State, public sector and theoretical prerequisites to a model of an "economy without taxes"

Vladimer Papava

Institute of Economics of the Georgian Academy of Sciences, Tbilisi, Georgia, and Minister of Economy of Georgia, Republic of Georgia

Abstract *The paper offers a new view of the role of state based on recognition of the economic ability of the state as a separate factor of production. Recognizing the state's economic ability is as a fifth factor of production and correspondingly gives indirect taxes the status of factor income as state profit. Direct taxes play two roles: they fund expenditure that is necessary for the production of public goods and at the same time they are in effect the latter's price. If we were to apply the mechanism of producing and purchasing private goods to public goods, direct taxes would be replaced by the state loans that are non-repayable, but yield interest, or by irretrievable loans with computed interest. In this case, which is illustrated by the budgetary equations in the model of an economy "without taxes", indirect taxes become analogous to state profit and direct taxes are replaced by irretrievable loans with computed interest.*

1. Introduction

Economic theory devotes a special place to problems of the private and public sectors. When we speak of the "market economy" in the narrow sense, we usually mean the private sector, because its functioning is specifically based on so-called market principles. The public sector, however, is not based on the market: the distribution of the results of its work, that is, public (and quasi-public) goods, is not manifested in the form of their direct purchase and sale, but the financing of their production is in the nature of a forcible act because the state forces households and corporations to pay the taxes that serve as its source.

Here, to all appearances, it is appropriate to examine the terminological question of the legitimacy of using term "state" instead of the term "government" that is often used in Western economic literature. It is easy to see that almost all the problems that the state sector must address go beyond the jurisdiction of the executive branch, requiring the participation of the legislative and, in some cases, the judiciary branches as well. For example, other things being equal, it is impossible to attain the legal base and social atmosphere needed for the market to function effectively without the intervention of the judicial branch.

Consequently, the government as an executive branch is not capable of "personally" resolving in full measure all the questions posed by the market system. It can therefore be considered more correct to say "state" instead of "government" when discussing the system's functioning.

In economic theory a most important place is given to the problem of taxes, though some economic schools have a negative attitude towards them and their role in the economic policy of state (Mill, 1976, ch. 2; Friedman, 1982; Friedman and Friedman, 1980; Canto *et al.* 1983). It is known that taxes are intended for state expenses, which is why practically nobody doubts the necessity of taxation. At best, the question of abolishing particular types of tax, e.g. taxes on profits, is discussed (Pechman, 1985, p. 53). Problems of taxation are more complicated for countries which are in a situation of transition to a market system (Tanzi, 1993).

The goal of the proposed paper is to substantiate the fact that the state's economic activity in reality is an internal, immanent part of the market. Based on such a formulation of the question, we can take a fundamentally different approach to the problem of forms and methods of state economic activity, in which for all practical purposes they do not differ in any way from the forms and methods of activity of other economic agents. This in turn requires rethinking the commonly accepted view of the market and the role of the state in the market system. In other words, the goal of the present paper is to substantiate the possibility of the public sector to function according to the principles of the private sector when, even if elements of force are present, they are minimal and concern only an insignificant part of society. We are talking about the construction of an economic model whereby the system of taxation may be replaced by a certain other system (which will be discussed below) that minimizes the element of force.

First of all, it is necessary to consider the results of state activity in the sphere of economic regulation, involving modification of our understanding of the market.

Section II of the paper defines the economic ability of a state, as a factor of production, on the basis of which indirect business taxes are considered to be the state profit; Section III sets out the theory of applying market mechanisms to the public sector; Section IV describes simple budgetary models for an economy "with" and "without" taxes; Section V presents one of the possible variants of borrowing of irretrievable loans with computed interest; Section VI consists of concluding remarks.

2. Economic ability of a state as factor of production and full market conception

There are two kinds of market in theory: free and real (or operative).

In manuals there is a detailed description of the main features typical of a free market; relations among entrepreneurs and relations between entrepreneurs and consumers, the coincidence of private and public interests, are regulated according to Adam Smith by an "invisible hand".

It is known that a free market has never existed in the world and cannot exist. Such a sterile economy (as absolute competitive space) is an abstraction, a theoretical structure necessary only for scientific research of market tendencies. A free market can only be a fragment of a real market.

In reality the market processes (typical of a free market) are distorted under the influence of monopolistic formations (both natural and unnatural), inflation, requirements of trade unions, errors of entrepreneurs due to insufficiency of commercial information, etc. All these and other distortions of market processes are qualified as market failure.

It is generally acknowledged that state interference in market processes aims at removing market failure. As a result of this, the real market is a regulated (by state) market.

