Tax Burden on Investment at Shareholder Level: Calculating the Effects from Double Taxation in Macedonia

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The struggle against the enlarged public debt has finally ended with widespread rise of mandatory tax rates across the European countries and worldwide. Surprisingly, the Republic of Macedonia (RM) has managed to preserve its tax policy relatively unaffected, despite the negative trends - but only temporarily. Recent announcements made by the new government to raise the tax rates in near future echoed very unpleasantly across the business community, declaring the ending, in that context, of the era of low tax rates. The work in this paper is intended to measure the level of tax burden at the shareholder level in Macedonia over the period from 2006 to 2017, which is known as the "golden period" of low tax rates. Relevant measurements used for the purpose of this research are: the cost of capital, the effective marginal tax rate (EMTR) and the effective average tax rate (EATR). The applied measurements are correspondent to the fundamental methodology according to the Devereux-Griffith approach, recommended by the EU Commission. This analysis and its result are complementary to our previous findings about the effective tax rates at corporate level. Hopefully, they will reconfirm and extend the general picture of the RM as one of the most tax favorable country for investment in Europe…..so far.

Keywords

Corporate Income Tax (CIT), Personal Income Tax (PIT), double taxation, integrated tax system, cost of capital, Effective Marginal Tax Rates (EMTR), Effective Average Tax Rates (EATR), Republic of Macedonia (RM).

1. Introduction

Recently, we have determined that Republic of Macedonia has the lowest effective tax rates at corporate level in addition to all EU countries, and as a result, the country is set to be one of the most favorable investment locations in EU. This is a product of continuous reforms reaching their pick in the period 2006 to 2012. For example, the CIT rate at the beginning of the independence was established at 30% and it was in force until the end of 1995. In the period 1996-2006 the rate was lowered at 15%. Then, the concept of flat tax rate (corporate and personal income tax base) was introduced in 2007 when a tax rate of 12% was implemented in January, in 2008 the rate was additionally reduced at 10% and in 2009 a split corporate income tax rate was ultimately implemented [1]. The purpose of the CIT reform was to develop a consumption-based corporate income and personal income tax, influenced by the chronic deficit of capital needed for support of the economic growth and development in future.

The goal of this research is to measure the possible effects on investment from the shareholders point of view, as a result of the legislative rules implemented in the observed period from 2006 to 2017. The proposed methodology applied in this work is based on the Devereux-Griffith approach (1999), as recommended by the EU Commission. Relevant measurements include: the cost of the capital, the effective marginal tax rate (EMTR) and the effective average tax rate (EATR) at shareholder level, which means that the effect from the personal taxes must be integrated in the analysis together with the effects from the corporate taxes. For that purpose, the effective tax rates will be calculated on 3 (three) levels: zero-rate shareholder level, top-rate shareholder level with no qualified or substantial participation and top-rate shareholder level with qualified participation according to the national tax provisions. Following the introduction, the article firstly elaborates about the inevitable integration between the CIT and PIT in the process of corporate taxation. After that, the paper contains short presentation of the proposed methodology and the derived parameters in the case of Macedonia, finishing with full analysis of the calculated effective tax rates at shareholder level. Hopefully, the analysis will support the thesis that Macedonia has really improved the investment environment over the last decade.

2. Integration between the corporate and personal income tax

Our first series of calculations were conducted only from the view of the corporation, and as a result we managed to present the estimates of effective tax rates only at corporate level. This approach in the calculation requires total abstraction from the effect of all personal taxes. But, corporate taxation is very complicated matter and vary much often depends on the cross-effects from the personal taxation. The reason for that lies in the fact that the corporate tax base (i.e. the corporate income) cannot be limited only at the corporation observed as a form of a legal entity. Usually, after the initial taxation at corporate level, corporate profits are distributed to the shareholders in a form of dividends, capital gains or interest payments, and are subject to additional taxation at personal level.

Firstly we would like to notice that the process of taxation of corporate profit on itself, might result with some interesting effects emerging from its nature. One of them is the privileged treatment of debt as a source of finance, as a result of the usual and widely excepted treatment of interest expenses. Normally, since interest payments are in fact tax deductible from the corporate income tax base, debt source of finance is considered as tax preferred compared to the equity source of finance. This is the reason why, it is thought for the CIT, actually to be considered as a tax on the return on equity. The last triggers unfavorable behavior of the corporation, to use more borrowed capital, thus increasing the risk of bankruptcy and insolvency of the firm. Similarly, retained earnings are more preferred to new equity issues since capital gains are usually taxed upon realization or eventually exempted from taxation when reinvested. This commonly creates better position for the old mature companies as they possess more abundant accumulated reserves, on the contrary to the young emerging enterprises.

