Introduction

In this paper we form an opinion about the ways taxation could motivate the savings and investments of the country in question.

The Minister of Finance's policy aims at boosting the economy's growth through the activation of the savings – investments, which in turn will create new jobs and consequently reduce the unemployment rate while the inflation rate should be controlled.

At first sight it should be mentioned that considering country's available macroeconomic indicators, *i.e. a slow average growth rate of 1%, an unemployment rate of 15%, and an inflation of 5%,* as well as *its demographic characteristic of the ageing population and low birth rate*, we undoubtedly reach to the conclusion that we face a pure performing economy that suffers from structural problems.

With the information in hand we are unable to assess whether the country's economy is an open or a closed one. To this respect, there are items of exploration - mainly related to the equitation or not of savings to investments - which we feel that should provide a formal analysis by referring to both types of economies.

Taxation

Why to pay taxes

Undoubtedly, the Government requires 'revenues' in order to fund the Public sector expenditure. In their book, Parkin & King (1992) argue that Government sector expenditure can be mainly divided into the following four categories: Expenditure on goods and services, Subsidies, Transfer payments and subsidies, and Debt interests.

On the other hand, the main sources of the revenues needed are:

- Taxes
- Royalties: *Proceeds reserved by the government for permitting other economic agents to exploit and make use of public property.*
- Money creation: *An inflation tax*
- Borrowing: *From individuals, firms, and institutions (domestic or abroad)*
- Profits and interest: *On government run business and loans made by other governments.*
- National insurance contributions: *Amount paid by the employers to the public in order to insure themselves through the government against possible illness, unemployment, and retirement.*

Although, we will appreciate the aforementioned alternative ways through which public expenditure can be funded, **taxation** is the main source of income.

Depending on which of the aforementioned figures (revenues and expenditure) is the greater we can define the financial **surplus** as when revenue exceeds expenditure and the financial **deficit** as when expenditure exceeds the income. The surplus or deficit is usually presented as a percentage to the GDP.

Tax base - direct and indirect taxes

Depending on the specific time and from the particular ideology of each country, taxes are levied either on income and / or on expenditure.

Taxes on income, include :
(Direct taxes)

- The personal income tax: *The sum of income from various sources is calculated and then taxed in total*
- The corporation tax: *Mostly is a percentage on company profits*
- Taxes on Capital: *Taxes on property, Capital gain taxes, etc*

Taxes on expenditure, include:
(Indirect taxes)

- Value added tax (VAT)
- Taxes on tobacco, alcohol, and petrol.

One of the traditional criteria used for the classification of taxes as direct and indirect has been the ability of shifting the tax to another person. In practice we can consider as direct taxes those on income and property and those on expenditure as indirect.

It can be argued that developed counties are mainly based upon direct taxes, i.e. individual and corporate taxation. On the contrary, the developing countries are based mostly on indirect taxes, i.e. VAT.

Tax rates and tax income

It can be argued that in the short run, an increase on income tax rates (up to a specific point) will in turn increase the government's revenues and as a consequence reduce the financial deficit[1].

However, should continue the increase of tax rates after a specific point, the tax revenues will start to decrease due to the substitution effect.[2]

The above is illustrated by the Laffer[3] curve (figure T1), which draws the relationship between income tax and taxation rate.

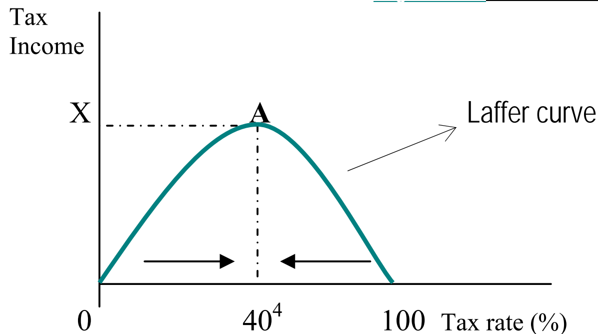
Laffer suggested that as the tax rate increases (zone 0-40), the tax income increases as well (from 0 to X), but up to a maximum point (A) that represents the optimum tax rate where the maximum amount of tax income could be collected. After the specific point, should continue the tax rate to increase (zone 40 –100), the tax revenue will start decreasing (from maximum X to 0). In other words, we have the emergence of the substitution effect. A lack of incentives would lead to a fall in income and therefore a fall in income tax. The end – point is undoubtedly a tax rate of 100 %, where no one would be willing to work and so income tax would reach the zero point.