According to views widely held in economic theory the activity of a state is not considered as an internal part of a market economy, but serves as a supplement to it. The state has to solve the economic problems, which cannot be solved by a market. Thus the economic activity of state can be considered as a forced supplement to the market. Such an approach, as Galbraith (1973, ch. 3) fairly observed, is characteristic of both contemporary main economic trends: neo-classic and neokeynesian theories. The difference is in attitude towards the level, forms and methods of state interference in the economy.

It is necessary to note that the mentioned goals of the state are not always reached; the more the interference of the state in the economy, the more specific behavior (e.g. lobbying or logrolling) it generates. It does not prevent market failure, but aggravates it. And it results in state failure.

Proceeding from the definition of public goods as non-competitive and non-excluded (e.g. Pindyck and Rubinfeld, 1989, ch. 17) Papava (1994, pp. 38-40) shows that everything done by the public sector in order to regulate the market is nothing but public or quasi-public goods. Besides national defense or public order etc., public goods include the absence or at least considerable reduction of external effects, the presence of necessary amounts of money in the economy, and abolition or at least considerable restriction of market power. Public goods also include the creation of a legal basis and public opinion to support and facilitate the market system, egalitarian goods[1] (Papava, 1993, pp. 58-60), economic stabilization, goods produced by public utilities etc.

It is necessary to note that within the public sector of country enterprises producing private goods may also be included. They are known as quasi-public goods. For simplification we will not include the latter in our following considerations. Thus, the whole environment of goods can be divided into two main groups: public goods and private goods. Proceeding from the fact of who is the producer of these goods, the economy is divided into two sectors: private sector (producing private goods) and public sector (producing public goods).

According to the theory of factors of production, the receipts obtained from goods sold are distributed among factors of production.

Contemporary economic theory recognizes four factors of production: land, capital, labor, and entrepreneurial ability. Corresponding incomes for them are rent, interest, wages and entrepreneurial profit (e.g. McConnell and Brue, 1990, ch. 2). Besides these incomes the price of goods includes depreciation and indirect taxes. The latter is considered in economic theory as unearned state income (McConnell and Brue, 1990, ch. 9) and this in turn partly calls into

question the integrity of the theory of factors of production which divides the price of a good into income-producing factors: there arises a type of income (indirect business taxes) that does not have an economic basis. In order to overcome this contradiction, we must answer the question: have all factors of production and the corresponding incomes been taken into account?

To all appearances, the answer to this question would be in the affirmative, if all interrelations among economic agents were determined on the basis of the "laissez-faire" principle, characteristic of the free market and of pure competition, and in the absence of state economic activity. In reality, however, this is how matters stand.

If an entrepreneur undertakes the initiative to include land, capital, and labor in the unified production of goods or (performance of) a service, the state undertakes the initiative of regulating the given entrepreneurial activity within the framework of the national economy. If an entrepreneur organizes the production of certain goods or services, then the state organizes the production of the entire mass of goods and services within the framework of the national economy. If an entrepreneur makes decisions (uses innovations, assumes risks in the process of running his own business), the state makes decisions on the main avenues of developing the entire national economy, uses innovations, and assumes risks in its own economic policy.

Much in the development of the modern economy and business depends on which political forces are in power within the state. For example, the assumption of power by conservatives in the USA and the UK in the late 1970s and early 1980s promoted the growth of economic activity in those countries, while 70 years of communist rule in the former USSR doomed the market to a predominantly underground existence and brought the country to a state of deepest crisis.

It can thus be concluded that the economic ability of the state is the fifth factor of production (Papava, 1993, 1994)[2].

Notwithstanding the cited parallels, the similarity between entrepreneurial ability and the economic ability of the state is purely external; but internally there is a fundamental difference between them.

The entrepreneur deals both with material resources (land, capital) and with human (labor) resources, which he unites in a single production process; the state, however, primarily unites human resources – entrepreneurs – within the framework of the entire national economy.

By making basic decisions in the conduct of his business, the entrepreneur determines the course of activity of a specific firm. The decisions made by the state influence the strategy of development of all firms making up the national economy.

As an innovator, the entrepreneur develops the production of new products and introduces new technologies and new forms and methods of business organization. The state as an economic innovator, on the other hand, primarily introduces new forms and methods of financial-credit and tax policy, forms new institutional structures, and so forth.

In the process of operating his business, the entrepreneur assumes risk and, depending on how justifiable the risk is, receives an appropriate "reward"; bankruptcy may be the most "lamentable" variant of the development of events. The state, which guides the economy, also assumes risk, but of a somewhat different nature; the state does not have the right to such "bankruptcy", when it is subject to self-destruction (although history contains a few examples even of this). And the receipt of as much economic profit as possible is the most significant reward to the entrepreneur for uninsured risk, whereas the reward for persons exercising state power is victory in elections in order to retain power for the next term.