There is some solid evidence that the integration of CIT and PIT could relieve the corporate tax differences, as well, and produce a higher neutrality between debt and equity as opposite to the previous examples. According to the OECD [2], [3], [4], [5], the following tax systems are considered as neutral with certain capacity to eliminate the difference between debt and equity: the full integration tax system (FIT), the dual income tax system (DIT), the allowance for corporate equity tax system (ACE), the allowance for shareholder equity tax system (ASE), the comprehensive business income tax (CBIT) etc. For example, the FIT system treats the corporation as a pass through entity and allocates all the corporate profit at shareholder level, where it is subject to personal income tax. For the CIT already paid on distributed profits, the stockholders will be granted with a tax credit in amount of the gross dividends received from the corporation. As a result, tax treatment between debt and equity will be ultimately equalized. Another great example is the CBIT system. This regime successfully eliminates the need for integration between the corporate and personal taxes on

equity by creating restrictions on the possibilities for deduction of the interest expenses. In fact, interest expenses are no longer deductible from the corporate income tax base and at the same time are exempt from taxation at personal level. The result is neutrality and indifference between debt and equity. Similar effects are determined within the other tax systems mentioned above..

According to Devereux & Griffith: "There are a variety of approaches that countries have adopted to try and alleviate this "double" taxation through the integration of the personal and corporate income tax systems" [6]. They are summarized in 3 (three) different categories: imputation systems, classical systems and split rate system. Essentially, the purpose of the imputation tax system is to effectively offset a portion (partly integrated tax system) or the entire corporate income tax (fully integrated tax system) levied on distributed profits against the shareholders tax liability. This could be realized in a form of tax credit of alternatively, in a form of tax exemption. Under the classical tax system, distributed profits are taxed at corporate level and again at personal level, which means that there are no tax reliefs available. The third option is the split rate system, which implements two different (split) mandatory tax rates, one to distributed earnings, and the other to retained earnings. Usually, there are 2 (two) known different strategies concerning the split rate system. First, is the strategy to apply a lower rate on distributed profits which will serve to compensate for the personal tax paid on dividend income. This approach in the policy might restore neutrality between debt and external equity. The other strategy is to levy a lower split rate on retained accumulated earnings instead on distributed profits. The aim of this strategy is to generate incentives for reinvestment of retentions, and therefore, reduce the chances for their consumption in a form of dividend distributions. It is very common to the countries with consumption-based CIT systems, for example, such as Estonia and Macedonia, as it stimulates savings and investment in corporations. Across the system's ability to equalize the treatment of debt and retained earnings, this strategy will additionally create preferences to retentions over external equity.

According to Cnossen [7], the integration of corporate income tax and personal income tax could be found at the dividend relief system (alternatively, the dividend deduction system), which can take 2 (two) forms: the dividend relief system at shareholder level; and the dividend relief system at corporate level. The first one resembles to the imputation tax system, and it's designed for reduction of the burden on equity-financed investment for the resident shareholders. The second concept permits partial or full deduction of the gross dividends paid from taxable corporate profits (the corporate tax base). This will have strong impact on the foreign investors as it leaves them to escape from taxation in the source country. As a result, foreign investors benefit from the dividend relief system at corporate level, ultimately inducing foreign investment in the host country [8].

As we can see from the text presented above, the integration between corporate and personal taxation might take different forms and different concepts concerning the different policy goals. From this perspective, tax authorities in the Republic of Macedonia have made great efforts to restructure and redesign the CIT system and produced some simple, interesting, and above all, brave solutions, for example, such as the concept of flat tax rates in direct taxing, and the split tax rate system. In addition we calculate the impact of the implemented measures on the effective tax rates at shareholder level, as they have the right properties for evaluation of the integrated effect from corporate and personal taxation.

3. Implementation of the relevant methodology in the case of Macedonia

We should notice again, that the calculation of the effective tax rates in this article considers the taxes at shareholder's level, meaning that all personal tax rates are included in the process. The assumptions built in the methodology chosen for the purpose of calculation, are presented in Table 1 from below. On the other hand, Table 2, integrates all the elements of the Macedonian corporate income and personal income tax code essential for determination of the effective tax rates.

