Fiscal implications of special economic zones in India: a study of Noida SEZ

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Abstract: This paper analyses the fiscal implications of Noida Special Economic Zones (NSEZ) on government budget. The analysis is based on the aggregated data collected form NSEZ and taking 2009–2010 to 2015–2016 as reference period. The study reveals that government incurred a lot of expenditure and costs for successful running of the zone and option to earn revenue is foregone because payment of various taxes and duties is not applicable to SEZs. This, in turn has affected both revenue and expenditure of the government budget and it raises the questions about actual contributions of such enclaves to national fiscal health and supports the arguments of opponents regarding discontinuation of scheme. It is suggested that government should lessen these effects either by withdrawing fiscal incentives fully or partially or through exploring some constructive ways.

Keywords: budget; fiscal; special economic zones; net present value; NPV; benefit cost ratio; BCR; India.

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1 Introduction

In 1960s, special economic zones (SEZs) have emerged as a tool for trade promotion. Countries over the world have established SEZs in order to realise the various fundamental objectives although their objectives have had more or less significance for different countries depending on their economic conditions.[1] Despite a variation in specific objectives, countries promote these enclaves with a hope to stimulate economic growth either directly or indirectly through the zones' trickle down effects (Amirahmadi and Wu, 1995). With respect to claimed objectives, SEZs in different countries show mixed performances due to some intrinsic factors.[2] But marginally they have fulfilled the expectations of different host governments. In Asia, among all developing countries, the most interesting case was found in China which setup these enclaves to experiment with market systems and this experiment has transformed it into one of the largest FDI recipients, exporters, and foreign exchange reserve holders in the world. The SEZs success attributed to various attractive policy packages for foreign investors allowed by the Chinese government such as tax incentives, land use policy, private property right protection, liberal economic laws (Yeung et al., 2009; Wang, 2013). Therefore, such promising role of SEZs towards the attainment of growth oriented objectives, forced government of various countries to come on front and work rigorously for their promotion. Towards this end, various host governments started establishment of these zones with certain privilege and supports like liberalised rules and regulations, exemption from various taxes and duties along with extension of several subsidies. India is not an exception here government is encouraging these enclaves in a much bigger way. The development of these enclaves was taken place in 1960s in the form of export processing zone (EPZ) as the first EPZ in India was established at Kandla, Gujarat. However, EPZ scheme was converted in to SEZs due to various policy and procedural complexities. SEZ has been introduced in India with EXIM policy in 2000. In India, the SEZs have been allowed various concessions including reduction and withdrawal of trade tariff structure, uniform tax base, tax concessions, liberalising and simplifying rules and regulations, offering of grants and subsidies, etc. It seems that the different dimensions of these concessions are found to have possible effect on government budget. On costs side, government has incurred both capital and revenue expenditure on administration and maintenance of these zone by providing various facilities and subsidies. On the benefits side it earns additional revenue through collecting lease rent and water fees (WFs) from the units working in SEZs. Therefore SEZ has fiscal implications. Tantri (2015) also described that government plays a significant role of trade facilitator by sustenance of

SEZs. Therefore, the role and efforts envisaged for creation, administration and maintenance of these zones seem to affect the government budget. Thus, understanding the impact of trade policy reform measures on government budget is necessary. The issue of examining the impact of SEZs on government budget also becomes important in the context of benefits to economy; their benefits outweigh the cost as recommended by the benefit costs analysis of NSEZs which is carried out separately. Analysis concluded that benefits are more than costs and therefore, SEZs are beneficial proposition from the point of view of economy of the country. However, looking at the analysis indicates that the impact of SEZs on government budget has not been included in the said study on the ground that government is a component of whole economy and therefore benefits to the government is cancelled out in macro economic sense. However, a pertinent question arises that the revenue of the government is invariably mobilised from relatively better off sections of society whereas government expenditure benefits deprived sections of the society in general. It implies that the revenue expenditure of the government has distributional issues and loss of government revenue may have adverse impact on general welfare of the public. Similarly, various expenditures on SEZs have opportunity costs in the sense that the same amount could have been used for some other purposes. In this way, the issue of examining fiscal implication of SEZs on government budget is seems to be useful.