[1] In the long run, a high tax rate is without doubt a disincentive for investment – savings that most probably will lead to an increase of financial deficit.

[2] Individuals due to their reduced disposal income will start to substitute leisure time for additional income since they will be unwilling to work harder than before

[3] Dr. Arthur Laffer was an advisor to President Reagan of USA in the early 1980s but despite that, he become quite well known through his 'curve' *Time magazine* included him among 'The Century's Greatest Minds' (Greater Talent Network Inc, 1999-2002)

Figure T1. The Laffer curve



How tax incentives influence investments

The private investment behaviour is primarily influenced by the maximization of the profit. In other words, when carrying out an appraisal of a prospective investment, the extent of corporate tax, on net profits, is of major importance. . Thus 'pure' net profit *although reduces the income shown on financial statements,* sounds welcomed when a firm considers payable taxes.

To this regard, it would be to the firm's benefit should allowed by the tax legislation to deduct the maximum cost items and consequently to 'present' the minimal taxable income.

Specifically, some items that influence the investment through taxation could be the following:

- **Accelerated depreciation**
  Allows the firm to a faster write-off of its assets and as a consequence reduces the taxable income.
- **Various tax credits.**
  For those firms that will be activated into specific sectors of the economy or regions of the country that deem significant for national economic policy.
- **Reduced cost of capital**
  For example, the amount of taxable interest or lease payments.

How tax system affects savings

Why we save

It can be argued that there are three main theories explaining the reason of savings:

- **Life cycle theory**. Savings enable a higher amount of future consumption. Extra amounts could be directed to those needs that have to be covered in a later time. Most people save when they are young to 'face' the old age years, or due to a future target, e.g. buying a country house.
- **Precautionary motive**. Individuals feel uncertainty if their current ability to work will remain the same in the future.

[4] A 40 % is a randomly price of the tax rate.

From this point of view, they also save in order to deal with possible increases of their future expenditure or possible illness.

- **Bequest motive**. It is also very common for people to save in order to leave cash or an asset to their children[5].

Taxation influence savings

Consumption (C) and Savings (S)

We know from the Economic theory that total income (Y) either will be consumed (C) or will be saved (S):

Y= C+S

We also know that disposable income (Yd) is the gross income (Y) minus the taxes(T)

Yd = Y-T

When a proportional income tax is introduced, we will anticipate *first* a reduction in savings because of a lesser amount of disposable income and *second* an increase on C (that is a decrease in savings) because the interest income is also taxed and people's motive for savings is diminished.

Consequently, tax produces the following two effects:

- **Income effect**. The income reduced by the burden of the tax[6].
- **Substitution effect**. The relative price of future consumption is raised[7].

The aforementioned effects, although explain in theory the two ways that tax affects income and as a result savings, it does not offer a definite reply as to what is the final effect of taxation upon savings.

It is also worth mentioning that empirical studies suggest that the income effect is stronger than the substitution, proposing that the marginal propensity to save[8] (mps) defines the effect of taxation into savings.

CONCLUDING REMARKS

In this assignment we initially gave some definitions regarding taxes and then we described the ways taxation influences savings and investment.

In the following analysis we will tackle the ways the government of hypothetical economy in question could utilize the power of fiscal policy (mainly taxation) to stabilize the economy. In other words to boost the low economic growth (1% on a 15-year average) through the increase of investments, that in turn will reduce the high rate of unemployment (12% pa), keeping the inflation under control.

We further take under consideration the ageing population of the country than sooner or later will create serious problems to the analogy between workforce and people in retirement. To this respect we strongly support the private retirement pension system analyzed below.

[5] This is customary especially in Greece

[6] Creating a parallel shift of the budget line in the proportion (1-t), t is a proportional income tax.

[7] When taxing the interest income people usually react with increase of consumption since missing the motive for savings.

