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Types of Tax Concessions for Promoting Investment in Free Economic and Trade Areas

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Abstract

Apart from countries in transition, a large number of developing (and developed) countries have also established free economic and trade areas (FETA) with the aim of attracting foreign capital by providing tax incentives, creating employment opportunities and promoting exports as well as regional development. Major theoretical justifications for the establishment of such economic zones generally maintain that there are economies of scale in the development of land and in the provision of common services and utilities as well as external economies of agglomeration by having similar industries grouped together. As mentioned above, one of the crucial characteristics of the FETA is the provision of generous tax investment promotion schemes solely allowed in this enclave. In general such measures include: (a) profit tax exemption, (b) free or accelerated depreciation, (c) investment tax allowance, (d) subsidy for investment costs, etc. The incentive effects of various tax concessions on firms' investment decisions can be compared on the basis of the net present value model. Without taxation, the net present value (NPV) is equal to the present value of future gross return, discounted at an appropriate interest rate less investment cost. An investment project is therefore considered to be profitable when the NPV is positive. After introducing the corporate income tax, the present value of the asset generated from an investment amounts to the sum of the present value of net return (gross return less taxes) and the tax savings led by an incentive depreciation provision, for example. In the study the theoretical approach is accompanied by a model simulation based on the selected parameters.

Introduction

The establishment of a free economic and trade area (FETA) seems to be one of the most significant institutional innovations which have widely spread throughout the world economic scene in past years. The FETA as a territorial enclave in which foreign firms (in many cases also in co-operation with indigenous companies) benefits from generous incentives and privileges and thereby producing industrial goods mainly for export, found popularity in developing countries, notably in the newly industrialised countries in Asia. The diffusion of this development concept as a growth-oriented policy instrument in developing countries is likely to continue in the near future. In recent years, however, this measure has also been adopted in the former centrally planned economies as an instrument of stimulating economic and structural transformation. The first application of this type of development measure began with the creation of special economic zones in China. Nowadays the FETA concept is increasingly gaining importance in other transformation countries in Europe including the former USSR, Poland, Hungary and Bulgaria as well as in Asian countries such as Vietnam and North Korea (United Nations Centre on Transnational Corporations, 1990 and 1991).

One of the crucial characteristics of the FETA is the provision of generous tax investment promotion schemes solely permitted in this enclave. In general, such measures include: (a) profit tax exemption, (b) free or accelerated depreciation, (c) investment tax allowance, (d) subsidy for investment costs, etc. In this study the incentive effects of various tax concessions on firms' investment decisions can be compared on the basis of the net present value model. Such a theoretical approach is accompanied by a model simulation based on selected parameters.

Without taxation, net present value (NPV) is equal to present value of future gross return, discounted at an appropriate interest rate less cost of investment. An investment project is therefore considered to be profitable when NPV is positive. After introducing corporate income tax, the present value of the asset generated from an investment amounts to the sum of present value of net return (gross return less taxes) and tax savings led by an incentive depreciation provision. If the investment is self-financed, the interest rate directly corresponds to the investor's opportunity cost. Under the assumption of a perfect competitive market structure, there is only one interest rate in the financial market.

In addition, anticipated effects of inflation on firms' investment decisions are examined in the context of corporate income taxation. The central issue is that the so-called historical cost accounting method, which is applied in practice when calculating the (corporate or income) tax base, causes fictitious profits in inflationary phases that are also subject to tax. This type of increased tax burden is generally referred to as inflation loss (Devereux, Griffith and Klemm, 2002; Gonedes, 1984; King and Fullerton, 1984;

Streißler, 1982; Feldstein, 1979; Kay, 1977). Therefore, in periods with inflation generous tax concession measures do not adequately promote private investment in the FETA as designed, but only (or partly) compensate the losses caused by inflation.