2 Literature review

In literature, no study except Tantri (2015), are found pertaining to quantification of fiscal implications of SEZs although they all explain it conceptually.[3] Tantri (2015) analysed the fiscal implication of seven government operated zones for the reference period 1990–1991 to 2007–2008 and she concluded that government sacrificed substantial revenue and incurred both capital and administrative cost which significantly affected its budget. Thus, a gap seems to arise here and to fill this gap in present study an attempt is made to develop an analytical framework which allows quantification of costs and benefits involved in promotion of Indian SEZs. Thus, we decided to investigate the matter in detail regarding the SBCA and fiscal implication of SEZs in India to develop an informed view on the matter and would also serve as guidelines for developing an effective SEZs Policy. The purpose of this paper is to confine SEZs impact on fiscal health of the government so that a comprehensive picture can be obtained that can be used for policy implications.

Keeping in line with aforesaid objective, a government operated zone namely NSEZ has been taken as a representative of all government operated Indian SEZs due to time and data constraints. The selection of NSEZs has been done due to several features associated with NSEZ such as in north India, NSEZ is a largest zone in terms of area, exports, employment, investment and number of operational firms. Thus, all the above grounds compel to take NSEZ as a sample.

3 Description of the Noida zone

NSEZ was set up by Government of India in 1986 at Noida (Uttar Pradesh) with a total area of 310 Hectares. It is managed by Government of India and its administration is

done by the government authority named as Noida Special Economic Zone Authority (NSEZA) headed by the development commissioner (DC). DC is responsible for effective administration of the zone and also exercises control on other states and private SEZs operating in different states of north India such as Haryana, Rajasthan, Uttar Pardesh, Chandigarh, Delhi, Punjab and Madhya Pradesh. Noida Special Economic Zone (NSEZ) has a composition of foreign as well as domestic firms which belongs to different industries like gems and jewellery, textiles, footwear and leather, engineering, IT/ITES, power/energy, light engineering, bio tech, handicrafts, etc. but the ratio of domestic firms is found to be more than foreign and among all industries IT/ITES firms dominates due to location of NSEZ.[4] Further, firms in NSEZ depending on their nature of business employ both skilled and unskilled labours but the ratio of skilled ones is found to be more due to dominance of IT/ITES firms. These workforce is required to work under same labour laws regarding the pension, provident fund, employee state insurance (ESI), minimum wages which are applicable outside. However, DC can request to state government from simplifying the rule and regulations related to labour laws. All firms in a zone have a facility to hire plots and standard design factory (SDFs) on lease as per their requirements. The lease period for plots is 15 years whereas SDFs are allotted for a period of five years.

Table 1 Incentives offered by the government to units in NSEZ

Incentives	*NSEZ units*
Income tax holiday	Units are eligible for income tax holidays for total 15 years in following manner
	a 100% for first five years
	b 50% for subsequent five years
	c 50% for creation of reserve in last five years
Central sales tax/VAT	CST exemption on all sales and purchase of goods
Service tax	Exemption from payment of service tax on all taxable services procured locally or from abroad.
Custom duty	Import and export of the goods exempt from the payment of general custom duty additional custom duties.
Excise duty	Units also enjoyed exemption from excise duty on all manufactured goods.
Other tax	In addition to this, the respective state governments have provided exemption from the payment of majority of state level.
	Taxes

Source: http://www.nsez.gov.in

In this connection, they also accessed the water supply facility inside the zone. The interesting thing with regard to rent and water facility is that firms enjoys subsidy on these. Rates which are charged inside are found much lower than prevailing rates outside. The logic behind this lies in efforts of government to attract firms towards the zone. The government fiscal support to firms is not come to end with this subsidised facility but beside it, firms also enjoys exemption from various taxes and duties like excise and custom duty, service tax, state sales tax, value added tax (VAT), land assessment tax, electricity duty tax, water pollution tax, work contract tax, stamp duty, registration fees, etc. Domestic firms are entitled to avail 100% income tax exemption from three years

and 50% for next two years whereas foreign employees are enjoying exemption from payment of income tax and tax on dividends. On non-fiscal side, simplified custom procedure, access to single window clearance system, liberalised labour legislation, facility of subcontracting and many others are found suitable means in the path of creation of favourable environment by government.

