economic Zone is an instrument would act as a trigger for massive social unrest, it could cause revenue losses, inadequate compensation to the farmers and it may lead to exclusive growth to a particular group of society". The main issues from the Special Economic Zones in India are compulsory acquisition of land, Government revenue losses due to countless tax concessions, exploitation of workers in the Zones, heavy consumption of water, electricity and other utility and regional economic imbalance due to the location of the Zones.

Review of Earlier Studies

According to Prest A.R and Turvey R (1965) Social Cost Benefit Analysis is a more useful technique in public utility due to the fact that the value of the products and services are measured in a real price. Shadow price approach is used to adjust the market price for determining the corrected price of the products and services. So shadow pricing technique in Social Cost Benefit Analysis is likely to get acceptable result for welfare measurements (Sen 1970). Shadow price form the center place in any project appraisal method, United Nations Industrial Development Organization (UNIDO) (1972) and IMD Little and J A Mirrlees (1974) are the two popular analytical approaches that are used in the field of Social Project Appraisal in developing countries. Little and Mirrlees Method is superior to the UNIDO method which is powerful enough to influence policy decision (Shamima Sahibzada and Mir Annice Mahmood 1986). And Wu Wai Man (1990) adopted (modified version of the Model framed by Little and J A Mirrlees in 1974) for converting market value of foreign exchange earning into real value. The formula for calculation of Standard Conversion Factor is mentioned below.

$$\frac{\sum_i M_i + \sum_j X_j}{\sum_i (M_i + T_m) + \sum_j (X_j - T_x)}$$

Harris, J. R and M. P. Todaro (1970) pointed out that the Shadow Wage Rate of the workers may differ from the Market Wage rate because of the social cost of the displacing workers from one economic activity to another and the price distortions prevail in the markets. Hence there is a need to determine the Shadow Wage Rate or Real Wage of the

workers for evaluation of the project in developing countries. The formula is suggested by Little and Mirrlees for determining the Shadow Wage Rate. is mentioned below.

$$m + (c-m) - (1/s) (c - m)$$

The Social Cost Benefits component of the Export Processing Zones include profit or loss of the firms located in Special Economic Zones; foreign exchange earnings, wage receipt's, value of technology transferred, electricity usage; tax revenues generated by the Governments and administrative and capital costs incurred. While considering those variables Warr Peter G framed an enclave model for determining the Social Cost or Benefit of the project. As per his model, the net result can be arrived at by using the following formula.

$$\text{Net Result} = (\text{MWR-SWR}) L + (\text{LP-MS}) Q + \text{TAX} + \text{NP-CAP-ADM}$$

From the forging review of earlier studies it is clear that the studies had been conducted for framing a model to found Social Costs or Benefits generated from the project after adopting Shadow Pricing Technique. However recently there are no studies carried out for framing a model which can be determining the Social Costs or Benefits of Special Economic Zones in India or abroad. More over recently Special Economic Zones have been a widely discussed topic due to various socio- economic issues. While considering this the researcher had made an attempt to frame an adaptive model on the basis of enclave Model framed by Warr Peter G for determining Social Costs or Benefits of Special Economic Zones in the country.

Methodology of the Study

The present study is theoretical in nature conducted on the basis of the earlier literature made in India and abroad. For conducting the study researcher used secondary data collected from the research article, books, working papers and other documents.

The main objective of the study is to frame an adaptive model for determining Social Costs or Benefits generated from the functioning of Special Economic Zones. Before framing a model researcher had made the review of earlier studies, which is the subsidiary objectives of the study.

An adaptive Model

The difference between social costs incurred and benefits generated are considering for accepting or rejecting the project. Both the benefits and costs incurred due to functioning of Special Economic Zones differing from one nation to another due to the settlement objectives of the Zones. Warr Peter G framed an enclave model for evaluating the performance of Special Economic Zones after considering the social benefits and costs. As per model social benefits are net wages generated from Special Economic Zones, concessional rates of public utilities and locally purchased inputs, tax revenue to the Governments, and net profit accruing to local equity shareholders are social benefits. The cost incurred for the development of infrastructure facility for the establishment of Special Economic Zones and the administrative expenditures are the social costs.

The enclave model had excluded environment cost for assessing the performance of Special Economic Zones by adopting Social Costs Benefits Analysis. Similarly for the promotion and development of Special Economic Zones the countries are offering various tax incentives and concessions resulted Government forgone their revenues. But while evaluating the performance of Special Economic Zones the enclave Model state that tax receipts is one of the social benefits. So the main limitation of the Warr Peter G enclave model is the scope of the variables is restricted for determining the net result. The time value of benefits and costs had ignored is the another limitations of the Model.

