

Supporting Innovation Through a Mechanism of Accelerated Depreciation in the Republic of Uzbekistan

Authors:

- PROF. **Francisco Jesús Ferreiro Seoane**. Department of Applied Economics. University of Santiago de Compostela. Spain.
Adress: Paseo de los Puentes nº 12 4 A. 15004 A Coruña
Email: franciscojesus.ferreiro@usc.es
Telephone number: 629 881 909
- PROF. **Zaynalov Jahongir Rasulovich**. Head of the Financial and Insurance services Department. Samarkand Institute of Economics and Services. Republic of Uzbekistan.
- PHD Researcher. **Khaydarov Ravshan Rahmonovich**. College of Business, Department of Accounting and Finance. Dublin Institute of Technology.

Abstract

The state plays a paramount role in the development of the national economy. In this development process the state with direct levers, using the available tools as State Financial Support, Banks systems, Tax policy can provide incentives to identify areas for managing business entities. Obviously, one of the main levers of the State policy is a tax policy. Tax policy plays a crucial role in supporting innovation activities, which in turn provide sustainable economic growth for both the economic entities and the state. Whereas, due to guaranty of sustainable production line in the market economy, the economic entity always needs additional financial resources that ensure the renewal of fixed assets. The present paper focuses on the variation of calculations of the depreciation fund in the Republic of Uzbekistan. Regarding to both the tax rates and interval of the residual value of fixed assets, without attracting financial flows the economic entities can update fixed assets, which is on the same time increases the tax payments to the state budget in case of Uzbekistan.

Keywords:

Tax, Depreciation fund, Variation, Fixed assets, Business entities.

JEL: H3 y O4

1. Introduction

The state plays a paramount role in the development of the national economy. Using the available tools, the state can provide incentives to identify areas for managing business entities in their own areas (Stradi and Haven, 2005). Apart from being used for fiscal purposes, the tax system can be used to stimulate investment in the real sector of a transition economy (Arkin, Slastnikov and Arkina, 2003). To this end, one of the essential elements of the tax system is depreciation. It does not transfer the cost of assets to the costs of the merchandise (Kurczodyna, 2010). Depending on the proper choice of incentives and business management, the outcome will affect the growth of productivity of fixed assets and also increase job creation, which is a fundamental factor for the development of the national economy.

Generally, only economic factors influence the process of the formation of a depreciation fund, accruing depreciation using different types of acceleration factors (Stradi *et al*, 2005; Joppe, Spröge, and Zelgalvis, 2010). The state only allows a sinking fund to redistribute in time the amount of depreciation that affects the tax base for income and property taxes. As a result, the entity will still pay the amount due of said taxes. As we can see, the state is inert to the process of renewal and to the increase of fixed assets, which directly affects the increase of a company's revenue and consequently an increase in payments for income tax and property taxes. Indeed, the growth of fixed assets (BPA) in industry significantly increases the growth of GDP and tax revenue by expanding production capacity.

In due time, the West came up with a form of investment such as leasing, introducing an acceleration factor, and this has led to a situation in which, to date, most investment is precisely this form of financing (Filip, 2012). In time, Western countries were not afraid to cut the tax base for income tax and property tax. As shown in the present long-term practice, leasing is constantly and rapidly evolving, and no state is going to give up this form of investment in basic production assets, as the growth of BPA for any state produces only positive effects.

Furthermore, in most cases the economic entity benefits from leasing, as a depreciation fund dramatically increases when it is used. The economic entity does not always invest in BPA. Unfortunately, nowadays such a revolutionary mechanism has been created that any entity would be persuaded to constantly increase the quality and quantity of their BPA, stimulating it with such a tool, and therefore they would not have the desire to spend dramatically, thus increasing the depreciation fund for secondary targets.

With such a mechanism, which influences the process of forming the source of BPA updates, actions must be committed both by the economic entity and the state (Arkin and Slastnikov 2007). On the one hand, the entity must enforce a depreciation policy that takes into account market conditions and is aimed at establishing a depreciation fund. On the other hand, the state must provide a well-defined tax policy in order to encourage the business entity towards a constant resource flow to the depreciation fund, which ensures BPA renewal (Hall, 2005).

This joint mechanism would allow the business entity to reasonably form and share a depreciation fund, based on the market situation, and not on a desire to dramatically reduce payable taxes. Such a fund could provide reasonably increasing amounts of tax revenue for the state, secured by an increase in production, which is the effect of previous investments in BPA, and also adjust the behavior of the economic entity in so far as the allocation of the depreciation fund.

2. The experience of developed countries

Over the last decade, the successful industrial development and commercialization of scientific results has been one of the key goals of European economic policy (Joppe *et al*, 2010). In many countries of the world, albeit to a varying extent, there are tax benefits associated with depreciation write-offs. They are used to stimulate the development of specific industries, the promotion of R&D activities and for general investment recovery.