Hence, it seems that in a NSEZ, the working environment, laws, rules and incentive packages offered to firms are found to be favourable.

4 Data and methodological framework

4.1 Data source

This study is based on the aggregate data collected from NSEZ and data on various components of benefits and costs has been collected from the DC's office of NSEZ. The reference period is 2009–2010 to 2015–2016.[5] The data on costs include subsidy on lease rent and water usage charges, total capital expenditure incurred on construction of building and purchasing machinery over the years, revenue expenditure incurred on administration and maintenance of zone. On the benefits side, we have considered data only on revenue earned from lease rent and water usage charges because we could not collect the data on other sources of revenue collection to government. This is specifically found on account of various problems[6] and that are not specific to Indian SEZs but it is well acknowledged in other studies with reference to other countries as well.[7] Hence, given these constraints, our analysis is restricted to only a few years and components for examining the fiscal implication of NSEZ.

5 Analytical framework

The fiscal implication of SEZs as defined above could be categorised in two fold classification first, benefits, through revenue generation from various utilities and service charges that affect budget positively[8] and secondly, costs such as capital expenditure, administrative costs and grant of various subsidies to the firms that have negative impact on the fiscal health of the government though government also foregoes option of mobilising revenue by providing exemptions on various applicable taxes and duties to units. This loss can be also treated as a cost to government because it lessens the realised revenue. But the impact of this cost is not captured in the present study as the government not only incurring this cost in case of SEZ but also incurs it in absence of SEZs because outside firms also claim such privileges subject to certain terms and conditions. It seems that this cost is not particular to SEZs thus, any suitable basis for incorporating this in analysis has not found. Therefore, in context of fiscal implication of NSEZs, following components of costs and benefits have been identified.

a Component of costs
   - capital cost (Kc)
   - administrative cost (Ac)
   - subsidy on lease rent and WF (SR&W).

b Component of benefits
- rental income (RI)
- WF.

Based on the elements identified for costs and benefits described in annexure, we can express the relationship in the following algebraic form in the context of NSEZ.

Algebraic expression of the model

$$NCF = (KC + AC + SR\,\&\,W) - (RI + WF) \tag{1}$$

where

NCF net cash flow

Kc capital cost incurred by government

Ac administrative cost incurred by government

SR&W subsidy on rent and water

RI rental income

WF water fee.

Thus, selection of all variables of costs and benefits have been done in accordance with suitable feature of NSEZ and all value of these variables have been discounted at a rate of 10% for estimation of net present value (NPV) and benefit cost ratio (BCR). The policies and approaches adopted by various international bodies such as Asian Development Bank (ADB), World Bank and International Monetary Fund (IMF) suggest the choice of particular rate. They recommend a diverse range of discount rate in different countries due to change in its economic conditions. At global level, international bodies like ADB (2013) suggested a use of discount rate (normally 12%) for the project having quantifiable benefits. Further, literature on economic appraisal by ADB (2013) supports the use of lower discount rates usually (3%–7%) for developed countries like, the USA, the UK, Japan and higher discount rates (8%–15%) in case of developing countries like India, Bangladesh, Pakistan, and Sri Lanka. Further, various multilateral development banks (MDB) including ADB also recommend applying a uniform cut-off rate (10%–12%) to all development projects. Little and Mirless (1974) also advised the use of discount rate between the ranges of 10%–14% in case of developing countries.

Hence, based on the methodology, approaches and facts suggested by the various international bodies, a band of 10%–12% discount rate seems suitable for India that better reflects or satisfies its economic conditions. Out of this band, a lower side discount rate of 10% has been selected for the analysis.