Thus, if the state's economic ability acts as a factor of production, it should bring in a certain amount of revenue. This revenue is what is currently called indirect business taxes. As we know, these taxes raise the price of a product – a price, which includes incomes, based on factors of production: land, labor, and entrepreneurial activity. Accordingly, we treat this price increase as revenue of the state, that is, as the fifth factor of production. Recognition of the state's economic ability as a factor of production in turn makes it possible to give the status of state profit (by analogy with entrepreneurial profit) to indirect business taxes.

In qualifying indirect business taxes as factor income, a question may arise about the state's receiving direct taxes, in addition, in exchange for its economic ability. In reality, direct taxes are part of other factor incomes and are subtracted from them after they are collected by the state. Unlike direct taxes, indirect business taxes are placed at the disposal of the state directly in exchange for the services reviewed above; indirect business taxes, like other factor incomes, are primary, while direct taxes are derivative incomes.

Proceeding from this, in our further considerations, "taxes" are taken to mean "direct" taxes.

As distinct from McConnell and Brue (1990, ch. 2), Fischer *et al.* (1988, ch. 8) consider only three factors of production: land, capital and labor. Under such an approach, the understanding of "profit" is changed, as is often mentioned in economic literature (e.g. Babeau, 1985). But it does not influence at all the understanding of the economic ability of a state as a separate factor of production and establishing state profit as a corresponding income.

It is necessary to note that it is wrong to equate the economic ability of the state with the public sector. The difference is the same as between entrepreneurial ability and the private sector. It is also essential to emphasize that only the economic ability of state is the factor of production and not state itself, the analogy here being with entrepreneurial ability as the factor of production, but not the entrepreneur himself. The economic ability of the state is only one of the features of the state, just as entrepreneurial ability is only one of the features of an entrepreneur.

As is known, the entrepreneur is an owner of produced private goods who receives a corresponding income by selling these goods.

The situation is the same with public goods: they belong to the state, which sells them and receives the corresponding income.

There is a considerable difference between the selling of private and public goods. Obtaining the first is usually made individually, whereas the second is made by a group of people. In spite of this, the payment for the public goods obtained is also made individually in the same way as that for obtaining the private goods. Namely, direct taxes are the price for public goods and these taxes are paid individually by households' corporations.

To produce public goods, it is necessary to meet certain expenses. The public sector possesses three main sources of these expenses; taxes, state loans (e.g. state bonds) and money emission. In more or less normally functioning states taxes are the most important element among these three sources.

Thus, taxes on the one hand are used to cover expenses of production of public goods and on the other hand they constitute the price for the consumption of these goods.

It is noteworthy that if taxes were not levied it would be impossible to produce the public goods necessary for society.

Production of private goods is not the same as receiving benefits for a consumer; the benefits are obtained after buying the goods. In contrast to this it is sufficient only to produce public goods in order to obtain corresponding benefits. This can be explained by the absence of interdependence between consumption payment and the actual consumption of these goods. Non-exclusion and non-competitiveness of public goods creates a real possibility for their consumption by certain people without paying corresponding taxes. Special tax inspections have to fight against this. As a result of this, levying taxes becomes an act of violence.

As to taxation, the system under which everybody is interested in paying taxes, rather than trying to dodge them, is considered to be the best. For this, taxpayers must see their economic interests as lying with the payment of taxes.

If we manage to create a model of such a market, where there is no coercive taxation, and the functioning of a public sector closely approaches that of the private sector, the model can be called a full market (Papava, 1994, p. 46).

In contrast to free and regulated markets, the economic activity of a state is an internal part of a full market.

3. Theoretical principles to the functioning of the public sector in the system of the full market

As was already mentioned, taxes fulfil two functions: the financing of expenses for the production of public goods and payment for their consumption. To understand how correct the merge of these two functions is, in the present system of taxation, let us consider how these functions are related in the production and consumption of private goods.

Let us say that a certain person "A" decides to produce some private goods but has not enough money. In this case, he addresses a person "B" and borrows a certain amount of money to organize the production of these public goods. For the use of this money, "A" during the whole period of the loan has to pay

"B" a certain interest. When the loan period has expired, "A" returns the borrowed money to "B".

If "B" has a certain demand for the produced goods by "A", in order to buy them "B" will have to pay "A" the price for these goods.

Thus "B" lends money to "A" for the production of some private goods and receives interest for it; at the same time "B" buying the given private goods pays their price to "A". It is necessary to note that the given relation between those producing and consuming private goods is a multiple repetition of the simple action of a market system.