Free Economic and Trade Zones as an Instrument of Economic Growth and Transformation

Over the last two decades, many developing (as well as developed) countries have established free economic and trade zones with the aim of attracting foreign capital through the provision of tax incentives, promoting exports, creating employment opportunities and promoting regional development (Chen, 1993). Regarding the general effects of tax incentives (and other public policy measures such as easing of foreign currency regulations, decentralisation of development policy making, etc.) on firms' location in the FETA and other types of enterprise zones, Bartik (1991) and Ge (1995) argue that there are positive relationships between the presence of such incentives and increased economic activity. In this context the success of a zone is frequently measured by the amount of investment undertaken after the designation, the increase in the number of firms in the zone, and the change in zone employment (Papke, 1992). In many cases, the zone's achievements have also been measured in terms of exports, technology transfer and industrial modernisation, diversification of local economies, etc. (Tuppen, 1993; United Nations Centre on Transnational Corporations, 1990).

For example, in the context of the so-called open-door policy which has been promulagated since 1978, the central government of China granted the coastal regions (special economic zones — SEZs) more autonomy in foreign trade and allowed them to charge foreign-invested firms lower taxes than permissible in other regions. In this special economic zone, the corporate tax rate presently amounts to 15%. This compares to the 55% tax rate Chinese firms pay elsewhere in the country and the 33% levied on foreign-funded enterprises in the hinterland. Furthermore, (a) regions and provinces are authorised to set up various types of trading corporations for their own territories, (b) some selected enterprises can conduct foreign trade negotiations independently (without the control of the central government), (c) local governments at different levels and enterprises can retain part of their foreign currency earnings, and (d) some provinces such as Guangdong and Fujian were allowed to transfer a smaller share of tax revenue to the central government. Not surprisingly, these special economic zones have made major contributions to the remarkable growth of Chinese exports and national income. By attracting investments from abroad, SEZs have also provided access to business know-how in light industry and the service sector. To a certain extent, they have also had significant impact on the inflow

of modern high-technology (Wall, 1993). On the other hand, this type of growth-pole oriented policy has led to a serious spatial imbalance caused by the concentration of foreign direct investments in coastal regions and has consequently widened the east-west disparity in the economic growth of Chinese regions (Bishop, Formby and Zheng, 1996).

Besides, major theoretical justifications for the establishment of such economic zones generally include that "... there [are] economies of scale in the development of land and in the provision of common services and utilities [and] ... external economies of agglomeration by having similar industries grouped together. [Furthermore]... governments may wish to impose a geographical limit on the operation of some policies ... and... to restrict certain activities to specific areas" (Wall, 1993, p. 248). For the application of the latter justification in the transformation countries, it is additionally suggested that, with the enclave nature of the FETA, the process of gradually opening former command economies to the outside world can be controlled and modulated in a much more subtle and sophisticated way than through a rapid global liberalisation of the total national economy (United Nations Centre on Transnational Corporations, 1990).

According to the theory of agglomeration economies, economic growth and technology development — particularly at the regional level — is influenced and stimulated by the economies generated by spatial proximity and associated externalities (Glaeser et al., 1992; Mills and McDonald, 1992; Moulaert and Djellal, 1995). By being located near various numbers and types of firms in agglomerations or free trade and economic zones, an easy and speedy business access (with low transportation costs) to other service and industrial firms (suppliers, distributors etc.) or research institutions is guaranteed. Furthermore, in the case of expanding similar industrial branches in a given location, firms can realise economies of scale by using jointly supplied products (and raw materials) or by specialising in production. An additional benefit includes the savings resulting from intensive sharing of given major capital investment and infrastructure by a number of firms in a geographic enclave. Within an economic zone that has a concentration of rapidly growing (foreign and domestic) firms in an emerging dynamic industry and service sector, the recruitment of a specialised labour force is also convenient: modern industrial and service firms "that are growing quickly need to be able to recruit specialised, experienced and skilled professionals who can meet specific requirements" (Mills and McDonald, 1992, p. 42). Additionally, such a geographic proximity makes the inter-firm communication of new ideas, experiences and know-how among firms more efficient and innovative (the so-called Marshall-Arrow-Romer externality of knowledge spillovers between firms, Glaeser et al., 1992). Consequently, such advantages of agglomeration economies provided by a FETA can have a positive effect on a local economy and stimulate efficient production and generate productivity growth leading to higher per capita income than that in the rest of the country (Bartik, 1991).