The result of developing and promoting of Special Economic Zones in the country are incurring various social costs like the domestic price of locally purchased inputs and public utilities, tax payments, infrastructure cost of the zones, operational cost, expenditure incurred for acquisition of land and environment cost. Social benefits generating from the operation of Special Economic Zones are foreign exchange earnings, profit generated, wage received and rent collected. So assessing net result generated from the functioning of Special Economic Zones in the country with following adaptive model is framed by the researcher.

$$\text{Net Result} = \text{RFE} + (\text{MWR-SWR}) L + \text{R} + (\text{LP-MS}) Q + (\text{TR-TP}) + \text{NP-CAP-ADM} - \text{LAC- EC}.$$

Here RFE represent real value of foreign exchange earnings, the market and the shadow wage rate are referred to as MWR and SWR respectively, R represent the rent receipts, the domestic price of locally purchased inputs and public utilities are referred to as LP and the opportunity cost of locally purchased inputs and public utility are referred to as MSC. L and Q refers to the number of workers and the units of domestic input respectively, the tax receipts and tax payments represents TR and TP respectively, net profit accruing to local shareholders as NP; CAP and ADM refers to the infrastructure cost of the zones and operational cost respectively, LAC refer the expenditure incurred for acquisition of land and EC represent the environment cost.

The subsequent paragraphs are explaining various procedures to find out the net result due to the functioning of Zones.

Components of Social Costs Benefits Analysis

1. Profits and Losses of the Units:

The determination of profits or losses generated from the units located in the Indian Zones is an important function to find out the net result. According to Kankesu Jayanthakumaran and John Weiss (1997) the Net profit of the Zones is equal to,

$$\text{NP} = \alpha (\text{EXP}_t - \text{IMP}_t - \text{LP}_t - \text{W}_t - \text{D}_t - \text{M}_t).$$

Here α is the proportion of the domestic shareholders profits earned from units in the Zone; EXP is the export sales, IMP is the import cost, LP is the domestic purchases, W is the wage cost, D is the annual capital charges based on a capital recovery factors at the current discount rate for local equity contributions and M is the managerial charges paid to foreign partners

2. Real Value of Foreign Exchange Earnings

Real value of Foreign Exchange Earnings can be determined by multiplying the Net Foreign Exchange Earnings with Standard Conversion Factor. Export Promotion Council for Exports Oriented Units and Special Economic Zones units, Ministry of Commerce and Industry, Government of India made a circular (No 42) dated on 26th March 2007. Point out that Foreign Exchange Earnings is equal to $A - B$. Here A is the sum of export value and the value of domestic sales as permissible in Rule 53(a) and B is the total value of imports and the value of procurement from 100% Export Oriented Units, Electronic Hardware and Technology Park, Software Technology Park, Bonded Ware Houses and the value of goods and services obtained from the domestic tariff where such supplies to the Special Economic Zones units were made in discharge of export obligation under any export promotion scheme as per the provisions of Foreign Trade Policy and such goods and services were supplied to the units of the Special Economic Zones under the claim of the Duty Entitlement Passbook Schemes or Drawback or any such benefits as may be notified by the Government of India in that matter.

Net Foreign Exchange Earnings is calculated by multiplying Foreign Exchange Earnings with the proportion of the domestic shareholders investments. And the Real Value of Foreign Exchange Earnings is calculated by multiplying the Net Foreign Exchange Earnings into Standard Conversion Factor. Wu Wai Man (1990) adopted **Standard Conversion Factor** after modifying the Little and Mirrlees model of exchange rate conversion which is as follows.

$$\frac{\sum_i M_i + \sum_j X_j}{\sum_i (M_i + T_m) + \sum_j (X_j - T_x)}$$

Here M is value of imports, X is value of exports, T_x is the exports duty and T_m is the imports duty

3. Wages Generated from SEZ

According to Rojidi Sawkut, Sannasee Vinesh and Fowdar Sooraj (2008), under Social Cost Benefit Analysis nation gains from the creation of employment opportunities only if the wages paid to workers in the units located in Special Economic Zones exceed their Shadow Wage. Shahrulh Rafi Khan (1974) used Little and Mirrlees Model for determining the Shadow Wage Rate in Pakistan. According to them, Shadow Wage Rate is equal to,

$$SWR = m + (c-m) - (1/s)(c - m)$$

Here when a worker is hired from the rural sector to the urban sector, the cost is the sum of the marginal product of the workers in rural sector (m) plus difference between annual urban consumption expenditure and marginal product of workers i.e. social cost of investment forgone due to increase in consumption (c-m). So the cost of transferring the labour from the rural area to the urban area is $m+(c-m)$. Net value of the worker is equal to total social cost minus the present value of the social consumption enjoyed by the transferred workers (c-m). The present value of consumption enjoyed by the transferred workers can be calculated by adjusting Social Discount Rate. The main reason for adjusting the Social Discount Rate is that the value of resources today are considered worth more than in the future date. The value is differing due to the people preference to consume now rather than later (Morup Christina 2012). According to Emma Kate Kunth and Symons (2008), "Social Discount Rate is the reflection of a society's relative valuation on today's well-being rather the well-being in the future."