If the public sector wants to be a part of a market it needs to adopt the considered relationship between the producers and consumers of private goods in respect to the production and consumption of public goods.

Drawing a parallel with the above-mentioned example, the public sector should be considered as person "A" producing public goods. Whereas the whole society should be considered as person "B" consuming public goods.

Money emission creates its own funds within the public sector. Besides, the funds of the public sector are also state profit (i.e. the indirect taxes), in the same way that undistributed profits are the funds of corporations.

High money emission can have well-known and grave consequences for an economy. Because of this, state profit and money emission in a normally functioning economy cannot provide for the necessary expenses of the public sector to produce public goods. That is why the public sector uses state loans (e.g. state bonds) and taxation. According to state loans the public sector acts exactly the same way as person "A" of the above example, whereas levying direct taxes is nothing but a government racket (Papava, 1994, p. 46). As the public sector lacks its own funds to produce public goods, it should not expropriate but borrow a part of the income from households and corporations following market laws; that is, a public sector should act as person "A" of the above example.

Thus, following market principles, the public sector has to borrow from households and corporations instead of levying direct taxes. As households and corporations are at the same time the consumers of public goods they have to pay for their consumption, that is to say, act as person "B". The public goods are also the result of economic production in the same way as private goods and they (public goods) have a corresponding price which the consumers pay through taxation and loans (Studenski, 1961, ch. 10).

So direct taxes taken as debts and also as state loans fulfil simultaneously two functions: for financing expenses of the production of public goods and payment for their consumption. A merge of these functions is conditioned by the fact that finishing the production and starting the consumption of public goods coincides in time, it being different from private goods for which there is a time lag between the end of production and the start of consumption. In other words, the produced public goods are consumed immediately without being bought by consumers.

In spite of a great similarity between direct taxes taken as debts and state loans there is a considerable difference between them. Public goods are

consumed not only by the private but also by the public sector. Consequently consumption of a part of public goods has to be paid for by the public sector. That is why state loans are the money borrowed by the public sector from the private sector to pay for consumption of public goods by the public sector. Thus, this money is to be returned to the private sector. Direct taxes, being the payment for consumption of public goods by the private sector, should not be returned. Nevertheless, interest has to be paid for these taxes because they are initially (before transformation of these taxes into payment for public goods consumption by the private sector) borrowed by the public sector to cover expenses for the production of public goods. The implication is that there is no room for coercive taxation in a full market system where the public sector is an internal part of this market. Direct taxes are replaced by state loans that are non-repayable, but yield interest, or by irretrievable loans with computed interest in a full market system, and, together with state profit, are used to finance expenses of the production of public goods.

4. Simple models of a budget for "economy with and without taxes"

Let us consider the main equations of an existing state budget system.

State budget expenditure includes government payments to purchase commodities and services (G), to cover the value of state bonds when payment becomes due ($\underline{B}$), to repay the interest (rB) on state bonds (B) (where r – is the rate of interest). Thus, state budget expenditure is equal to $G + \underline{B} + rB$.

State budget revenue is formed by total tax revenues (T).

Excess expenses of the state budget over revenues are covered by loans in the form of state bonds ($\overline{B}$); and as a result we get the following equation:

$$T + \overline{B} = G + \underline{B} + rB. \tag{1}$$

As a rule, in practice, $\overline{B} > \underline{B}$, or $\Delta B = \overline{B} - \underline{B} > 0$. Consequently, (1) may be transformed as follows:

$$T + \Delta B = G + rB. \tag{2}$$

In (2) $B = B_0 + \Delta B$, where B_0 is the value of state bonds for the beginning of a fiscal year.

Total tax revenues T can be subdivided according to types of taxation: total revenues of individual income tax (T_h), total revenues from tax on corporation profits (T_p), total revenues from taxes and installments to social insurance funds (T_e) and total revenues from indirect taxes (T_b).

Consequently:

$$T = T_h + T_p + T_e + T_b.$$

Inserting (3) into (2) we get:

$$T_h + T_p + T_e + T_b + \Delta B = G + rB. \tag{4}$$

Total tax revenues in the budget are formed of deductions from total factor incomes.

Thus, total tax revenues and contributions to social insurance funds are deducted from total wages (W) and total entrepreneurial profit ($\prod$). According to the Budget of the US Government (1986, p. 318), for example, both households and corporations pay the same tax rate (t_e) from wages actually paid; so the maximum wage (W_e) levied by this tax is determined. Consequently:

$$T_e = t_e W_e + t_e \Pi_e = 2t_e W_e, \tag{5}$$

where $W_e = \Pi_e$ and $W_e > W$.