In recent years the concept of FETA has evolved and has been diversified. The following facts illustrate this development. Instead of being further concentrated in a well-defined territorial area, investment and other types of incentives provided in FETAs (like tax concessions, easing of foreign currency regulations, etc.) were gradually extended — in the course of time — to other (local or foreign-owned) enterprises, operating elsewhere in the country (see cases in Hungary).

A number of export-processing zones additionally acquired import-processing functions (see the case of Manaus Free Zone in Brazil that now operates almost exclusively for the domestic market). Major factors which have made such trends towards import processing almost inevitably include:

- the technical difficulty of controlling smuggling (products and technologies) from the zone into other parts of the host country,
- the combined pressures of local consumers (who would like to have access to and can also afford the high-quality goods produced in the zone) and foreign investors (who are attracted by the potentially high profitability of sales in the local market, as is the case in China), and
- governments' policy to encourage local linkages in exchange for access to the local market.

A third important development was the establishment of domestic firms in the FETA. In countries such as India local participation is compulsory when a foreign firm wants to invest in the country's FETA. This growing importance of domestic enterprises is well-illustrated by the fact that over two thirds of all enterprises located in the FETA of developing countries are presently either fully-owned indigenous firms or joint ventures between domestic companies and foreign partners.

In China the special economic zones were rapidly expanded along the large coastal areas, rather than remaining as small industrial enclaves. The selection of initially four SEZs in the southern part of China in 1978/79 was mainly aimed at achieving a geographic proximity to Hong Kong, Macao and Taiwan in order to fully exploit the advantage of the highest concentration of overseas Chinese. Regarding the foreign investment activities, some significant shifts were made thereafter. These include, for example, moving away from the SEZ to a broader geographical spread leading to the subsequent expansion of SEZs along the coast, shifting concentration from real estate development (including hotels and other tourist facilities) towards industry, and turning away from joint-venture-based investment to wholly owned enterprises (Wall, 1993).

In the near future the evolution of classical manufacturing-oriented FETA into a modern service-oriented zone is expected. This mainly reflects the growing importance of the service sector in total economic activities and the increased tradability caused by the rapid development of information and telecommunication technology. In other words, the

growing service-orientation of some FETAs is, therefore, a much wider and more ambitious concept than the free ports, because it encompasses not just traditional trading and transporting activities but also modern financial and business services such as banking, insurance and data processing. The concept of FETA as such a service-oriented (and services-cum-manufacturing) zone could also encompass some tourism or educational services (United Nations Centre on Transnational Corporations, 1991).

However, according to past experiences world-wide, FETAs have not usually developed along lines originally planned. Furthermore, the economic and social benefits of a zone tend to be much greater (or much smaller) than anticipated, and in most cases quite different from what had originally been planned. These facts are well indicated by the development of a number of zones into industrial mono-cultures, rather than into the well-balanced and highly diversified industrial parks envisaged by the planners. The phenomenon is due to a number of complex sociological and economic reasons which suggest that a FETA maintains a life of its own and an internal dynamism that one can hardly predict in the planning process. The mistakes made during the planning and design stage have also led to the failure of FETAs in many countries, which include, for example, the choice of an underdeveloped region with poor road and air communications; insufficient attention to the other basic infrastructure (such as telecommunications or electricity supply, etc.) and to the overall interregional and/or international accessibility of the region; a mismatch between skills of indigenous work forces and those required for new production activities, etc. To a larger extent, the successful development of a zone also seems to be led by the ability and flexibility of the zone authorities to react to changing (particularly economic) circumstances, to make the necessary mid-course corrections, to adjust the zone's institutional structure to new problems arising with zone development and, more generally, to develop an effective evaluation and problem-solving mechanism (Tuppen, 1993; United Nations Centre on Transnational Corporations, 1991).