Table 1: Assumed economic parameters

Parameters:	Symbol	Value
True economic depreciation rate	δ	
- industrial buildings		3,1%
- equipment (machinery)		17,5%
- intangibles		15,35%
- financial assets		0%
- inventories		0%
Real interest rate	r	5%
Inflation rate	π	2%
Pre-tax rate of return	p	20%

Source: Devereux & Griffith (2002)

Table 2: Tax code parameters

Relevant domestic tax parameters:	Symbol	Value
Capital allowances (straight-line method):	φ	
- industrial buildings (L=20 years)		5%
- equipment (machinery) (L=7 years)		14,28%
- intangibles (L=5 years)		20%
- financial assets (L=0 years)		0%
- inventories (L=0 years)		0%
Treatment of inventories (average cost method)	v	0,5
Treatment of financial assets	v	1
Corporate tax rate (2006, 2007, 2008, 2009-2017)	t	15%, 12%, 10%, 0%
Split corporate tax rate on distributions (2009-2017)	t^d	10%
Personal tax rates (zero-rate shareholder level):		
- on interest income (2006-2017)	m^i	0%
- on dividend income (2006, 2007, 2008-2017)	m^d	0%, 12%, 10%
- on capital gains (2006, 2007, 2008-2012, 2013-2017)	z^*	10,5%, 8,4%, 7%, 0%
Personal tax rates (top-rate shareholder level nonqualif.):		
- on interest income (2006-2017)	m^i	0%
- on dividend income (2006, 2007, 2008-2017)	m^d	7,5%, 12%, 10%
- on capital gains (2006, 2007, 2008-2012, 2013-2017)	z^*	10,5%, 8,4%, 7%, 0%
Personal tax rates (top-rate shareholder level qualified):		
- on interest income (2006-2017)	m^i	0%
- on dividend income (2006, 2007, 2008-2017)	m^d	7,5%, 12%, 10%
- on capital gains (2006, 2007, 2008-2017, 2013-2017)	z^*	10,5%, 8,4%, 7%, 0%
Proportion of accruals-equivalent capital gains income	λ	10%
Imputation tax credit rate on dividends paid (2006-2017)	c	0%
Real estate tax rate (property tax rate)	e	0,1%

Source: CIT code and Nomenclature of depreciation (2006-2017)

First, little explanation of the undergoing tax reform and the tax code parameters presented above.

Symbol t, represents the **nominal (statutory) corporate income tax rate** and e the **real estate tax rate**, both payable in the period in which the investment is undertaken. The CIT rate at the beginning of the observed period was established at 15% in 2006. Then, a rate of 12% was implemented in January 2007, in 2008 the rate was additionally reduced at 10% and in 2009 a **split corporate income tax** rate was ultimately implemented. The purpose of the CIT reform was to develop a consumption-based corporate tax system, influenced by the

chronic deficit of capital which needed to support the economic growth and investment.[1] The real estate tax rate (or the property tax rate) in Macedonia, is usually applied for the legal entities only in case of acquiring building structures with a rate of 0,1%.

The data for **the personal income tax rates** show that the *tax rate on interest income m^i* was 0 during the whole period. *Mandatory capital gains tax rates* were 15% in 2006, 12% in 2007 and 10% in the period 2008 to 2012. During the time, a deduction of 30% was allowed on the capital income tax base, resulting with effective mandatory rates of 10,5% in 2006, 8,4% in 2007 and 7% in the period 2008-2012. In 2013, the rate was abolished ($z^* = 0$). The proportion of *accruals-equivalent capital gains income λ* assumes constant value of 10% (0,1), meaning that corporate shares have a mean holding period of ten years [9]. In Macedonia, the *statutory personal tax rate on dividend income m^d* was 15% in 2006. After that, the rate was established at 12% in 2007 and at 10% in the period 2008 to 2017. From 1996 up until 2006, the **imputation corporate tax system** was in force allowing a tax credit or alternatively, an imputation rate on dividend distributions in amount of 50% from the personal income tax liability. Considering that the adequate mandatory liability rate was 15% in 2006, this produced value for *c* of 0,075 (0,15 * 0,50 = 0,075).

Next, the **methodology of Devereux and Griffith** [10] is explained additionally.