In Germany, the methods and rates of depreciation are the subject of an elaborate legislation. The Federal Ministry of Finance and the Ministry of Finance formally approved tables (more than 90), which define the methods and rates of depreciation for different types of assets. Linear coefficients were initially used. Therefore, for industrial buildings and structures, the permitted annual rate of depreciation write-off is 4% (which means taking their service life to over 25 years), industrial machinery and equipment - 10% (lifetime of 10 years), computers - 20%, road transport - 20-25%, etc. But at the same time, German law gives companies the right to use accelerated depreciation on these assets. The most widely used method for admission, compared to the straight-line method of depreciation, is drastically overestimating during the first years of life of fixed assets and dramatically underestimating for subsequent years (for a fixed term of the proposed general services). Thus, for industrial buildings and structures the annual depreciation rate shall be 10% for the first 4 years of service, 5% - for the following 3 years and 2.5% - for the next 18 years. For production machinery and equipment, annual depreciation rates can be tripled in the first few years of their service life (Lobont, Moldovan and Corduneanu, 2010; Hall, 2005).

In the U.S., tax incentives, which were introduced in the 60's and 70's during a period of high inflation, underwent significant changes in the more stable economic environment of the 80's. Adopted in 1986, the law on state tax policy became more focused, although it narrowed the application of the previously authorized tax benefits (Kurczodyna, 2010). Depreciation periods were increased, but mostly only with respect to the passive part of fixed assets (buildings and structures); nevertheless, the active part of their depreciation was accelerated even more - so that with a 5 year write-off period, it was possible to write off up to 64% of the cost of equipment during the first 2 years.

The systems of depreciation write-offs in Sweden allows equipment to have a service life of up to 3 years and may be expensed in the year of acquisition, and the entire cost of machinery and equipment within 4-5 years. In France, it is possible to use accelerated depreciation for equipment used in the manufacturing and process industries, energy-saving and environment sectors, information equipment, etc. For example, a computer can absorb up to 1 year. The coefficient of accelerated depreciation on equipment lifetimes of up to 4 years is 1.5, a service life of 5-6 years - 2, more than 6 years – 2 to 2.5.

Accelerated depreciation methods are used not only in developed countries but also in developing countries to varying degrees. It is common for these methods to be used intensively in order to stimulate investment in technical renewal.

In Russia, the following factors are allowed with respect to accelerated depreciation: for fixed assets, operating in harsh environments and/or multiple shifts - up to 2; assets used in agricultural production and in small businesses - 2, and up to 3 for leased objects (Shatalova, 2012). Along with the use of accelerated depreciation, small businesses can write off a further depreciation of up to 50% of the original cost of fixed assets with a service life of more than three years (Arkin *et al*, 2007).

Similarly, in the Ukraine, the use of accelerated depreciation is allowed for small businesses during the first year of operation and a further write off depreciation of up to 20% of the original value of fixed assets with a service life greater than three years.

3. The use of accelerated depreciation in Uzbekistan

In the Republic of Uzbekistan, in recent years, there have been significant reforms regarding taxation. The constant reduction of the tax burden in relation to GDP, from 28.5% in 2000 to 21.3% (excluding earmarked extra-budgetary funds) in 2012, contributed to many of the objectives of the anti-crisis program (Karimov, 2013). Currently, out of 177 countries for which tax burden data is available, Uzbekistan is ranked 91. The tax burden in Denmark, Sweden, Belgium, and France exceeds the level of 40% of GDP.

In the territory of the Republic of Uzbekistan there are taxes and other obligatory payments in accordance with those updated in 2008 by the Tax Code. Recently, fiscal levers have been gradually introduced to encourage a transitional development of innovation in the economy. The given privileges, of course, contribute to innovation activities in various sectors of the economy. In recent years there has been a steady trend towards lower rates of taxes and fees (Table 1).

The table shows that for the period 2000-2012, the income tax rate was reduced from 31% to 9%, property tax – from 4% to 3.5%, social security payment - from 40% to 25%. Other taxes and mandatory contributions paid by legal entities have not changed. The corporate tax rate for small businesses has been reduced from 12% in 2005 to 5% – in 2012.

The types of taxes and fees are characterized by the fact that some of them are included in the price of the goods, without being a structural part of the production costs (indirect taxes), while the rest are charged to profit or are a part of the costs of the enterprise.

A variety of tax incentives for innovation have been introduced. For example, in order to support innovation, income tax payers have the right to reduce taxable income depending on the amount of funds allocated to modernization, to the technical and technological renewal of equipment, the purchase of new equipment, the repayment of loans for these purposes, the reimbursement of the cost of lease assets, for five years but not more than 30% of taxable income. When calculating tax on the property of legal entities, there is a reduction of the tax base on the value of newly commissioned equipment for a period of 5 years (Uzbekistan Government, 2007).