Effects of Various Tax Concession Measures on Investment Decision

The generosity of different types of tax concessions in combination with corporate tax rates can be determined on the basis of the so-called Samuelson's true economic depreciation (TED). Under the assumption that

- a self-financed investment costing C generates an infinite stream of future gross return,
- this return exponentially declines at a given rate ($0 < \alpha < 1$) and
- all prices are constant over time (i.e. $\pi = 0$),

Samuelson (1964) showed in his fundamental theorem of tax-rate invariance that corporate income taxation does not affect firms' investment decisions at all, when TED —

the negative change in value of the asset in the course of time — is deducted from an expected gross stream of return when calculating tax profits (see also Atkinson and Stiglitz, 1980). And the TED rate is the same rate at which the gross return declines in the course of time (i.e. the TED rate = α).

In the absence of taxation and also in the case of profit tax exemption, an equity-financed investment project is on the margin of acceptance at the year of investment, when

$$(1) \qquad C = PV_0 = \int_0^{\infty} A_0 e^{-(\alpha+r)u}\, du = \frac{A_0}{\alpha+r},$$

where A_u (= $A_0 e^{-(\alpha+r)u}$) means gross return at year u and r is the real interest rate ($0 < r < 1$) before imposing corporate tax. In such an equilibrium, the NPV amounts to zero.

If cash investment subsidy is provided at the year 0, the equilibrium condition of the equation (1) changes to

$$(2) \qquad C - kC < PV_0 = \int_0^{\infty} A_0 e^{-(\alpha+r)u}\, du = \frac{A_0}{\alpha+r},$$

where kC is the total amount of cash subsidy at the investment year. By the given PV_0 this subsidy is equivalent to the extra profit for the investor.

Accelerated depreciation is generally used in combination with the straight-line depreciation method. Accelerated depreciation expense (as a certain percentage share of investment cost) is tax-deductible in the first year of a capital good's tax life. Consequently, total depreciation expense in the first year reaches

$$(3) \qquad D_1^{ad+sld} = \sigma C + \frac{C}{\Gamma},$$

where σ indicates the accelerated depreciation rate ($0 < \sigma < 1$), and C/Γ denotes the annual sum of straight-line depreciation over Γ tax lives.

Because an extra amount of expense can be deducted in the first year, the total tax-life of a capital good is reduced correspondingly from Γ to Ω. And

$$(4) \qquad \Omega = (1 - \sigma)\Gamma \ .$$

The present value of the asset with accelerated depreciation at year 0 is

$$(5)\qquad PV(t)_0^{ad} = (1-t)\int_0^{\infty} A_0 e^{-\{\alpha+r(1-t)\}u}\,du + t\int_0^{1} \sigma C e^{-r(1-t)u}\,du$$

$$+ t\int_0^{\Omega} (C/\Gamma) e^{-r(1-t)u}\,du$$

$$= PV_0 + tC\left[\frac{\sigma\{1-e^{-r(1-t)}\}}{r(1-t)} + \frac{1-e^{-r(1-t)\Omega}}{r(1-t)\Gamma} - \frac{\alpha}{\alpha+r(1-t)}\right] .$$

In the context of <u>free depreciation</u> the total amount of investment cost can be written off in the first year. When employing this depreciation method, the present value of asset at year 0 is

$$(6)\qquad PV(t)_0^{fd} = (1-t)\int_0^{\infty} A_0 e^{-\{\alpha+r(1-t)\}u}\,du + t\int_0^{1} C e^{-r(1-t)u}\,du$$

$$= PV_0 + tC\left\{\frac{1-e^{-r(1-t)}}{r(1-t)} - \frac{\alpha}{\alpha+r(1-t)}\right\} .$$

Furthermore a certain percentage share of investment cost referred to as <u>investment tax allowance</u> can be deducted from gross profit in the first year when calculating the tax base. Investment tax allowance is also used in combination with straight-line depreciation. Unlike the case with accelerated depreciation, the total tax-life of a capital good remains unchanged. As a consequence, this type of tax incentive provides possibilities of depreciating the value, which is significantly higher than the original investment cost of a capital good.