The marginal productivity of workers in domestic price can be calculated by multiplying the average number of days worked by rural labour and their market wage. And for converting marginal productivity of workers in domestic price in to accounting value "m" by multiplying the marginal productivity of workers in domestic price with Standard Conversion Factor. The Annual Accounting Value of Urban Consumption Expenditures of the Workers can be determined by multiplying Annual Expenditures of workers with Standard Conversion Factor.

Kula Erhun (2004) formulated a Linear Equation Model for determining the Social Discount Rate. As per the model the Social Discount Rate $S = eg+m$. Here "g" is the growth rate of per capita real consumption; "e" is the elasticity of the marginal utility of consumption and "m" is a pure time discount rate.

4. Rental Receipts

The building was allotted to industrial units located in Special Economic Zones on rental basis. So rent received is another income for the Special Economic Zones.

5. Water and Electricity consumed:

Special Economic Zones units can avail concessional rate of water and electricity for manufacturing and allied service. The water and electricity offered at a concessional rate so the market price of water could be differing from the actually charged rates. Hence the difference between market price of product and opportunity price of products is the net expenditures incurred by the Special Economic Zones for consuming water and electricity.

6. Cost incurred for meeting Administrative and Infrastructure Expenditures

The Government has been incurring cost to meet administrative activities and developing infrastructure facilities in Special Economic Zones. For Social Cost Benefit Analysis it is required to know the amount of expenditures incurred for administration and for development of infrastructure facilities.

7. Land Acquisition Costs

The cost incurred by the developers for purchasing land from private party for the establishment and functioning of Special Economic Zones. Land acquisition costs is the sum of the price paid for purchasing land and the expenditures incurred for rehabilitation of project affected people. The Government of India passed, the Rehabilitation and Resettlement Bill in the year 2007, bill proposed the projected affected people has to get agriculture land, compensation

to loss of Cattle sheds, cost for meeting transportation expenditure, opportunities for creation of employment and skill development, allotment of shares of the units located in Special Economic Zone area, substance allowances, housing benefits and special assistance for the members belonging to SC/ST category.

8. Environment cost

The Contingent Valuation Method is widely used tool to find out the cost of environment. Key element in this method is properly designed questionnaire for determine the people maximum Willingness To Pay (WTP) or minimum Willingness To Accept (WTA). Out of these two WTP approach has become the most frequently applied (Cesare Dosi 2000). The Willingness To Pay is the maximum amount ready to give a consumer for protection of natural resources or the goods or services, they used for the business. The Willingness To Pay can be determined through employing questionnaire, conducting interview or focusing group discussion.

The above paragraphs had made detailed about various social benefits and costs due to the functioning of Special Economic Zones. Here social benefits generating by the Zones are profits of the units, real value of foreign exchange earnings, net wages generated, rent receipts and other receipts. Cost incurred for meeting administrative and infrastructure expenditures, government revenue losses due to the tax concessions, compensation for land acquisition, rehabilitation for project affected people and environmental cost are the various costs due to the operation of Special Economic Zones. The social benefits may higher than the costs or vice versa. If the social benefits is higher than social costs means that Special Economic Zones is performing well.

Net Present Value of Social Costs Benefits Analysis

After find out the net result of Social Costs Benefits Analysis researcher should assess the net present value arrived from the operation of Special Economic Zones. The net present value is determined by adjusting the social costs and benefits with discounting factors. The following formula can be used to find out the net present value of social costs and benefits of Special Economic Zones.

$$NPV = B \frac{1-(1+i)^n}{i} - C \frac{1-(1+i)^n}{i}$$

Where Net Present Value of the project is referred to as NPV, Social benefits generated from SEZs is B, Social Costs incurred due to the functioning of Special Economic Zones is C, the required rate of return per period is i and n is the expected life of the project.

Conclusion

Social Costs Benefits Analysis is a technique which can be used to find the real value of the public project. Special Economic Zones is one of the public projects, so the researcher used Social Costs Benefits Analysis for evaluating the performance of Special Economic Zones. Under Warr Peter G enclave had been not included environment cost, land acquisition cost and government revenue lost due to incentives given for the promotion and development of Special Economic Zones in the country. Earning foreign exchange is one of the main objectives for setting up Special Economic Zones in the country, but under existing model foreign exchange earnings are not included as social benefits for the performance evaluation of Special Economic Zones. Hence the researcher made an adaptive model for determine the real value of Special Economic Zones in the country. As per the adaptive model researcher included foreign exchange earnings, wage receipts, rent receipts, price paid for locally purchased inputs and public utilities, the tax receipts and tax payments, net profit accruing to local shareholders, the infrastructure cost of the zones and operational cost, expenditure incurred for acquisition of land and the environment cost. The social costs and benefits could be adjusted with discounting factors to find the present value.

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