In order to develop an effective average tax rate, Devereux and Griffith had to scale the difference in the net present value of the project in the presence and absence of tax by the net present value of the economic rent .This means that the EATR is defined as an expression of the level of tax burden for a different level of profitability. We've seen that in absence of personal taxes EATR is defined as:

$$(1) \qquad EATR = \frac{R^* - R}{p/(1+r)} ;$$

but in presence of the personal taxes, as it is important for this research, EATR could be measured through the expression:

$$(2) \qquad EATR = \frac{R^* - (1-z)R}{p/(1+r)} ;$$

where we already know that: *p* – assumed pre-tax real rate of return, *r* - real rate of return and R^* - economic rent of the project in abcense of tax, measured as:

$$(3) \qquad R^* = \frac{p-r}{1+r} ;$$

The new term in the equation is *z*, which is known as the effective personal capital gains tax rate or with other words, accruals-equivalent capital gains tax rate is defined as:

$$(4) \qquad z = \frac{\lambda z^*}{\lambda + (1-m^i)i} ;$$

This expression explains that the value of effective capital gains tax rate depends from the personal tax rate on interest income m^i, which in the case of Macedonia is always zero, the statutory capital gains tax rate z^* and the proportion of accruals-equivalent capital gains

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[1] Consumption-based tax models assume that the tax burden of corporate income is generally targeted to its shares that are intended for consumption. The corporate income intended to be saved or reinvested is targeted basically with lower tax rates or exempted from taxation.

income λ. Symbol i represents the nominal interest rate found from the expression: $i = (1 + r)(1 + \pi) - 1$, and yields value of 0,071 or 7,1%.

Term R from equation (2), is known as the economic rent of the project in presence of tax:

$$(5) \qquad R = \frac{\gamma}{1+\rho}\{(p+\delta)(1+\pi)(1-t) - vt\pi - [\rho+\delta(1+\pi)-\pi](1-A) - (1+\rho)e\} + F^{NE} + F^{DE};$$

where the new symbols are: δ - true economic depreciation rate, π - inflation rate, t - nominal corporate income tax rate, and e - real estate tax rate, the last both payable in the period in which the investment is undertaken. In the previous article we mentioned that the real estate tax rate (or the property tax rate) in RM, is usually applied only in case of investment in buildings with a rate of 0,1%.

In case of calculation of EATR at shareholder level, personal taxes are relevant for the shareholder's discount rate ρ defined as:

$$(6) \qquad \rho = \left(\frac{1-m^i}{1-z}\right)i;$$

Tax discrimination variable γ, from expression (7), as already shown, is used to measure tax discrimination between new equity and distributions. If we define the new terms: m^d - personal tax rate on dividend income, z and c - tax credit rate allowed for dividends paid, then we may write for γ:

$$(7) \qquad \gamma = \frac{(1-m^d)}{(1-z)(1-c)};$$

In Macedonia, the statutory personal tax rate on dividend income m^d was 15% in 2006, but since a 50% deduction was allowed, the effective mandatory rate was established at 7,5%. This rate was relevant in 2006 only for the top-rate shareholders with nonqualified and qualified participation. For the zero-rate shareholder the rate was 0%. After that, the rate was established at 12% in 2007 and at 10% in the period 2008 to 2012, without any differences between the shareholders. Values for z are derived from equation (4), while for c they are always zero, since there is no available imputation tax credit rate on dividends paid. In order to integrate the impact of the established split corporate rates in 2009, since retained profits are not taxed ($t = 0$) and corporate profits are taxed only upon distribution with a 10% tax rate ($t^d=0,1$), the tax discrimination variable from the relevant year are additionally altered as:

$$(8) \qquad \gamma^{2009-2012} = \frac{(1-t^d)}{(1-t)}\gamma^{2008};$$

Just to recall for the terms $vt\pi$ and A from equation (5). Essentially, the first one reflects the cases of taxation of inventories and financial assets and its value depends from the method of valuation for tax purposes. In the RM, the treatment of financial assets implies that $v = 1$, while the treatment of inventories requires value of 0,5. The second parameter A represents the net present value of tax depreciation allowances for the different assets. In the RM, tax depreciation rate for the buildings is 5%, for the equipment (machinery) 14,28% and for the intangibles 20%, measured as an equally weighted average rates in each asset group (equivalently, the lengths of depreciation periods are 20, 7 and 5, consequently). For the financial assets and inventories, the tax depreciation rates are 0. The NPV of tax depreciation allowances for the straight-line depreciation method, is measured as:

$$(9) \quad A = t\phi \frac{(1+\rho)^L - 1}{\rho(1+\rho)^L};$$

where L is the length of the depreciation period (expressed in years) and φ is the depreciation rate for the different assets allowed for tax purposes.