A significant aspect of public support for innovation is the Decree of the President of the Republic of Uzbekistan, dated July 15, 2008, “On additional measures to stimulate innovative projects and technologies in production”. It states that the funds allocated to finance modernization and new technologies that are used by business entities for funding applied scientific research and for the development of innovative projects, for development projects and their implementation, for training and research institutions and organizations and also for design organizations shall be exempt until 1 January 2013 from the payment of income tax, single tax, VAT and mandatory payments to the state

trust funds (except single social tax), in so far as applied research and development work contracted with business entities; equipment imported for the re-equipping and retrofitting of research institutions and organizations, as part of the modernization included in the lists approved by the Cabinet of Ministers of Uzbekistan, is exempt from customs duties (excluding charges for customs clearance) (Karimov,2008; Tillyakhodjaev, 2010).

Also, support for SME development in the sphere of innovation lies in the Resolution of the CM of Uzbekistan № 144 “On additional measures to stimulate innovative projects in production”, which provides:

1. Grants, including those from the Fund for Entrepreneurship Support and those for the reconstruction of enterprises from the State Committee and the Chamber of Commerce;
2. Assistance with the establishment of modernization and new technologies, the sources of which are part of depreciation and net profit businesses (Karimov, 2009).

As a result of this legislation and normative, the number of companies developing innovations in science and technology is 156. However, the Republic of Uzbekistan allowed accelerated depreciation in order to tax deductions, thus restricting the standards established by the Tax Code. This means that, in determining the tax base, depreciation deductions are deductible only to a certain limit, and the difference from exceeding those standards, which arose in the calculation of the accelerated depreciation method, is included in the tax base for income tax. Moreover, the taxpayer is not entitled to deduct the difference from the tax base, even in subsequent years. As a result, for companies in Uzbekistan there is no effect from the use of accelerated depreciation for income tax.

In our opinion, favorable conditions for increasing the flow of investment in the real sector of the economy will come about with the proper development of specific schemes that bring about the possibility of faster and more efficient returns on investments in fixed assets.

Thus, depreciation has a direct effect on the tax base for corporate profit tax. Additionally, depreciation policy determines the residual cost of assets, which is the tax base of property tax. Hence, an increase in depreciation charges reduces the tax base of property and income tax and can potentially act as a stimulus for investments (Arkin *et al.*, 2003). Acute interest in the depreciation mechanism may also be attributed to the fact that depreciation charges are, at present, an important source of capital budgeting for enterprises in the Uzbek economy.

The present study focuses on the modeling of the mechanism of accelerated depreciation that is aimed at attracting investments to BPA for the real Uzbek sector. Such models should include a certain number of factors.

4. Literature Review

There are many publications devoted to the stimulation of investment using fiscal methods. For this reason, we will focus our attention entirely on studies that are directly associated to the topic of our research. Particularly, we will not refer to papers that study the influence of aggregated tax incentives on macroeconomic variables of investment activity (a detailed empirical analysis of the efficiency of the aggregated sub-federal tax incentives for the attraction of investments was carried out in the EERC framework by Evgeniya (2000)) or to regional tax competition to draw in investments (a survey of this subject is found, for instance, in Inman and Rubinfeld, (1996)). Studies that deal with the influence of tax exemptions on a firm’s activity are much closer to our question, although in general, they consider an already established firm. To this respect, Aukutsionek and Batyaeva (2001) conducted a study into the influence of taxation on the financial and economic state of an enterprise. Their study is based on monitoring data from Russian enterprises within the Russian Economic Barometer program. A considerable number of papers deal with the problem of choice of depreciation policy and its influence on the activity of enterprises. Although accounting documents define strict rules for depreciation policies, in many cases there is still a certain degree of freedom in the choice of both the rate and method of depreciation. The minimization of present tax payment values by choosing a particular depreciation policy has also been studied (Roemmich, Duke and Gates, 1978; Berg and Moore, 2001). This alternative could also suffer considerably from the random nature of future cash flows. To this

respect, there are remarkable papers by Arkin *et al.*, (2003), in which this value of future tax payments of the firm (within the progressive tax scale) are compared using two methods of depreciation, straight-line (in equal elements) and “accelerated” (in non-equal parts, decreasing in time). Although the “accelerated depreciation” may appear to be presumably the most favorable (due to a discount effect), the ideal choice of depreciation method in reality might depend on the degree of uncertainty of cash flow, discount rate, fiscal regulations, and the possibility of transferring the losses to other periods of time. Wakeman (1980) has shown that if the tax rate is flat and if taxable income is non-negative in all periods for all available depreciation methods, the accelerated depreciation method is most preferable for tax purposes. With reference to the Russian system of profit taxation, the investment waiting model, which is a development of the McDonald-Siegel model, was proposed by Arkin *et al* (2007). The extension of this model by the introduction of a lag period between the moment of investment and production was studied by Arkin *et al* (2007).