6 Empirical results and discussion

Results of the present analysis are presented in Table 2 respectively. Firstly, the different components of benefits to government over the reference period are outlined and secondly, all the costs involved in promotion of SEZs also included as these have impact

on the expenditure side of the budget estimates. Further, to estimate the fiscal dimension of NSEZs, two parameters namely NPV and BC ratio is also computed. The value of both parameters depends on two factors: one, the total benefits, and, two, the value of total costs incurred by the government. The higher the total benefits and the lower the costs, higher the NPV and corresponding BC ratio. On the contrary, their value changes with decreasing total benefits and increasing total costs incurred by the government. Such low value questions the financial viability of NSEZs. Results presented in Table 2 reveals the total benefits of Rs.1.28 billion and total cost of Rs.2.8 billion in absolute amount. The excess of total costs over total benefits gives a NPV of Rs.1.07 billion and BC ratio below one. This ratio indicates that in order to earn each rupee of benefits, the government incurred a cost to the tune of Rs.2. However, this ratio is subject to change because computation carried out in the study can be considered as an underestimate of the actual benefits. Perhaps, the benefits may be higher and NPV may fetch lower value if one were to consider all other sources of revenue collection to both the central and state governments which were not considered in present study because of non-availability of data due to absence of any monitoring mechanisms. Nevertheless, current negative NPV and BC ratio below one reflects that operating and administration of NSEZs have negative impact on fiscal health of the government and nation as well. One possible reason of this negative NPV seems grant of massive subsidy to firms for attracting investment. This issue has been in news also for initiating calibrated reduction in subsidy gradually due to demand by opponents regarding discontinuation of this fiscal incentive. They said that zones would also be viable without misdirected subsidies, guarantees and others incentives only if they focused on providing superior infrastructure, business-friendly regulations and environment. Hence, with reference to significance of this issue on government budget, an attempt is also made on computation of scenario analysis on this component with expectation that it will serve a guidance tool to government and contribute in settling of debate.

Table 2 Results of the model (Rs. in million)

Years	*2009–2010*	*2010–2011*	*2011–2012*	*2012–2013*	*2013–2014*	*2014–2015*	*2015–2016*
Benefits (A)							
Rental income	184.92	179.56	180.65	177.20	176.60	180.94	189.61
Water fee	1.67	1.65	1.70	1.70	1.74	1.82	1.85
Total inflow							
Costs (B)							
KC by government							
DT on buildings	35.80	258.03	245.82	227.82	214.52	207.67	205.61
DT on machineries	17.90	129.02	122.91	113.91	107.26	103.83	102.81
Operating costs							
Wages	0.70	0.70	0.74	0.76	0.84	1.07	1.36

Notes: All data are in real terms using the GDP deflator.
PV = present value; DT = depreciation.
Figures in parentheses represent negative value.

Source: Author's calculation

Table 2 Results of the model (Rs. in million) (continued)

Years	*2009–2010*	*2010–2011*	*2011–2012*	*2012–2013*	*2013–2014*	*2014–2015*	*2015–2016*
Operating costs							
Professional fee	0.66	0.71	0.90	0.56	0.65	1.98	1.08
Advertisement and publicity	0.15	0.16	0.51	0.20	0.23	0.26	0.28
Operation and maintenance	14.82	20.01	13.26	17.35	22.66	36.96	31.26
Total subsidy							
Subsidy on rent	18.57	35.14	54.05	72.94	94.27	120.60	153.73
Subsidy on water	0.77	0.79	0.83	0.86	0.90	0.97	1.07
Total outflow							
Net cash flow (A–B)	97.21	(263.33)	(256.66)	(255.50)	(263.00)	(290.58)	(305.65)
NPV at 10% DR				(1079)			
PV of gross benefits				980			
PV of total cost				2,059			
BC ratio				0.58			

Notes: All data are in real terms using the GDP deflator.
PV = present value; DT = depreciation.
Figures in parentheses represent negative value.

Source: Author's calculation

7 Scenario analysis

An organised scenario analysis has been performed by assuming two cases on parameter, i.e., subsidy:

1 when there is no subsidy by the government or subsidy = 0

2 when subsidy is reduced by half by the government or subsidy = 50%.