[8] The MPS is the change in savings resulting from a change in the disposable income

Before proceeding to our proposals on each specific field, we would like to point out the lack of information related to the following:

- Public deficit or surplus

Based on available information, (economic indicators given) we assume that the country is suffering from a public deficit.

- Open[9] or closed economy[10]

We will refer in a formal basis to both types of economy, dealing with the differences in some macroeconomics figures.

- Member of an economic union

If the country in question is for instance a member of the E.U.

Undoubtedly, the economy in question should 'furnish' incentives (*meaning less taxes*) to the savings-investments in order to boost growth, decrease unemployment rate, control inflation and deal with the problem of the ageing population.

On the other hand, assuming that the economy is facing a public deficit, what is needed is an increase of public revenues or a decrease of public expenditure in order the deficit to be reduced.

To this respect we wish to highlight that should the decrement of the public sector's deficit is precedence or an imperative condition of the E.U[11] (assuming that the country is a current member of the European Union) the government, inter alia, would be forced to an immediate tax rates increase in order to increase revenues, rather than reducing public expenditure or proceed to a restructuring of the public sector that requires a substantial period of time.

However, empirical studies have shown that immediate frugality measures (increase of taxes, stable wages, etc) usually lead the economy to a recession, which in turn decreases public revenues resulting to a further increase of the deficit. Thus, the measures should be gradually applied in order to be economically effective.

In addition to the aforementioned, it will also should be noted that a tax rates increase is always a counter-incentive for the attraction of investors, due to a decrease in investment profit.

To this respect, the Minister of Finance, instead of increasing taxes, it should consider the implementation of other alternatives methods that will reduce either the public sector's deficit or the public debt, such as:

1. Privatization and selling of public companies.[12]
2. Cutback of some public sector's expenditure.
3. Increase of the productivity in the public sector.
4. Implementation of the new technology.
5. Effective management of public assets.
6. Reduction of tax evasion, which in turn will increase public sector revenues and as a consequence will lead to an increase of national savings.
7. Reduction of bureaucratic processes.
8. Introduction of a stable tax system.
9. Stimulation of growth on a regional level with the creation of information centers of entrepreneurial growth, etc.

[9] A self-sufficient economy that has no links with any other economies

[10] An economy that maintains links with other economy where foreign investment, exports, and imports can play a substantial role in the economic life.

[11] A current problem that face many European countries.

[12] In Portugal the Portugal Telecom was sold at € 365 million almost the 0,3 % of the GDP.

INVESTMENTS

Assuming that the economy is an open one, the importance of foreign direct investment (FDI) is of great significance for the country's growth. On the other hand, in the case of a closed economy, private and national savings is the only available tool for investment funding.

Government fiscal policy (taxation) could influence the amount of both local and foreign direct investment.

In what follows, we refer in detail to some items -suitable incentives- that could be attractive to potential investors, especially the FDI (that most probably remain at low levels).

1. Accelerated depreciation[13]

Accelerated depreciation is a method that allows firms to a faster write-off of their assets and as a consequence affects the taxable income by reducing it, which in turn encourages investment.

The smaller the depreciation period the larger the benefit for the company.

In a recent article (Ritholtz 2004) accelerated depreciation is referred as essentially an intriguing corporate tax cut and as one of the most important changes in tax legislation passed by the Bush Presidency.

Since the country faces an inflation rate of about a 5% pa, the implementation of the accelerated depreciation creates an additional value because as we know, inflation causes fictitious profits (higher replacement value of an asset) that are taxed as well. Therefore, by reducing the number of years over which an asset could be depreciated (generous tax depreciation provisions) we actually compensate the additional tax burdens caused by inflation and as a consequence will be valued by the prospective investors.

2. Various tax credits

The implementation of a tax credit program (reduced taxes) motivates investments. At the same time, it is also the primary means of directing investments towards exports or those activities - services (sectors of the economy) or regions of the country (regional economic development) that are considered from the Minister of Finance as the most significant for economic growth.