5. Methodology

Current tax rates in the Republic of Uzbekistan were used in the accelerated depreciation mechanism model (Table 1). Any methodology should take into account the interests of both the State and the economic entity and to create this method, the following was taken into account:

5.1. Factors that may influence the formation, such as a depreciation fund, and the amount of payments of income tax and property tax, such as:

1	Initial (residual) value fixed assets	5	Tax base for property tax
2	Net sales	6	Tax base for income tax
3	Costs	7	Income tax rate
4	Sum of depreciation charges	8	Property tax rate

5.2. Indicators, which are influenced by changing size, to establish the rate of income tax and property tax:

Income tax:

An indicator with a direct relationship to the basic production assets revenue growth due to the increase in labor productivity. Such an indicator can be:

$$\text{Fixed Asset Turnover } (F_o) = \frac{\text{Net sales}}{\text{Average net fixed assets}}$$

This indicator reflects the effectiveness of only using the organization’s basic production assets. Therefore, it grows faster than the numerator compared to the denominator, and the per unit fixed production assets have more units of revenue. This is only possible due to the continuous updating of the basic production assets of high-tech, modern and more efficient equipment.

Property tax:

An indicator, which may reflect the quarterly or annual process of increasing or reducing the residual value of fixed assets at the end of each reporting period. Such an indicator can be:

$$\text{Increase BPA} = \frac{\text{BPA at the end of period}}{\text{BPA at the beginning of year}}$$

This indicator reflects the change in the value of the cost of fixed production assets for the period. Thus, if at the end of the reporting period, the value of the residual value of fixed assets is more than at the beginning of the period, this will be the basis to encourage the state to reduce property taxes in proportion to the amount by which the company acquired assets. If this index is equal to or greater than one – it is a positive factor for the enterprise. This means that at the end of the reporting period in which property, plant and production equipment were acquired, the cost at least covers the amount of accumulated depreciation for the period.

5.3. Factors that will stimulate the economic entity to constantly update BPA

Two of the real and effective factors are:

1. A reduction of the income tax rate with an increasing index Fixed Asset Turnover (F_o) which means that each state can set its own reduction bands. If we suppose that for F_o , which is equal to 1 unit, we apply the basic rate of tax on profits α 9 % (0.09), incrementing F_o by 0.05 points (5 %) will mean a reduction in the α by 0.005 points (0.5 %). So, by increasing F_o by 5 times (0.25 points), and $F_o = 1.25$ units, α will decrease by 0.025 points (2.5%), and make up 21.5% (0.215). Data manipulation with the rate of income tax will spur the economic entity to always support their high-tech equipment. This will bring about the opportunity, first of all, to increase revenues V , and secondly, to increase the depreciation fund to such an extent that it will give the optimal residual value R_t , and as a result, to pay tax on profit T_i at discounted rates. If income tax is paid by enterprises on a quarterly basis (annually), the calculation of the return on assets is done at the end of each quarter (of the year), and on the basis of the obtained values will clear the income tax rate.
2. A reduction of the property tax rate by increasing the residual value of the BPA so each state can set its own size reduction bands. If we suppose that the change ΔBPA is less than 1 unit, then we apply the basic property tax rate γ 2.2 % (0.022). Increments of ΔBPA by 0.01 points will mean a reduction in the γ by 0.0001 (0.1%). Thus, by increasing ΔBPA by 10 times (0.1 point), then *Increase BPA* = 0.1 to 1 (10%), γ will decrease by 0.001 (0.1%), and make up 2.1% (0.021). Data manipulation with the rate of property tax will encourage the entity to constantly maintain the residual value of BPA at an optimal level, which will make it possible to pay property tax at reduced rates. If companies pay the amount of property tax L_t quarterly (annual), the calculation of ΔBPA will be at the end of each quarter (of the year), and on the basis of the obtained values will clear the property tax rate.