The financial constraints of investment depend largely on the source of finance, according to Devereux & Griffith [11]. In the case of reinvestment of retained earnings, this variable always generate value of zero (F^{RE}=0). When there is a case of new equity finance, the financial constraints variable F^{NE} is expressed as:

$$(10) \quad F^{NE} = -\frac{\rho(1-\gamma)(1+e)}{(1+\rho)};$$

and in the case of debt finance investment, the variable F^{DE} is measured as:

$$(11) \quad F^{DE} = \frac{\gamma(1+e)(\rho - i(1-t))}{1+\rho};$$

Finally, the effective marginal tax rate is recognized as in its most familiar from of:

$$(12) \quad EMTR = \frac{\tilde{p} - s}{\tilde{p}}, \quad (12)$$

where $p\tilde{}$ is the cost of capital (pre-tax rate of return on investment) established as:

$$(13) \quad \tilde{p} = \frac{(1-A)\{\rho + \delta(1+\pi) - \pi\} + \nu t\pi + (1+\rho)e}{(1+\pi)(1-t)} - \frac{F(1+\rho)}{\gamma(1+\pi)(1-t)} - \delta;$$

while s represents the post-tax rate of return on savings:

$$(14) \quad s = \frac{[(1-m^i)i - \pi]}{(1+\pi)};$$

Table 3 from below, summarizes the derived input parameters used for calculation of the effective tax rates in the observed period 2006-2012.

Table 3 Derived input parameters, 2006-2012

Parameter	Symbol	2006	2007	2008	2009/2012	2013/2017
Economic rent in absence of tax	R^*	0,1429	0,1429	0,1429	0,1429	0,1429
Nominal interest rate	i	0,071	0,071	0,071	0,071	0,071
Post-tax rate of return	s	0,05	0,05	0,05	0,05	0,05
Shareholder's discount rate	ρ	0,0756	0,0746	0,0740	0,0740	0,0740
Effective capital gains tax rate	z	0,0614	0,0491	0,0409	0,0409	0,00
Tax discrimination variable	γ	1,0654	0,9254	0,9384	0,8445	0,8445
Financial constraints variable	F					
- retained earnings	F^{RE}	0	0	0	0	0
- new equity issue	F^{NE}	0,00460	-0,00518	-0,00425	-0,01072	-0,01072
- debt	F^{DE}	0,01512	0,01044	0,00883	0,00236	0,00236
Allowances	A					
- buildings	A^{bui}	0,0761	0,0614	0,0514	0	0
- equipment (machinery)	A^{equ}	0,1132	0,0909	0,0759	0	0
- intangibles	A^{int}	0,1212	0,0972	0,0811	0	0
- financial assets	A^{fin}	0	0	0	0	0
- inventories	A^{inv}	0	0	0	0	0

Source: Author's calculations

4. The basic tax parameters at shareholder level

These measurements include the cost of capital, EMTR and EATR. The European Commission insists that the relevant parameters from the official Devereux and Griffith methodology should be expressed at 3 levels: at zero-rate shareholder level, top-rate qualified and top-rate non-qualified shareholder level. This need is adapted to the taxing practices of the majority European countries. In the Republic of Macedonia, since the implementation of the "flat" tax system in 2006, the things are very much simplified since the brackets of the personal income tax are effectively diminished and the new code didn't recognize any differences between these 3 categories of shareholders. Except for the year of 2006, when the tax rate of dividend income was 0% for the small "zero" rate-shareholders, ever since the domestic tax system implies only a single rate for the distributions of capital income. This means that the taxing regime for these 3 categories of shareholders are equalized in the period after the year of 2006, producing identical tax rates for the zero-rate, top-rate qualified and the top-rate non-qualified shareholder.

Table 4: The Cost of capital at shareholder level, 2006-2017 (%)