In addition, since competitiveness is generally highly valued as regards corporate development, a significant tax reduction in the expenses related to research and development (R&D) should be applied. Moreover, a tax reduction should be offered to those firms that hire registered unemployed people. Since the cost will be reduced, an incentive for potential investments will be added and unemployment will be benefited.

[13] Accelerated depreciation is especially popular for writing-off assets that most probably will be replaced before the end of their useful life.

3. The cost of capital

Undoubtedly the cost of capital is of great importance when assessing an investment plan.

For example, lets assume that a firm is considering to finance a new project partly through a banking loan (debt), instead of issuing shares (equity) under the following fixed terms and conditions:

a. The tax policy allows firms to deduct interest payments from the taxable income
b. The interest rate is 4%
c. The after tax profits are € 100
d. The corporate tax rate (T) stays at 40 %

the following calculation will show the real interest that the company will pay.

Tax shield

4% **.** (1- T) = 4% **.**(1-0.4) = 4% **.** 0.6 = **2.4%** -- *which is the real interest rate.*

€ 100 (Profits) – € 40 = € 1,000 **.** 4% (Interest) = € 60 **.** 40% (tax rate) = € **24**(Tax bill) that represents the **2.4 %** of the loan amount of € 1,000.

As a result, **if the amount of interest is taxable, it reduces the real interest rate**. In other words, the cost of capital is reduced, which in general has a positive impact upon investment.

The government should also consider the lease payments to be taxable. For instance, when a firm is using the *sell and lease back* for some of its assets, liquidity is benefited.

4. Mergers and acquisitions (M&A)

As stated in an article (Ruegger 1999 partner of Simpson Thacher & Bartlett Llp) the worldwide M&A volume for announced transactions in 1998 was close to $2.5 trillion, in 1997 over $1.5 trillion, and in 1996 over $1 trillion.

Certainly, the firm's main target when using the M&A is the enhancement of market share. However, it can be argued that possible tax incentives can also act as a considerable motive for a firm to proceed to an activity in question.

For example, the legislation may allow the 'transfer' of some tax credits to the buying company or offers a reduced tax rate.

Reduction of corporate taxes (through any course of action described earlier), followed by a developmental low that may grant further incentives and subsidies[14], will lead to the increase of investments. This will contribute to a decrease of unemployment (through the creation of new job opportunities) and a general promotion of economic growth.

[14] For example: In various items of cost (depreciation, wages, etc), in specific areas of the country, in specific sectors of the economy that the government wants to promote or the subsidy on interest payments and leasing.

SAVINGS – AGEING POPULATION

1. Individuals savings

As previously stated, due to income and substitution effects there is no definite answer as to what is the finally effect of taxation upon savings. Consequently, a further assessment of the relative size of the two aforementioned effects should me made.

Empirical studies have suggested that the income effect is **stronger** than substitution effect, proposing that the marginal propensity to save (MPS) defines the effect of taxation into savings.

The MPS is the change in savings that comes out from changes in the disposable income. For example, if out of an income increase of £2000, an amount of £1600 is spent and another £400 is saved, the marginal propensity to save would be £400 / £2000 = 0.2.[15]

One dollar of additional income will lead to additional consumption of a lesser than a dollar amount. The proportion of additional consumption to additional income is called marginal proportion of savings (John Maynard Keynes).

To this respect, we could argue for a reduction on the various forms of savings yield taxes (deposits, government bonds, etc). If this reduction (means higher interest rates) is followed by a low inflation, then a considerable increase on savings would be noticed.

It is worth mentioning that the introduction of taxes into interest rates leads to lower interest rates. Thus, the impact of taxation upon savings is directly related to the interest elasticity of savings, which by definition measures the change in savings caused by a change in interest rates.

2. Firms savings

As regards the influence of taxation into corporate savings, we could argue that the dividends pay out would be also reduced due to reduced profits (as a result of taxation). This means less disposal income for the individuals resulting to a decrease of their savings.

However, a drastic cut in taxation would also influence undistributed corporate profits. This would release recourses for productive investment.

It can be argued that a cut in the corporate tax rates would have a positive effect to both individual and corporate savings with further influence into investment activity.

3. Pension and savings

It is common ground that savings can take many forms. These forms include not only the amount deposited in banks, but also social security, as well as public and private pensions.