With investment tax allowance the present value of asset at year 0 is

$$(7)\qquad PV_0^{ita} = (1-t)\int_0^{\infty} A_0 e^{-\{\alpha+r(1-t)\}u}\,du + t\int_0^{1} (\beta C) e^{-r(1-t)u}\,du + t\int_0^{\Gamma} (C/\Gamma) e^{-r(1-t)u}\,du$$

$$= PV_0 + tC\left[\frac{\beta\{1-e^{-r(1-t)}\}}{r(1-t)} + \frac{1-e^{-r(1-t)\Gamma}}{r(1-t)\,\Gamma} - \frac{\alpha}{\alpha+r(1-t)}\right] ,$$

where β indicates the rate of investment tax allowance ($0 < \beta < 1$).

Consideration of Fictitious Profit and Inflation Losses

In an economy with the constant annual inflation rate π, the stream of nominal gross return which is generated by an investment costing C at year u can be expressed as

$$(8) \qquad A_u = A_0 e^{-\alpha u} e^{\pi u} = A_0 e^{-(\alpha-\pi)u} \ .$$

In this case, the sum of annual gross return exponentially decreases at rate α but increases at rate π over the course of time.

The size of fictitious profits and the additional corporate tax burden, which are caused by applying the historical cost accounting method in the inflationary phase, can also be measured on the basis of the net present value model. Such inflation losses lead to the reduction of nominal net present value. More precisely, the amount of increased tax burden caused by inflation can be described as the difference between the two nominal PVs, one with depreciation measured on the basis of current (replacement) value of a capital good and the other determined on the basis of the historical cost accounting method.

In the case of employing the historical cost accounting method, the nominal present value of the asset with straight-line depreciation at year 0 is

$$(9) \qquad nPV(t)_0^{sld} = (1-t)\int_0^{\infty} A_0 e^{-\{\alpha-\pi+\mu(1-t)\}u}\,du + t\int_0^{\Gamma} (C/\Gamma) e^{-\{\mu(1-t)\}u}\,du$$

$$= \frac{(1-t)A_0}{\alpha-\pi+\mu(1-t)} + \frac{tC\{1-e^{-\mu(1-t)\Gamma}\}}{\mu(1-t)\Gamma} \ ,$$

where the nominal interest rate $\mu = r + \pi$.

On the other hand, when depreciation expense is determined on the basis of current investment cost, the nominal value of the asset with the same depreciation method at year 0 is

$$(10) \qquad nPV(t)_0^{sld*} = (1-t)\int_0^{\infty} A_0 e^{-\{\alpha-\pi+\mu(1-t)\}u}\,du + t\int_0^{\Gamma} (C/\Gamma) e^{-\{\mu(1-t)-\pi\}u}\,du$$

$$= \frac{(1-t)A_0}{\alpha-\pi+\mu(1-t)} + \frac{tC\{1-e^{-\{\mu(1-t)-\pi\}\Gamma}\}}{\{\mu(1-t)-\pi\}\Gamma} \ ,$$

where the current investment cost at year u is $Ce^{\pi u}$.

The difference between $nPV(t)_0^{sld}$ and $nPV(t)_0^{sld}*$ is defined as the present value of additional corporate tax burden (inflation losses) at year 0 (ATB_0^{sld}), which is caused by the fictitious profit. With the economic life of a capital good Γ^*, therefore

$$(11) \quad ATB(\Gamma^*)_0^{sld} = tC\left[\frac{1-e^{-\{\mu(1-t)-\pi\}\Gamma^*}}{\{\mu(1-t)-\pi\}\Gamma^*} - \frac{1-e^{-\mu(1-t)\Gamma^*}}{\mu(1-t)\Gamma^*}\right] = tC(FP_0^{sld}) \ ,$$

where FP_0^{sld} indicates the present value of fictitious profit per monetary unit at year 0 in the case of adopting straight-line depreciation. In order to examine whether and to what extent generous tax depreciation provisions promote private investments in inflationary situations, the value FP_0^{sld} (with Γ^*) can be adopted as the benchmark.