5.4. Variance sum calculation of income tax

Calculating F_o values for the calculation of the income tax rate:

$$F_o = \frac{V_t}{R_t} \leq 1 \alpha (9\%);$$

$$F_o = \frac{V_t}{R_t} \geq 1 \alpha (\text{less than } 9\%)$$

Computation of the Amount of income tax T_t :

$$T_t = D_t \alpha$$

Profit calculation before taxation D_t :

$$D_t = V_t S_t$$

Cost calculation S_t

$$S_t = Z_t + A_t$$

Where Z_t - total expenses (excluding depreciation) for produced goods

The calculation of depreciation A_t : $A_t = R_t \beta A_f$ then

$$T_{i_t} = (V_t - (Z_t + A_t)) \alpha$$

Supposing that Z_t consists only of the sum of depreciation charges, then:

$$T_{i_t} = (V_t - A_t) \alpha$$

5.5. Variation sum calculation of property tax:

Calculation of the “Gain BPA” for the value of the property tax rate:

$$\Delta BPA = \frac{(BPA \text{ at the end}_t)}{(BPA \text{ at the beginning}_t)} \leq 1 \Rightarrow \gamma (3.5\%)$$

$$\Delta BPA = \frac{(BPA \text{ at the end}_t)}{(BPA \text{ at the beginning}_t)} \geq 1 \Rightarrow \gamma (\text{less than } 3.5\%)$$

The calculation of the average annual value of taxable property:

$$AV_p = \frac{NV_o + NV_m + NV_r}{\text{Number of months in the rep. year (tax)} + 1} \quad (1)$$

The average annual value of the property for the reporting (tax period) = AV_p ;

Net book value of assets at the beginning of the year = NV_y ;

Net book value of assets at the beginning of each month in the reporting period = NV_m ;

Net book value of assets at the beginning of the month following the reporting (tax) period = NV_r .

When t = quarter:

$$\bar{R}_t = \frac{(R_{b_t} + R_1 + \dots + R_3 + R_{e_t})}{3 + 1}$$

$$\bar{R}_t = \frac{(R_{b_t} + R_1 + \dots + R_3 + R_{e_t})}{12 + 1}$$

The calculation of the amount of tax that must be paid to the budget by the end of the reporting period (quarter, six month, year): $L_t = \frac{AV_p}{4} \gamma$

$$\text{Then} \quad L_t = R_t \frac{\gamma}{4} \quad (2)$$

$$\text{Net result of year:} \quad L_t = R_t \gamma \quad (3)$$

6. To study the formation of the laws of the process and also the output of the formulas, we have constructed a mathematical model

Derivation of the formula for the calculation of the variation of income tax.

During the first year of operation, the value of the residual value of fixed assets will be equal to their original value, as:

$$R_0 = I \quad (4)$$

In the second year $t = 1$, the residual value will be equal to the original cost less depreciation as calculated based on A_f

$$R_1 = I - I\beta A_f = I(1 - \beta A_f) \quad (5)$$

Thus the sum of variation income tax in the first year amounts to:

$$T_i = (V_1 - \beta A_f R_1) \alpha \quad (6)$$

$$\text{When } t = 2, \quad R_2 = I(1 - \beta A_f) - I(1 - \beta A_f)\beta A_f \quad \text{or} \quad R_2 = I(1 - \beta A_f)^2 \quad (7)$$

The pattern of formation of the residual value in a particular period t is obvious. Summarizing equations 4, 5 and 7 generally received:

$$R_t = I(1 - \beta A_f)^t, \quad t = \overline{0, \Omega - 1} \quad (8)$$

Thus the sum of variations in income tax in a randomly selected year amounts to:

$$T_{i_t} = \left(V_t - (\beta A_f R_t + L_t) \right) \alpha \quad (9)$$

The total amount of deferred income tax during time Ω can be calculated by adding index t to equation 10:

$$T_i = \sum_{t=0}^{\Omega-1} T_{i_t} \quad (10)$$

Derivation of the formula for the calculation of variations of property tax.

The calculation of the average annual value of *BPA* in the quarter, taking into account equations 1 and 2:

$$L_t = \frac{\frac{R_{b_t} + R_1 + \dots + R_{12} + R_{e_t} \gamma}{12+1}}{4} \quad (11)$$

The calculation of the average annual value of *BPA* in their first year, taking into account equations 1 and 3:

$$L_{-t} = \frac{\frac{R_{b_t} + R_1 + \dots + R_{12} + R_{e_t} \gamma}{4}}{12+1} \quad (12)$$

Thus, the final equation that calculates the amount of variation of income tax and property tax, taking into account equations 9 and 12 will be as follows:

$$T_{i_t} = \left(V_t - \left(\beta A_f R_t + \frac{R_{b_t} + R_1 + \dots + R_{12} + R_{e_t} \gamma}{12+1} \right) \right) \alpha \quad (13)$$

7. Examples according to this method

Below there is a calculation in which there is no variation in the use of the tax system of tax accounting rules.

Using the straight-line method to calculate the charge of depreciation. The cost of *BPA* is equal to USD 100,000. The useful life is 10 years., we obtain Table 2.

Let's make a property tax payment for the first year at a rate of 3.5% (Table 3).