In order to calculate the total tax revenues from a corporation's profit, first of all the taxable profit is determined. Here, in a simplified case, this value is $\Pi_e - t_e \Pi_e$, because the firms can always transfer their share of social insurance into expenses. If t_p is the tax rate on a corporation's profit, the corresponding total tax revenues into budget will constitute:

$$T_p = t_p (\Pi - t_e \Pi_e). \tag{6}$$

Total revenues from individual income taxes are formed from all total factor incomes received by households, and in particular: total wages with the deduction of contributions into social security funds ($W - t_e W_e$), total interest (R), total rent (L) and total dividends ($q_h(1 - t_p)(\Pi - t_e \Pi_e)$, where q_h- is a dividends share paid to households in net profits (i.e. in profits after taxation of firms). If t_h is a rate of income tax, then:

$$T_h = t_h[W - t_e W_e + R + L + q_h(1 - t_p)(\Pi - t_e \Pi_e)]. \tag{7}$$

In our case indirect taxes, without damaging common character, are limited by value added tax, which consists of factor incomes and depreciation deductions (D). Let t_b be a value added tax rate. Then:

$$T_e = t_b[D + W + R + L + \Pi - t_e \Pi_e]. \tag{8}$$

(4) – (8) constitute the main correlations of the state budget.

Of all state expenses used to purchase goods and services the most notable are social security expenses (E) provided by installments to the budget from taxes and contributions to social insurance funds, e.g.

$$T_e = E. \tag{9}$$

It is also necessary to mention that the revenue received from taxes and contributions into the social security fund cannot be spent for other purposes.

Let us consider the simplest model of an "economy without taxes", taking into account the main components of the above-mentioned relation between persons "A" and "B".

For simplification, let us assume that the public sector produces only one (aggregated) type of public good.

The public sector spends (G) of both its own and borrowed funds to produce the given public goods. The first is government profit (Π_g^p) paid by corporations; the second is an increase in loans in the form of state bonds (ΔB) and irretrievable state loans with computed interest (C). All these funds are used to cover G and should provide interest payments on state bonds (rB) and on irretrievable state loans (R_c). Thus,

$$C + \Delta B + \Pi_g^p = G + rB + R_c. \tag{10}$$

It should be noted that (10) in the conditions of an "economy without taxes" has the same meaning as (4) in an economy with taxes.

The result of expenses (G) is the production of the public goods mentioned above, by a public sector. In contrast to the overwhelming majority of private goods, public goods cannot be measured in any way except in terms of value. Let $P(X_s)$ be the value of the public goods produced.

The value of the public goods will be:

$$P(X_s) = F_s + D_s + L_s + W_s + \Pi_s + rB + R_c + \Pi_g^s \tag{11}$$

where: F_s is current expenses, D_s – depreciation deduction, L_s – rent, W_s – wages, Π_s – entrepreneurial profit, Π_g^s – state profit (paid by public sector), are calculated in accordance with production of the given public goods.

It should also be noted that entrepreneurial profit is included, as a rule, in the value of public goods produced by utility plants.

It was mentioned above that completion of production and starting of consumption of public goods is a simultaneous process. In other words, incurrence of expenses on public goods production is almost simultaneous with their purchase. Because of this, expenses on production and the purchase of public goods generally coincide. In addition, to purchase public goods, the public sector has at its disposal state profits after production of these goods, which is paid by the public sector for the exploitation of the economic ability of the state as a factor of production.

Consequently:

$$C + \Delta B + \Pi_g^p + \Pi_g^s = P(X_s). \tag{12}$$

Inserting (10) and (11) into (12) we receive

$$C_l = F_s + D_s + L_s + W_s + \Pi_s. \tag{13}$$

If we take into consideration that

$$\Pi_g^p = T_b,$$

and comparing (4) and (10) we will have

$$C - R_e = T_h + T_p + T_e. \tag{14}$$

Irretrievable loans with computed interest and corresponding interest incomes can be divided into three parts: loans and interest – paid and received by households (C_h, and R_{ch}), corporations (C_p, and R_{cp}), and loans and interest paid jointly by both households and corporations having in aim the creation of egalitarian goods (C_e, and R_{ce}).

Then, if

$$C_h - R_{ch} = T_h, \tag{15}$$

$$C_p - R_{cp} = T_p, \tag{16}$$

$$C_e - R_{ce} = T_e, \tag{17}$$

(15) will be fulfilled.

Taking (17) into consideration we will have

$$C_e - R_{ce} = E \tag{18}$$

instead of (9).

If in an economy with taxes the main budget correlations are (4) and (9) then for an "economy without taxes" they are (10) and (18). The interdependence of these correlations is defined by equations (14) to (17).