When the amount of annual depreciation expense is calculated on the basis of historical cost, the incentive effect of <u>accelerated depreciation</u> on private investment in an inflationary phase can be measured by

$$(12) \quad nPV(t)_0^{ad} - nPV(t, \Gamma^*)_0^{sld}$$

$$= tC\left[\frac{\sigma\{1-e^{-\mu(1-t)}\}}{\mu(1-t)} + \frac{e^{-\mu(1-t)\Gamma^*} - e^{-\mu(1-t)\Omega^*}}{\mu(1-t)\Gamma^*}\right] = tC(IE_0^{ad}) \ ,$$

where $nPV(t)_0^{ad}$ is the nominal present value of the asset with accelerated depreciation at year 0 and Ω^* denotes the reduced tax-life of a capital good, when $\Gamma = \Gamma^*$.

With <u>free depreciation</u>,

$$(13) \quad nPV_0^{fd} - nPV(\Gamma^*)_0^{sld}$$

$$= tC\left\{\frac{1-e^{-\mu(1-t)}}{\mu(1-t)} - \frac{1-e^{-\mu(1-t)\Gamma^*}}{\mu(1-t)\Gamma^*}\right\} = = tC(IE_0^{fd}) \ ,$$

where nPV_0^{fd} indicates the nominal present value of the asset with free depreciation at year 0.

When <u>investment tax allowance</u> is adopted and the tax-life of a capital good is Γ^*,

$$(14) \quad nPV_0^{ita} - nPV(\Gamma^*)_0^{sld}$$

$$= tC\left[\frac{\beta\{1-e^{-\mu(1-t)}\}}{\mu(1-t)}\right] = tC(IE_0^{ita}) \ ,$$

where nPV_0^{ita} is the nominal present value of the asset with investment tax allowance at year 0.

Subsequently, generous tax concession measures simply compensate the inflation losses in full-scale when

(15) $IE_0^{ad} = FP_0^{sld}$

(16) $IE_0^{fd} = FP_0^{sld}$

(17) $IE_0^{ita} = FP_0^{sld}$.

In spite of inflation, tax concession rules shown above guarantee investment promotion effects when IE values (i.e. IE_0^{ad}, IE_0^{fd} and IE_0^{ita}) are greater than FP_0^{sld}.

Model Simulation

Table 1 illustrates NPV under different tax concession measures calculated using standard parameter assumptions in an economy without inflation (i.e. $\pi = 0$). The derived ranking of investment promotion effects (i.e. the extent of tax paradox) varies from one measure to another in the investigated range of corporate tax rates. For example, free depreciation provides the highest NPV within a range of tax rates between 10% to 45%, while the same value under investment tax allowance is highest when t = 50%. Accelerated depreciation guarantees a higher NPV than investment tax allowance does, when, for example, t = 10%.

Repeatedly, the application of the historical cost accounting method in calculating the corporate tax base causes fictitious profits in inflationary phases that are also subject to tax. For example, in spite of inflation the ‘true’ incentives can be guaranteed by free depreciation under the given parameter assumptions including t = 20%, when π reaches approximately 25% (Table 2). However, with the same tax rate accompanied by $\pi = 14\%$, the promotion effects of accelerated depreciation disappears altogether. Furthermore the stimulation of private investment through the adoption of investment tax allowance cannot be expected when the inflation rate is higher than 7%. Additional tax burden positively correlates with the tax rate by the given inflation rate. As a result, the compensation of

inflation losses through tax concession measures ceteris paribus takes place with lower inflation rates, when t increases to 40%.