Table 3 clearly indicates the direct influence of subsidy grant on estimated NPV and BC ratio under both the cases. Result shows that reduction in subsidy leads to reduction in fiscal loss to a large extent. Under case1, it is clearly observed that elimination of subsidy completely leads to improvement in NPV by 70% and BC ratio also comes near 1. Such complete withdrawal of subsidy reduces a burden on government budget by 0.76 billion through increasing its benefits (receipts) and decreasing costs (expenditures). Consequently, case 2 also gives the similar results with upgradation in NPV by 35% and

BC ratio is found to be 0.63. Hence, both cases of scenario analysis inferred that withdrawal of subsidy by the government either fully or partially affected the fiscal health of the government to a large extent through minimising the impact of costs on government exchequer. Subsequently, this puts a question mark on subsidy grant by the government and also supports the arguments of those SEZs opponents who demand cessation of this particular fiscal incentive. They opine that firms inside the zones are still able to earn huge profits without this assistance and demanding diversion of money to the government budget or society by incorporating the possible changes in policy and laws. Thus, within the context of present study, one possible way to minimise the fiscal loss seems to be reduction in subsidy either partially or fully but government needs to balance phasing out this deduction and should be done judiciously especially in growth oriented sectors like manufacturing industry, renewable energy, etc. Complete withdrawal may produce undesirable results as it acts as an influential incentive for small, medium and new manufacturing units to start business in zone. Consequently, this phase out of reduction may be difficult for regions such as north east due to their backwardness; many types of concession and exemption serve as stimulating factor for firms. But, this deduction in other developed areas and on large firms expectedly puts government in a better position. However, this possible option cannot be relied on so much as from the Table 3 an important thing that can be observed that even withdrawal of subsidy wholly or partially not tends to vanish the fiscal completely loss of the government as NPV remains negative in all cases. Thus, it puts a challenge for government to balance the goal of growth and development by meeting fiscal deficit.

Table 3 Results of scenario analysis (both cases)

Case no. / *Effect on*	*Original case*	*Case-1*	*Case-2*
	When subsidy = 100%	*When subsidy = 0*	*When subsidy = 50%*
Estimated NPV	(1,079)	(318)	(698)
Estimated BC ratio	0.48	0.81	0.63

Note: Figures in parentheses represent negative value.

Source: Author's calculation

8 Concluding remarks

This paper examines whether functioning of NSEZ is beneficial phenomena for the government or does it have any adverse impact on government budget. Further it also examines the impact of subsidy on this budget by assuming two cases, i.e., full and partial withdrawal of subsidy. The analysis so carried out reveals that the government has spent huge amount in its role as facilitator and incur huge revenue loss. Negative NPV indicates that functioning of NSEZ puts burden on government budget and also raises a challenge of meeting fiscal deficit with achievement of various growth oriented objectives for instance, rapid industrialisation, infrastructure development, investment and export promotion and employment generation. However, the figures reported in the present analysis could be an underestimation of the real magnitude because due to non-availability of data, on benefits side present study considers only the revenue earned through lease rent and water usage charges whereas impact of other sources could be not captured. Perhaps, the corresponding BC ratio and NPV may improve if one were to

consider all other sources of revenue to government. Although in weighing the benefits against costs of their administration, clear picture can be revealed by consideration of all sources of revenue generation. Nevertheless, in context of present study government requires minimising or ceasing monetary loss through making obligatory adjustment in rules and regulations and other sources of revenue generation may be discovered that would ensure the credibility of government. The present study is proved to be helping guide for government with respect to formulating incentive structure which could put a less burden on government budget. The scope of the study can be expanded to understand the fiscal implication of other government operated SEZs combinely to assisting government in promotion of such enclaves.

Moreover, the limitation of present study is that it is findings are restricted to NSEZ only because fiscal implications of other government operated zones have not been estimated. This requires further research in the area. The study is an attempt to add a new knowledge in existing literature by quantifying the benefits and costs to government.

To sum up, it is to be said that running of NSEZs is a costly phenomena for the government that demands restructuring of SEZs Policy that allows more collection of revenue and cessation of redundant exemptions in a phase manner.

Moreover, the limitation of the present study is that it findings are restricted to NSEZ only because fiscal implications of other government operated zones have not been estimated. This requires further research in this area The analysis indicates the reduction and elimination of subsidy in order to enhance their realised economic benefits. But this issue is intensely debated by the observer and a good number of them favour no subsidy regime in such cases.