The average annual value for 1 year: $(100,000 + 90,000)/2 = 95,000$

Suppose revenue for the year was USD 100,000. From here

$$F_o = \frac{100,000}{95,000} = 1.053$$

Income tax rate – 9%. The amount of income tax in the first year:

$$T_t = \left(V_t - (\beta A_f R_t + L_t) \right) \alpha = 100,000 - (10,000 + 3,325) * 0.09 = 86,675 * 0.09 = 7,801$$

Let's make a payment of property tax for the last year at a rate of 3.5% (Table 4).

Income tax on profit for the last ten years onwards:

$$T_t = \left(V_t - (\beta A_f R_t + L_t) \right) \alpha = (100,000 - (10,000 + 110) * 0.09 = 89,890 * 0.09 = 8,090$$

Further calculations using the rules of financial accounting. The cost of *BPA* is equal to USD 100,000, the useful life cycle is 10 years. Applying the declining balance method of $A_f = 1.5$, we obtain the depreciation in Table 5.

Let's make a payment of property tax for the first year at a rate of 3.5% (Table 6)

The average annual value for 1 year $(100,000 + 85,000)/2 = 92,500$.

Suppose revenue for the year was equal to USD 100,000. From here

$$F_o = \frac{100,000}{92,500} = 1.081$$

The income tax rate – 9%. The amount of income tax in the first year:

$$T_t = (V_t - (\beta A_f R_t + L_t)) \alpha = (100,000 - (15,000 + 3,237)) * 0.09 = 81,732 * 0.09 = 7,359$$

With the use of different methods of calculating depreciation for tax and financial accounting, without inserting money in places, without an increase in BPA and the absence of variation in tax rates, the amount of tax lost by the state is USD 442.13.

Further calculations using the rules of variation. The cost of *BPA* is equal to USD 100,000. The useful life is 10 years. Applying the declining balance method when $A_f = 1.5$ we obtain the depreciation in Table 5. The net amount of depreciation is equal to USD 15,000 which reduces the amount of income tax by USD 1,350. This amount is available to obtain new high-tech *BPA*. If for the USD 1 value of the existing *BPA* the enterprise received revenue equal to USD 1, and with a new USD 1 value of *BPA* we assume is equal to USD 2 revenue.

$$Revenue = 100,000 + (1,350 * 2) = 102,700$$

Annual Average Value for 1 year:

$$\frac{100,000 + 85,000 + 1,350}{2} = 93,175; F_o = \frac{102,700}{93,175} = 1.102$$

We can see from baseline F_o that there was an increase, as a result of which the income tax rate will decrease by 7.9%. At the end of the reporting period, the amount of income tax will be calculated at the rate of 7.9%.

Let's make a payment of property tax for the first year at a rate of 3.5% (Table 6)

$$(Increase\ BPA) = \frac{BPA\ at\ the\ end\ of\ period}{BPA\ at\ the\ beginning\ of\ year} = \frac{85,000 + 1,350}{100,000} = 0.864$$

As 0.864 is less than the base rate of 1 unit, the company cannot pay this tax at a reduced rate. If the state base rate i were 0,8, then the entity would be able to pay at a reduced rate, moreover, the sum of income tax in the first year amounts to:

$$T_{it} = (V_t - (\beta A_f R_t + L_t)) \alpha = (102,700 - (15,000 + 3,238)) * 7.9\% = 6,565,89$$

Comparing the second method of calculating taxes with the third described in Table 7, the difference is relatively small. When the entity invests money it has saved, for the process of convergence, the amount of taxes with the first and third method of calculating taxes is obvious. Based on the above calculations, the following pattern was revealed: larger investment tax funds released in the *BPA*, increase tax revenues by initially reducing tax bases. To confirm this pattern let's check the following example:

Further calculations using the rules of financial accounting. The cost of the *BPA* is USD 100,000. The useful life cycle is equal to 10 years. Applying the declining balance method of $A_f = 4$, then we obtain the depreciation in Table 8.

The result of a depreciation amount equal to USD 40,000 reduces the amount of income tax by USD 3,600. This amount is available to obtain new high-tech *BPA*. If for the USD 1 value of the existing *BPA* the enterprise received USD 1 of revenue, and with a new USD 1 value of *BPA* we assume is equal to USD 2 revenue.

$$Revenue = 100,000 + (3,600 * 2) = 107,200$$

$$\text{Annual Average Value for 1 year: } \frac{100,000+60,000+3,600}{2} = 81,800 ; F_o = \frac{107,200}{81,800} = 1.311$$

We can see from baseline F_o that there was an increase, as a result of which the income tax rate will decrease by 3.11% and be equal to 7.69%. At the end of the reporting period, the amount of income tax will be calculated at the rate of 7.69%.

Let's make a payment of property tax for the first year at a rate of 3.5% (Table 8)

$$T_{i_t} = (V_t - (\beta A_f R_t + L_t)) \alpha = (107,200 - (40,000 + 2,800)) * 7.69\% = 64,400 * 7.69 = 4,952$$

We performed an analytical calculation of the amounts of income tax and property tax in the last year, as was done in Example 1.