The question of the mechanism of correlation between irretrievable loans with computed interest and these interest incomes is left open.

5. Borrowing mechanism of irretrievable loan with computed interest

The mechanism of borrowing irretrievable loans with computed interest does not depend on who (households or corporations) lends them or for what purposes (e.g. creation of egalitarian goods) they are lent. Our consideration can therefore be limited by a common case for C and R_e.

According to (14) - (17) irretrievable loans with computed interest include corresponding interest incomes, that is

$$C = C_r + R_c, \tag{19}$$

where C_r is the computed part of interest on an irretrievable loan.

If r_c- is a rate of interest on an irretrievable loan, and $\tau-$ the number of years for the interest payment of the irretrievable loan, then using the well known procedure of discounting we receive

$$C_r = \frac{C}{(1 + r_c)^\tau}. \tag{20}$$

Interest computation on C_r is carried out according to a compound interest formula and as a result in τ years

$$C_r(1 + r_c)^\tau = C.$$

Inserting (20) in (19) we receive

$$R_c = \frac{C((1+r_c)^\tau - 1)}{(1+r_c)^\tau} \tag{21}$$

Let us consider one of the possible variants of a mechanism of borrowing for an irretrievable loan with computed interest.

In order to stimulate economically households and corporations to give the irretrievable loans with computed interest, it seems expedient to adopt the principles of progressive taxation. In particular, let us consider the following system.

During a definite period of time, the amount of irretrievable loans with computed interest and the level of an interest rate should be constant. The period of interest payment should obviously equal the period of state bonds in the form of medium-term securities, that is – medium-term bills and bonds with a time of redemption from one to ten years. We should not exclude the possibility that the period of interest payments on irretrievable loans could be more, say 30 years – a period relevant to long-term obligations.

In each succeeding period, the amount of an irretrievable loan with computed interest should be correspondingly longer and the level of interest rate higher than the previous one. Every citizen getting income for the first time should pass through all these periods in turn, starting with the first: the shortest one. The same applies to newly created corporations, the difference being that in this case irretrievable loans with computed interest, and the level of interest, will be different, and also the number of years in the above mentioned periods of time.

If a person inherits a certain amount of irretrievable loan, this amount should be summed up (the procedure for this requires special elaboration) with the accumulated amount of the same loan.

The same approach is applied in the case of a merger between two or more corporations.

For clarity, let us consider the following conditional example (Table I).

	First period (2 years)	Second period (3 years)	Third period (4 years)	Fourth period (5 years)
Annual amount of irretrievable loan with computed interest (in dollars) (C)	80	96	120	160
Annual interest rate (r_c)	3	3.5	3.8	4
Compounded value of every dollar for a period of 10 years $((1+r_c)^\tau)$	1.344	1.411	1.452	1.480
Discounting coefficient $(1/(1+r_c)^\tau)$	0.744	0.709	0.689	0.676
Part of irretrievable loan on which interest is computed (in dollars) (C_r)	59.52	69.06	82.68	108.16

Table I.
Irretrievable loan with computed interest (conditional example)

Let the conditional example in Table I concern a person. Let us assume that he has not inherited irretrievable loans. Having received an income for the first time in his life, the person has to provide to the public sector an irretrievable loan of $80 for the first year. The example assumes that the period of the loan is ten years, meaning that there will be service charges on the loan over ten years. These $80, as mentioned above, will give rise to service charges over ten years. At an annual interest rate of 3 per cent, the interest calculation for every dollar, according to the compound interest formula, will amount to 1.344 over ten years; inverse quantity of which is the coefficient of discounting. According to (20), if we multiply the $80 by the given discount factor we obtain the part of the irretrievable loan (equal to $59. 52) on which the service is charged. Thus, having given $80 to the public sector as an irretrievable loan, the person, according to (21), will get back $20.48 during ten years; 1.79 (59.52 x 0.03) during the first year, 1.84 ((59. 52 + 1.79) x 0.03) during the second year etc.

In the second year the person has to give the public sector $80 in irretrievable loan on the same conditions. In the third year he will have to pay $96; out of which the interest at the higher annual interest rate – 3.5 per cent – will be calculated on $68.06. It will last for three years. In the sixth year he will have to pay to the public sector $120 as irretrievable loan, with the interest at 3.8 per cent calculated on $82.68 over ten years. It will last for four years. Starting from the tenth year he will have to pay to the public sector $160 in irretrievable loan over five years, with the interest at 4 per cent calculated on $108.16.

The above example covers only four periods of time and 14 years in total, but it can be extended to subsequent periods, taking into consideration the increasing values of corresponding indices.

It should be stressed once more that interest is computed only on a part (though significant) of the irretrievable loan, after the whole annual amount is paid to the public sector.