Table 1 Investment Promotion Effects of Tax Concessions without Inflation

Statutory corporate tax rate for retained earnings (t in %)	Free depreciation	Accelerated depreciation	Investment tax allowance
	Net present value		
10	8.89	5.51	5.37
15	12.85	7.85	8.18
20	16.45	9.89	11.08
25	19.68	11.65	14.08
30	22.51	13.10	17.16
35	24.91	14.26	20.33
40	26.85	15.11	23.58
45	28.30	15.65	26.92
50	29.24	15.88	30.34
Assumptions	Equity finance; $C = PV_0 = 333.33$; $A_0 = 100$; $r = 10\%$; $\alpha = 20\%$; $\Gamma = 10$ years; $\sigma = 50\%$; $\Omega = 5$ years; $\beta = 20\%$		

Source: Own calculations

Table 2 Investment Promotion Effects of Tax Concessions with Inflation under Given Corporate Tax Rates

Inflation rate (%)	Free depreciation		Accelerated depreciation		Investment tax allowance	
	tC (IE_0 with various tax concessions – FP_0^{sld})					
	t = 20%	t = 40%	t = 20%	t = 40%	t = 20%	t = 40%
1	17.53	15.00	12.59	10.05	10.81	8.28
2	16.87	11.79	11.56	6.48	8.87	3.79
3	16.21	8.56	10.54	2.89	7.00	–0.65
4	15.55	5.30	9.53	–0.71	5.19	–5.05
5	14.88	2.02	8.53	–4.32	3.44	–9.41
6	14.21	–1.28	7.54	–7.96	1.75	–13.75
7	13.53	–4.62	6.55	–11.61	0.10	–18.06
8	12.85	–8.00	5.57	–15.28	–1.50	–22.34
9	12.17	–11.41	4.59	–18.98	–3.05	–26.62
10	11.47	–14.85	3.62	–22.71	–4.56	–30.33
11	10.78	–18.33	2.65	–26.46	–6.03	–35.14
12	10.08	–21.85	1.69	–30.25	–7.46	–39.39
13	9.38	–25.41	0.73	–34.07	–8.86	–43.65
14	8.67	–29.02	–0.23	–37.92	–10.22	–47.92
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
25	0.55	–72.44	–10.58	–83.57	–23.60	–96.60
Assumptions	Equity finance; $C = PV_0 = 333.33$; $A_0 = 100$; $r = 10\%$; $\alpha = 20\%$; $\Gamma = \Gamma^* = 10$ years; $\sigma = 50\%$; $\Omega = 5$ years; $\beta = 20\%$					

Source: Own calculations

Conclusion

One important characteristic of the FETA is the provision of generous investment promotion schemes solely allowed in this enclave. Such measures include profit tax exemption, free or accelerated depreciation, investment tax allowance, subsidy for investment costs, etc. From the point of view of the competitive firm which strives to maximise profits, this study compares, using net present value models, incentive effects of various tax concession measures under inflation. These effects are determined based on Samuleson's true economic depreciation.

According to the calculation made under the given parameter assumption and $\pi = 0$, the ranking of investment promotion effects changes from one measure to another in the investigated range of statutory corporate tax rates. For example, free depreciation provides the highest NPV when the tax rate ranges between 10% to 45%, while the same value with investment tax allowance (with $\beta = 20\%$) is highest when t = 50%. The profit tax exemption expels the possibility of tax paradox in the standard marginal equilibrium condition for the investment decision. Furthermore, the subsidy for investment costs is equivalent to the extra profit for the investor by the given asset value and therefore can change the investors' marginal acceptance level.

The aspect of inflation linked with different depreciation rules is of particular importance in transition and developing countries where their economies have been confronted with rising prices. In particular the application of the historical cost accounting method causes fictitious profits in inflationary phases. Therefore, the extra tax burden increases with the corporate tax rate by the given inflation rate. In this sense the selection of lower corporate tax rates can also be justified in the FETA. Under the given parameter assumptions including t = 20% and an annual inflation rate higher than 25%, however, the free depreciation scheme does not seem to provide any 'true' incentive effects but only compensates such inflation losses.

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