Let's make a payment of property tax for the last year at a rate of 3.5% (Table 10).

With the amount of income tax in the last ten years onwards, (respectively at a rate of 94%) based on the calculation – F_o :

$$T_{i_t} = (V_t - (\beta A_f R_t + L_t)) \alpha = (107,200 - (1,007.77 + 17.64)) * 9\% = 106,174 * 9\% = 9,556$$

As we can see, there is a difference between the income tax expense from USD 8,090 in 10 years in Example 1 and the sum of USD 9,556. The State in any case benefits in the form of increased tax revenue.

8. Conclusion

In terms of economic policy, when there is quite a limited possibility of increasing investment in the means of production, capital efficiency depends not only on the fulfillment of the entity's technological structure but also on the use of rational methods of financing the cost of the equipment. In this situation, the use of a depreciation fund, as a method of financing, consistent with the principles of the intensive expanded reproduction of capital assets, would be an effective tool for the renovation of fixed assets.

The optimal choice of management strategy for residual value and depreciation fund BPA – is the prerogative of the entity carrying out this action, based on the structure of the tax policy of the state's variation in tax rates. The entity, using the formulas given above can answer the question of at which point in time (t) or at which time interval the residual value of BPA will be optimal for the entity, based on tax rates.

Summarizing all the above, we can say that in theory it is reasonable to permit a company to create and distribute a depreciation fund, depending on the market situation. And it can be produced at the expense of taxes, thus encouraging the entity to constantly channel funds to upgrade BPA .

In almost all developed countries, the government is the initiator and direct participant in stimulating and supporting innovation in enterprises. At the same time, tax mechanisms to support innovation occupy an especially significant role that should be strengthened and developed.

In our opinion, in the Republic of Uzbekistan, encouraging the tax policy in this article and also putting into practice the experience of most developed countries would result in financial support for R&D with the proper development of specific schemes that would bring about the possibility of a faster and more efficient return investment in fixed assets in the economy, which in turn would create favorable conditions for increasing the flow of investments in the real sector of the economy.

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10. Appending

TABLE1. DYNAMICS OF TAX PAYMENTS RATES FOR LEGAL ENTITIES IN THE REPUBLIC OF UZBEKISTAN (UZBEKISTAN, 2009)

<i>N</i>	<i>Type of Tax payments</i>	2.000	2.005	2.006	2.007	2.008	2.009	2.010	2.011	2.012
1	Income Tax	31	15	12	10	10	10	9	9	9
2	VAT	20	20	20	20	20	20	20	20	20
3	Property tax of legal entities	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
4	Single tax	~	12	13	10	8	8	7	6	5
5	I. tax for the imp and dev of s. Infr.	8	8	8	8	8	8	8	8	8
6	Compulsory payments to R.R.F	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4
7	Mandatory payments to the P.F.	0.7	0.7	0.7	0.7	1	1	1.5	1.6	1.6
8	Single social payment	40	31	24	25	24	24	25	25	25
9	Tax on dividends individuals	~	15	10	10	10	10	10	10	10

Source: Compiled by author

TABLE 2. THE STRAIGHT-LINE METHOD TO CALCULATE THE CHARGE OF DEPRECIATION

<i>Year</i>	<i>Residual value at beginning of year</i>	<i>Accrued annual depreciation</i>	<i>Residual value at beginning of year</i>
1	100,000	10,000	90,000
2	90,000	10,000	80,000
3	80,000	10,000	70,000
4	70,000	10,000	60,000
5	60,000	10,000	50,000
6	50,000	10,000	40,000
7	40,000	10,000	30,000
8	30,000	10,000	20,000
9	20,000	10,000	10,000
10	10,000	10,000	0

Source: Compiled by author

TABLE 3. PAYMENT OF PROPERTY TAX

<i>Month</i>	<i>Residual value</i>	<i>Sum of Amortization</i>
1	100,000.00	833.33
2	99,166.67	833.33
3	98,333.33	833.33
4	97,500	833.33
5	96,666.67	833.33
6	95,833.33	833.33
7	95,000	833.33
8	94,166.67	833.33
9	93,333.33	833.33
10	92,500	833.33
11	91,666.67	833.33
12	90,833.33	833.33
13	90,000	833.33
<i>Value</i>	1,235,000	10,833.33
<i>Number of Month</i>		13
<i>Annual Average Value</i>		95,000
<i>Tax rates</i>		0,04
<i>Tax value</i>		3,325