Shareholder	Zero--rate					Top-rate (qual. & nonqual.)				
Year	2006	2007	2008	2009/ 2012	2013/ 2017	2006	2007	2008	2009/ 2012	2013/ 2017
Buildings (mean)	*5,55*	*5,81*	*5,67*	*5,74*	*5,64*	*5,78*	*5,81*	*5,67*	*5,74*	*5,64*
- retained earnings	6,32	6,04	5,86	5,40	5,10	6,32	6,04	5,86	5,40	5,10
- new equity issue	5,78	6,70	6,39	6,73	6,73	6,45	6,70	6,39	6,73	6,73
- debt	4,56	4,68	4,76	5,10	5,10	4,56	4,68	4,76	5,10	5,10
Equipment (mean)	*5,68*	*5,88*	*5,71*	*5,64*	*5,54*	*5,90*	*5,88*	*5,71*	*5,64*	*5,54*
- retained earnings	6,44	6,11	5,90	5,29	5,00	6,44	6,11	5,90	5,29	5,00
- new equity issue	5,91	6,78	6,43	6,63	6,63	6,57	6,78	6,43	6,63	6,63
- debt	4,68	4,76	4,80	5,00	5,00	4,68	4,76	4,80	5,00	5,00
Intangibles (mean)	*5,39*	*5,66*	*5,54*	*5,64*	*5,54*	*5,61*	*5,66*	*5,54*	*5,64*	*5,54*
- retained earnings	6,16	5,89	5,73	5,29	5,00	6,16	5,89	5,73	5,29	5,00
- new equity issue	5,62	6,56	6,26	6,63	6,63	6,28	6,56	6,26	6,63	6,63
- debt	4,39	4,54	4,63	5,00	5,00	4,39	4,54	4,63	5,00	5,00
Financial assets (mean)	*5,99*	*6,12*	*5,91*	*5,64*	*5,54*	*6,21*	*6,12*	*5,91*	*5,64*	*5,54*
- retained earnings	6,76	6,35	6,10	5,29	5,00	6,76	6,35	6,10	5,29	5,00
- new equity issue	6,22	7,02	6,63	6,63	6,63	6,88	7,02	6,63	6,63	6,63
- debt	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
Inventories (mean)	*5,82*	*5,97*	*5,80*	*5,64*	*5,54*	*6,04*	*5,97*	*5,80*	*5,64*	*5,54*
- retained earnings	6,58	6,22	6,00	5,29	5,00	6,58	6,22	6,00	5,29	5,00
- new equity issue	6,05	6,88	6,52	6,63	6,63	6,71	6,88	6,52	6,63	6,63
- debt	4,82	4,86	4,89	5,00	5,00	4,82	4,86	4,89	5,00	5,00
Retained earnings (mean)	*6,45*	*6,12*	*5,92*	*5,31*	*5,02*	*6,45*	*6,12*	*5,92*	*5,31*	*5,02*
New equity issue (mean)	*5,92*	*6,79*	*6,45*	*6,65*	*6,65*	*6,58*	*6,79*	*6,45*	*6,65*	*6,65*
Debt (mean)	*4,69*	*4,77*	*4,82*	*5,02*	*5,02*	*4,69*	*4,77*	*4,82*	*5,02*	*5,02*
Overal mean	***5,69***	***5,89***	***5,73***	***5,66***	***5,56***	***5,91***	***5,89***	***5,73***	***5,66***	***5,56***

Source: Author's calculations

Table 4 shows the estimated values of **the cost of capital** in Macedonia in the period 2006-2017. Technically speaking, these are the relevant discount rates used for calculation of the effective tax rates. The results indicate that in the most cases when the investments are financed with retained earnings and new equity issue, the cost of capital is higher or equal to 5%, which is the level of the assumed real rate of return (the opportunity cost of the investment). Retained earnings demonstrated highest value of 6,45% in 2006 (even higher than new equity issues which measured 5,92% for the zero-rate shareholder), while the lowest of only 5,02% in the period 2013 to 2017. This is direct consequence of the implementation of the rule from the same period that abolished the tax rate on capital gains income. As a result, in the observed time horizon the sources of finance such as debt and capital gains were effectively equalized. In the case of investment financed with external debt, the values are mostly lower than the real rate of return, ranging from 4,69% to 5,02%. As a general rule, this means that the domestic tax system subsidizes investment financed with debt compared to the other types of investments. The third financial alternative, external equity or new equity issues, generates the highest values of the cost of capital in average terms, with the highest absolute value of 6,79% in 2007. On the other hand, the analysis of the cost of capital on investments by type of asset, points that the investments in intangibles and buildings have the lowest minimum rate of return. Investments in inventories and especially in financial assets represents the group of assets with the opposite conclusion.

Table 6: EMTR at shareholder level in Macedonia, 2006-2017 (%)