It is expedient that the computed interest, say for ten years, be accumulated on specific fixed deposits so that the lender could draw money not earlier than in five (or more) years. Though interest on irretrievable loans is computed during a definite period of time (in our case – during ten years) the interest on a sum of money accumulated on the above-mentioned specific accounts is not time limited. If for any reason (not connected with natural disasters, wars, etc.) the lender is unable to pay the public sector its due money for a given year under the requirements for an irrecoverable loan (in full or in part) the sum should be covered by percentage deductions from the mentioned fixed deposits. Besides, in order to overcome the economic interest in evading of payments, under an irretrievable loan it is possible to introduce special penalties, by which interest income on the mentioned special fixed accounts calculated according to the compound interest formula will be reduced (written off) to the value of the sum of money unpaid to the public sector. If the accumulated interest deductions from the mentioned fixed accounts do not cover completely the annual sum of unpaid money under irretrievable loan requirements to the

public sector, the money accumulated as loan to a given moment should be written off (Papava, 1997). As a consequence, it will reduce the volume of future interest incomes.

The way the system is organized means that the lender will have a predisposition to pay the public sector the money due under irretrievable loan requirements completely and at the proper time. This is so because, first, he will want to receive rising interest payments, and second, he will not want to lose the accumulated interest or the possibility of receiving in future other interest income because of the writing off of a part of the irretrievable loan with computed interest as a consequence of the mentioned penalties.

This system of financing public sector expenditure differs greatly from the existing one: first of all because the lender replaces the tax-payer.

If the level of taxes paid depends on annual income there is no relation between income and the sum of money paid to the public sector under an irretrievable loan. The public sector determines for lenders both the growing annual amount of irretrievable loans and interest rates. It should stimulate them indirectly to increase their income in order to receive even higher interest payments. Thus we can see that the state does not interfere with such an intimate sphere as the incomes of households and corporations.

Incentives for beginning lenders to pay a definite sum of money as an irretrievable loan are still very weak, because the interest rate is not high, and the level of possible penalties is not so significant either. That is why the activity of beginning lenders should be under supervision of a special financial inspection (just like today's tax inspection), though this inspection is considerably weaker than that of today's tax inspection. It is conditioned by the above-mentioned difference between tax-payers and lenders.

Starting from the point when the interest rate of the irretrievable loans becomes higher, and especially when it exceeds the net rate of loan interest, the incentives to pay the public sector the money required under the irretrievable loans scheme completely and in due time become effective. By that time lenders must already have a significant amount of money both on irretrievable loans and corresponding fixed deposits on which increasing interest is compounding.

The effectiveness of the system of irretrievable loans will raise the interest rate on irretrievable loans, taking into consideration the inflation rate; that is, r_c will become a real interest rate. In this case the interest rate income on irretrievable loans considering the inflation rate (R'_c) will exceed $R_c = C - -C_r$ that is R.

The scheme of financing government expenses offered in this article, with significant amounts of money accumulated on special fixed deposits, practically solves the problem of tax evasion. Different methods of tax evasion are widely used (Svenson, 1983; Feyerabend, 1985), so that governments do not receive significant amounts of money.

According to (13), irretrievable loans with computed interest include the interest in themselves; if at the same time we assume that direct taxes are replaced by irretrievable loans with computed interest we can conclude that the

problem of state debt (Mankiw, 1992, ch. 16) is considerably modified – the issue needs special study. It should also be noted that the Ricardian approach to budget deficit (Barro, 1989) does not have a direct relationship to the "economy without taxes".

I am far from claiming that the proposed system of irretrievable loans with computed interest is irreproachable. Its improvement or even elaboration of an alternative system is a subject of further research.

6. Conclusions

The main aim of this paper has been to substantiate the argument that the state's economic ability is an intrinsic and important part of a market economy. In a real market economy, the state plays a role, which is analogous to entrepreneurship.

Standard economic theory recognizes four factors of production and their corresponding incomes: land and rent, capital and interest, labor and wages, entrepreneurial ability and profit. In addition to these incomes, the price of goods includes depreciation and indirect taxes; the latter are normally considered to be unearned state income. Recognizing the state's economic ability is as a fifth factor of production and correspondingly gives indirect taxes the status of factor income as state profit.

Direct taxes play two roles: they fund expenditure that is necessary for the production of public goods and at the same time they are in effect the latter's "price". If we were to apply the mechanism of producing and purchasing private goods to public goods, direct taxes would be replaced by the state loans that are nonrepayable, but yield interest, or by irretrievable loans with computed interest. In this case, which is illustrated by the budgetary equations in the model of an economy "without taxes", indirect taxes become analogous to state profit and direct taxes are replaced by irretrievable loans with computed interest.