Source: Compiled by author

TABLE 4. PAYMENT OF PROPERTY TAX FOR THE LAST YEAR

<i>Month</i>	<i>Residual value</i>	<i>Sum of Amortization</i>
1	10,000.000	833.33
2	9,166.670	833.33
3	8,333.330	833.33
4	7,500.000	833.33
5	6,666.670	833.33
6	5,833.330	833.33
7	5,000.000	833.33
8	4,166.670	833.33
9	3,333.330	833.33
10	2,500.000	833.33
11	1,666.670	833.33
12	833.330	833.33
13	0	0
<i>Value</i>	65,000.00	10,000.00
<i>Number of Month</i>		13
<i>Annual Average Value</i>	5.000.00	<i>Value</i>
<i>Tax rates</i>		0.022
<i>Tax value</i>	110.00	<i>value</i>

Source: Compiled by author

TABLE 5. DECLINING BALANCE

METHOD			
Year	Residual value at beginning of year.	Accrued annual depreciation	Residual value at beginning of year
1	100,000.00	15,000.00	85,000.00
2	85,000.00	12,750.00	72,250.00
3	72,250.00	10,837.50	61,412.50
4	61,412.50	9,211.88	52,200.63
5	52,200.63	7,830.09	44,370.53
6	44,370.53	6,655.58	37,714.95
7	37,714.95	5,657.24	32,057.71
8	32,057.71	4,808.66	27,249.05
9	27,249.05	4,087.36	23,161.69
10	23,161.69	23,161.69	0.00

Source: Compiled by author

TABLE 7. THE COMPARISON TABLE

View	Sum of Income tax	Sum of Property tax
1. Straight-line method of depreciation	7,800.75	3,325.00
2. Method of declining balance	7,358.63	3,237.50
3. Method of declining balance using varying tax rates	6,565.89	3,237.50

Source: Compiled by author

TABLE 6. CALCULATION OF PROPERTY

Month	Residual value	Sum of Amortization
1	100,00.00	1,250.00
2	98,750.00	1,250.00
3	97,500.00	1,250.00
4	96,250.00	1,250.00
5	95,000.00	1,250.00
6	93,750.00	1,250.00
7	92,500.00	1,250.00
8	91,250.00	1,250.00
9	90,000.00	1,250.00
10	88,750.00	1,250.00
11	87,500.00	1,250.00
12	86,250.00	1,250.00
13	85,000.00	1,062.50
Value	1,202,500.00	16,062.50
Number of Month		13
Annual Average Value		92,500.00
Tax rates		0.035
Tax value		3,237,50

Source: Compiled by author

TABLE 8. RESIDUAL VALUE AND ANNUAL DEPRECIATION

<i>Year</i>	<i>Residual value at beginning of year</i>	<i>Accrued annual depreciation</i>	<i>Residual value at beginning of year</i>
1	100,000.00	40,000.00	60,000.00
2	60,000.00	24,000.00	36,000.00
3	36,000.00	14,400.00	21,600.00
4	21,600.00	8,640.00	12,960.00
5	12,960.00	5,184.00	7,776.00
6	7,776.00	3,110.40	4,665.60
7	4,665.60	1,866.24	2,799.36
8	2,799.36	1,119.74	1,679.62
9	1,679.62	671.85	1,007.77
10	1,007.77	1,007.77	0.00

Source: Compiled by author

TABLE 10. PAYMENT OF PROPERTY TAX FOR THE LAST YEAR

<i>Month</i>	<i>Residual value</i>	<i>Sum of Amortization</i>
1	1,007.77	83.98
2	923.79	83.98
3	839.81	83.98
4	755.83	83.98
5	671.85	83.98
6	587.87	83.98
7	503.88	83.98
8	419.90	83.98
9	335.92	83.98
10	251.94	83.98
11	167.96	83.98
12	83.98	83.98
13	0.00	0.00
<i>Value</i>	6,550.50	1,007.77
<i>Number of Months</i>		13
<i>Annual Average Value</i>		503.88
<i>Tax rates</i>		0.035
<i>Tax value</i>		17.64

Source: Compiled by author

TABLE 9. PAYMENT OF PROPERTY

<i>Month</i>	<i>Residual value</i>	<i>Sum of Amortization</i>
1	100,000.00	3,333.33
2	96,666.67	3,333.33
3	93,333.33	3,333.33
4	90,000.00	3,333.33
5	86,666.67	3,333.33
6	83,333.33	3,333.33
7	80,000.00	3,333.33
8	76,666.67	3,333.33
9	73,333.33	3,333.33
10	70,000.00	3,333.33
11	66,666.67	3,333.33
12	63,333.33	3,333.33
13	60,000.00	2,000.00
<i>Value</i>	1,040,000.00	42,000.00
<i>Number of Months</i>		13
<i>Annual Average Value</i>		80,000.00
<i>Tax rates</i>		0.035
<i>Tax value</i>		2,800.00

Source: Compiled by author