Shareholder	Zero-rate					Top-rate (qual. & nonqual.)				
Year	2006	2007	2008	2009 /2012	2013 /2017	2006	2007	2008	2009 /2012	2013 /2017
Buildings (mean)	*8,24*	*11,92*	*10,46*	*11,69*	*9,87*	*11,24*	*11,92*	*10,46*	*11,69*	*9,87*
- retained earnings	20,88	17,22	14,67	7,41	1,96	20,88	17,22	14,67	7,41	1,96
- new equity issue	13,49	25,37	21,75	25,71	25,71	22,48	25,37	21,75	25,71	25,71
- debt	-9,65	-6,84	-5,04	1,96	1,96	-9,65	-6,84	-5,04	1,96	1,96
Equipment (mean)	*10,30*	*13,13*	*11,11*	*10,02*	*8,19*	*13,14*	*13,13*	*11,11*	*10,02*	*8,19*
- retained earnings	22,36	18,17	15,25	5,48	0,00	22,36	18,17	15,25	5,48	0,00
- new equity issue	15,39	26,25	22,24	24,58	24,58	23,90	26,25	22,24	24,58	24,58
- debt	-6,84	-5,04	-4,16	0,00	0,00	-6,84	-5,04	-4,16	0,00	0,00
Intangibles (mean)	*5,32*	*9,59*	*8,29*	*10,02*	*8,19*	*8,44*	*9,59*	*8,29*	*10,02*	*8,19*
- retained earnings	18,83	15,11	12,74	5,48	0,00	18,83	15,11	12,74	5,48	0,00
- new equity issue	11,03	23,78	20,13	24,58	24,58	20,38	23,78	20,13	24,58	24,58
- debt	-13,89	-10,13	-7,99	0,00	0,00	-13,89	-10,1	-7,99	0,00	0,00
Financial assets (mean)	*15,21*	*16,68*	*14,20*	*10,02*	*8,19*	*17,79*	*16,68*	*14,20*	*10,02*	*8,19*
- retained earnings	26,03	21,26	18,03	5,48	0,00	26,03	21,26	18,03	5,48	0,00
- new equity issue	19,61	28,77	24,58	24,58	24,58	27,33	28,77	24,58	24,58	24,58
- debt	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Inventories (mean)	*12,54*	*14,69*	*12,58*	*10,02*	*8,19*	*15,25*	*14,69*	*12,58*	*10,02*	*8,19*
- retained earnings	24,01	19,61	16,67	5,48	0,00	24,01	19,61	16,67	5,48	0,00
- new equity issue	17,35	27,33	23,31	24,58	24,58	25,48	27,33	23,31	24,58	24,58
- debt	-3,73	-2,88	-2,24	0,00	0,00	-3,73	-2,88	-2,24	0,00	0,00
Retained earnings (mean)	*22,42*	*18,27*	*15,47*	*5,87*	*0,39*	*22,42*	*18,27*	*15,47*	*5,87*	*0,39*
New equity issue (mean)	*15,37*	*26,30*	*22,40*	*24,81*	*24,81*	*23,91*	*26,30*	*22,40*	*24,81*	*24,81*
Debt (mean)	*-6,82*	*-4,98*	*-3,89*	*0,39*	*0,39*	*-6,82*	*-4,98*	*-3,89*	*0,39*	*0,39*
Overal mean	***10,32***	***13,17***	***11,32***	***10,35***	***8,53***	***13,17***	***13,17***	***11,32***	***10,35***	***8,53***

Source: Author's calculations

Estimated values of the ***effective marginal tax rates*** are presented in Table 5. These measurements express the allocation efficiency of tax system through the incorporation of the available tax incentives built in the system. Concerning the results of EMTR, we can generalize similar paths as in the previous case of the cost of capital. Basically, investments with retained earnings generate positive values of EMTR, the highest of 22,42% in 2006, and the lowest of only 0,39% from 2013 to 2017. Positive values of EMTR indicate that the cost of capital for these investments is higher than the real rate of return, meaning that in these cases there is a positive taxation on the marginal unit of investment. The same conclusion is relevant for the equity issues also, the smallest value of 15,37% for the zero-rate shareholder is in 2006, while the highest regardless the shareholder category is in 2007 with 26,30%. On the contrary, EMTR on investments covered with external debt shows negative values in the period from 2006 to 2008, with the highest negative value of -6,82% registered in 2006. After that, a small positive value of 0,39% is measured in the period 2009 to 2017. The negative prefix in the first period indicates on the existence of positive incentives that resulted in values of the cost of capital lower than 5%, automatically subsidizing the marginal investment financed with debt. Positive results from the second period demonstrate restriction of favorability of the tax system concerning to the debt type of investment.