One of the possible variants of the mechanism of borrowing irretrievable loans with computed interest based on the scheme:

- During a definite period of time the level of interest rate should be constant.

- The period of interest payment should obviously equal the period of state bonds in the form of medium-term securities.

- In each succeeding period, the amount of irretrievable loan with computed interest should be corresponded by longer and the level of interest rate higher than the previous one.

- Everybody getting income from the first time should pass through all these periods in turn, starting with the first: the shortest one.

- Compounded value of interest of irretrievable loan is an internal part of latter.

- Interest is computed only after the whole annual amount of the irretrievable loan is paid.

- The computed interest, say for ten years, be accumulated on specific fixed deposits so that the lender could draw money not earlier than five (or more) years.

- If for any reasons (not connected with natural disasters, wars, etc.) the lender is unable to pay its due money for a given year under the requirements for an irretrievable loan (in full or in part) the sum should be covered by percentage deductions from the mentioned fixed deposits.

- In order to overcome the economic interest in evading of payments under irretrievable loan, it is possible to introduce special penalties.

- The lender will have a predisposition to pay the money under irretrievable loan requirements completely and at the proper time, because he will want to receive rising interest payments and he will not want to loose the accumulated interest or the possibility of receiving in future other interest income because of the wring off of a part of the irretrievable loan with computed interest as a consequence of the mentioned penalties.

In this system of financing public sector expenditure the lender replaces the tax-payer.

The proposed system of irretrievable loans with computed interest can be improved, or even elaborated as an alternative system.

Notes

1. Egalitarian goods is a social security achieved by overcoming poverty and decreasing inequality of incomes. Creation of this good is based on the development of social insurance and benefits to war veterans and the unemployed, a state program of free medical aid, and state housing construction, etc.

2. This approach has been reflected by Griffiths and Wall (1995, p. 338).

References

Babeau, A. (1985), *Le Profit*, Presses Universiés de France, Paris.

Barro, R.J. (1989), "The Ricardian approach to budget deficits", *Journal of Economic Perspectives*, Vol. 3 No. 2, pp. 37-54.

Budget of the United States Government (1986), Fiscal Year 1987, Washington DC.

Canto, V.A., Joines, D.H. and Laffer, A.B. (1983), *Foundations of Supply-Side Economics*, Academic Press, New York, NY.

Feyerabend, J. (1985), *Fluchtburgen des Geldes, Wo die Reichen sich verstecken*, Econ Verlag, Düsseldorf-Wien.

Fischer, S., Dornbusch, R. and Schmalensee, R. (1988), *Economics*, McGraw-Hill, New York, NY.

Friedman, M. (1982), *Capitalism and Freedom*, Chalidze Publications, New York, NY.

Friedman, M. and Friedman, R. (1980), *Free to Choose*, Harcourt Brace Jovanovich, New York, NY.

Galbraith, J.K. (1973), *Economics and the Public Purpose*, Houghton Mifflin Company, New York, NY.

Griffiths, A. and Wall, S. (Eds) (1995), *Applied Economics*, Longman, London and New York, NY.

McConnell, C.R. and Brue, S.L. (1990), *Economics, Problems and Policies*, McGraw-Hill, New York, NY.

Mankiw, N.G. (1992), *Macroeconomics*, Worth Publishers, New York, NY.

Mill, J.S. (1976), *Principles of Political Economy*, Book 5, Augustus M. Kelley Publishers, Fairfield, CA.

Papava, V. (1993), "A new view of the economic ability of the government, egalitarian goods and GNP", *International Journal of Social Economics*, Vol. 20 No. 8, pp. 56-62.

Papava, V. (1994), "The role of the state in the modern economic system", *Problems of Economic Transition*, Vol. 37 No. 5, pp. 35-48.

Papava, V. (1997), "On the possible functioning of the social sector according to the principles of the private sector (taxation aspect)", *Problems of Economic Transition*, Vol. 40 No. 2, pp, 75-95.

Pechman, J.A. (Ed.) (1985), *Options for Tax Reforms*, Washington DC.

Pindyck, R.S. and Rubinfeld, D.L. (1989), *Microeconomics*, Macmillan Publishing Company, New York, NY.

Studenski, P. (1961), *The Income of Nations, Theory, Measurement and Analysis: Past and Present*, New York University Press, New York, NY.

Svenson, B. (1983), *Economisk kriminalitet*, Tholin/Larsson/Gruppen, Goteborg.

Tanzi, V. (Ed.) (1993), *Transition to Market: Studies in Fiscal Reform*, IMF, Washington DC.