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Notes

1 The goal behind development of SEZs varied over the countries depending on their stages of economic development. Developed countries which have already achieved higher stage of economic development, well integrated with global economy, having necessary infrastructures and efficient regulatory framework setup SEZs just to attract innovative and knowledge intensive activities whereas developing countries recognise SEZs as an important mechanism for trade and investment promotion, creation of infrastructure, employment generation, promotion of regional development, increase in foreign exchange earnings, improving export competitiveness and transfer of skills and technology which in turn are necessary for overall economic development of a country. Developing countries like Singapore, China, South Korea, Malaysia, India, Pakistan, Sri Lanka, Bangladesh, etc. embarked on the process of trade liberalisation through setting up of SEZs. See for further details, Rhee and Belot (1990), Zhu (1992), Amirahmadi and Wu (1995), Romero (1995), Johansson and Nilsson (1997), Madani (1999), Kundra (2001), Boyenge (2007) and Morrison (2015).

2 See for details Amirahmadi and Wu (1995), Madani (1999), Akinci and Crittle (2008), Yeung et al. (2009) and Morrison (2015).

3 Refer for details Balasubramaniam (2007), Lakshmanan (2009), Palit (2010) and Menon and Mitra (2009).

4 NSEZ is located at Noida which is near Gurgaon and Delhi and these locations considered important segments of national capital region (NCR). As a part of NCR, these hubs possess good infrastructure which is well suited for IT/ITES zones particularly in terms of availability of technically skilled workers (Palit, 2010).

5 This is to be noted that present analysis is restricted only to 2009–2010 to 2015–2016 not from the inception of NSEZ as previous data remains unpublished.

6 During the survey, it was found that factors like consolidation of books of accounts with parent company, misleading financial statements, non-ascertainment of volume of exports and imports precisely on account of inter-transfer of products from one unit to another made estimation of tax revenue foregone task difficult.

7 See for details Warr (1987a, 1987b, 1988, 1989) and Rojid et al. (2008).

8 Government revenue is restricted to only utilities charges charged from firms working inside the zone because as per the Government of India (2000) all these firms are exempted from payment of various types of taxes, duties such as excise, customs, stamp duty, patent fees, registration charges, VAT, sales tax, etc.

9 A straight line method (SLM) has been used to calculate per year capital consumption (depreciation) by considering 30 years as economic life of building whereas 15 years for buildings. The particular figures are adopted after discussion with NSEZA, executive of the firms inside the zone and public welfare department (PWD) of Noida.

Appendix

Technical notes on elements of costs and benefit

Capital cost (Kc)

Capital cost is basically expenditures incurred by the government annually on construction of buildings and purchasing of required machinery and equipments in different ratio. During the survey, the ratio between these two categories of expenditure is found 70 (buildings) and 30% (machinery). These expenditures are capital in nature their benefits are expected to realise over the years. Hence, during analysis entire expenditures are categorised accordingly and their per year capital consumption (depreciation) are considered rather than whole value. Per year capital consumption has been calculated by applying the following formula.[9]

$$D_T = INV_T / EL_{B\&M} \tag{2}$$

where

INV_T investment done in year t

$EL_{B\&M}$ economic life of the building and machineries.

Administration cost (Ac)

Government for successful running of zone spend a lot of funds on administration expenses such as expenses on building of roads, parks, residential accommodation, schools, recreational activities, public health care facilities. Beside these infrastructural expenses it also incurs payment of wages, advertisement and publicity expenses, etc. All these expenses are recurring in nature and represent a cost to government hence treated as a cost component in present analysis.

Subsidy on lease rent and water (SR&W)

In NSEZ, government offers subsidy to firms ranging from 20% to 30% on various lease rent and water facility. This subsidy entails a loss to government to the extent of subsidised amount hence it is considered component of cost. Hence, for the analysis estimation of subsidy is done in the following manner:

$$S_{R\&W} = Outside\ rental\ charges - Inside\ rental\ charges \tag{3}$$

RI and WF

Income received from firms through lease rent and water usage charges serve as a source of revenue to government to meet its expenditure though the subsidy on water and rent charges lessens this realised revenue to some percentage. But, in sum this revenue represents a cash inflow to government thus; constitute a component of benefits in analysis.