The relevance to taxation lies to people's contribution to a public pension system, through taxation. In essence, what people are actually doing is to save in order to receive additional income in a latter time.

It should be stressed that tax revenue should not be directed to cover other needs of the economy - *e.g. to serve past dept*. In such a case, total savings of the economy will not be increased.

[15] Web: www.RevisionGuru.co.uk

4. Ageing population

Considering the fact that population is ageing, it can be argued that the deficit would be increased, because the workforce that contributes to the social security system constitutes a gradually smaller proportion of the retired people who live of their pensions[16].

In order the government to deal with the prospective problem[17] it should consider to grant tax incentives (zero tax or generous tax reduction) to private retirement pension policy holders [18]. Thus, by saving now (saving pension schemes) individuals will have the additional income when they retire. Consequently, through the provision of this incentive, the government could easier proceed to pension decreases, an option, that perhaps would be forced to consider, due to the existing deficit.

Quite recently, Edward M. Gramlich (a FED Board of Governors member) has argued that when the baby boomer generation will be retired, after a decade or so, US economy will face serious problems, due to the small amount of national savings, which is expected to shrink even further, when demographical trends will change.

Moreover, in many countries the social insurance system is currently under restructuring. In this framework, a globally accepted system is argued to combine the following:

- Basic state pension
- Occupational pension
- Personal pension-savings

The problem of ageing population as regards savings differs between a closed and an open economy. As previously stated, in the case of an open economy, foreign direct investments (FDI) can also participate to total country's investments. In other words, it is possible that government deficit can be partly decreased due to FDI activity.

On the contrary, when the economy under investigation is a closed economic system, there is no doubt that savings (S=I) is the only ' source' of investments.

Thus, if our hypothetical economy is a closed one and the government wishes to reduce its deficit by issuing government bonds (at a high yield in order to be attractive) the Crow*ding out effect* may occur; an increase on interest rates (simply because the government borrowing increases the demand for loadable funds, with the supply of saving to remain the same), which will cause a cutback in private investments[19].

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[16] According to Eurostat the ratio between retired people and workforce will be reduced from 1 /2,6 (Today) to 1/1,4 (2040)

[17] [17] Since the 80s in many OECD countries the public pension systems were inadequate to cover the future retirements

[18] Recently, the Greek Minister of Finance referred to a 50% higher discount offered to corporate insurance schemes (including the retirement pension) and to a 10% offered to individuals accordingly.

[19] This is due to the increased cost of capital. The final effect is depending on the interest elasticity of investment (the sensitivity of investment to the raised interest rate)

This in turn will not reduce unemployment[20], while the rate of GDP growth will be decreased. On the other hand, the increase of interest rates will be added on the corporate cost and inflation will rise.

GROWTH AND TAXATION

As previously argued, a reduction of taxes on capital income will increase savings and investments, which in turn will boost economic growth, resulting to the desirable deficit and unemployment decreases.

In what follows, an excerpt of Professor Richard Vedder's speech is presented. It is titled "REMARKS TO INTERNATIONAL TAXPAYERS CONFERENCE: Prosperity or Stagnation?"(May 17, 2002)

Economic growth is clearly related to tax levels. Ireland has the lowest overall tax burden of any major country, and the highest rate of economic growth over the past decade. Sweden's high taxes, by contrast, have declined in a relative economic sense.

However, we are not quite sure if the incentive of tax reduction will always influence the savings to such a considerable extent in order to overcome other factor's influence-- mainly that of uncertainty.

In conclusion, we wish to point out that whatever tax incentives offered, empirical studies have shown that should be followed by a stable and clear economical - political environment that will whittle the uncertainty (precautionary motive).
For example, the incentives should be remained unchanged for a considerable period of years enabling the prospective investor to feel stability in the taxation policy. It is also of great importance the reduction of the bureaucracy that also consists a disincentive for the investment.

What an investor needs is not incentives but the disappearance of disincentives (*Xenofon Zolotas(1904-2004) - ex. Greek Prime Minister, 1989).*

[20] Unless the public will direct a part of the revenue received from the bonds to new investment and consequently creates new jobs.