Table 6 presents the estimated ***values of EATRs on investments*** in Macedonia calculated with assumed pre-tax real rate of return of 20%. The analytical value of the EATR arises from its ability to indicate to the part of the corporate income that is being effectively cut by taxation, but, unlike EMTR, the EATR indicates on the effective reduction of the net-present value of a profitable, infra-marginal investment. It is an instrument that enables generation of right decision among the different location specific discrete investment choices. The results of the EATR by source of finance explicit generous treatment for the zero-rate shareholder in 2006 across all the categories of finance (the lowest absolute EATRs are registered here with 17,69%, 15,42% and 10,24% successively). The situation with the qualified and non-qualified shareholder is similar once again. Namely, the investments financed with retained earnings and equity issue have the highest values of EATR. Precisely, EATR on investment financed with retained earnings range from 21,99% in 2006 to 14,52% in 2013-2017, while EATR on investment financed with new equity issue vary from 24,04% in 2007 to 20,28% in

2008. Investments financed with debt, yet again demonstrate the lowest values ranging from 13,70% in 2008 to 16,25% in 2007. As a conclusion, the implementation of the split rate tax system resulted with lower tax burden on investments with retained earnings (since retained profits are exempt from taxation) and higher burden on investments covered with equity issues (since distributions of profits are taxed). It is also evident that in the last period from 2013 to 2017, there is no difference in the tax treatment between debt and retained earning as a result of the implemented zero tax rate on capital gains.

Table 6: EATR at shareholder level in Macedonia, 2006-2017 (%)

| Shareholder	Zero-rate					Top-rate (qual. & nonqual.)				
Year	2006	2007	2008	2009/12	2013/17	2006	2007	2008	2009/12	2013/17
Buildings (mean)	*13,88*	*20,26*	*17,16*	*17,45*	*17,05*	*19,34*	*20,26*	*17,16*	*17,45*	*17,05*
- retained earnings	17,12	21,13	17,93	16,05	14,86	21,46	21,13	17,93	16,05	14,86
- new equity issue	14,85	23,72	20,07	21,45	21,45	21,97	23,72	20,07	21,45	21,45
- debt	9,67	15,92	13,48	14,86	14,86	14,58	15,92	13,48	14,86	14,86
Equipment (mean)	*14,41*	*20,54*	*17,32*	*17,03*	*16,64*	*19,83*	*20,54*	*17,32*	*17,03*	*16,64*
- retained earnings	17,65	21,41	18,09	15,63	14,44	21,96	21,41	18,09	15,63	14,44
- new equity issue	15,39	24,00	20,23	21,03	21,03	22,46	24,00	20,23	21,03	21,03
- debt	10,20	16,20	13,65	14,44	14,44	15,07	16,20	13,65	14,44	14,44
Intangibles (mean)	*13,19*	*19,69*	*16,61*	*17,03*	*16,64*	*18,70*	*19,69*	*16,61*	*17,03*	*16,64*
- retained earnings	16,43	20,56	17,37	15,63	14,44	20,83	20,56	17,37	15,63	14,44
- new equity issue	14,17	23,15	19,52	21,03	21,03	21,33	23,15	19,52	21,03	21,03
- debt	8,98	15,35	12,93	14,44	14,44	13,94	15,35	12,93	14,44	14,44
Financial assets (mean)	*15,75*	*21,47*	*18,11*	*17,03*	*16,64*	*21,06*	*21,47*	*18,11*	*17,03*	*16,64*
- retained earnings	18,98	22,34	18,88	15,63	14,44	23,19	22,34	18,88	15,63	14,44
- new equity issue	16,72	24,93	21,02	21,03	21,03	23,70	24,93	21,02	21,03	21,03
- debt	11,54	17,14	14,42	14,44	14,44	16,30	17,14	14,42	14,44	14,44
Inventories (mean)	*15,01*	*20,96*	*17,67*	*17,03*	*16,64*	*20,38*	*20,96*	*17,67*	*17,03*	*16,64*
- retained earnings	18,25	21,83	18,44	15,63	14,44	22,51	21,83	18,44	15,63	14,44
- new equity issue	15,99	24,42	20,58	21,03	21,03	23,01	24,42	20,58	21,03	21,03
- debt	10,80	16,62	14,00	14,44	14,44	15,63	16,62	14,00	14,44	14,44
Retained earnings (mean)	*17,69*	*21,45*	*18,14*	*15,71*	*14,52*	*21,99*	*21,45*	*18,14*	*15,71*	*14,52*
New equity issue (mean)	*15,42*	*24,04*	*20,28*	*21,11*	*21,11*	*22,49*	*24,04*	*20,28*	*21,11*	*21,11*
Debt (mean)	*10,24*	*16,25*	*13,70*	*14,52*	*14,52*	*15,10*	*16,25*	*13,70*	*14,52*	*14,52*
Overall mean	***14,45***	***20,58***	***17,37***	***17,14***	***16,71***	***19,86***	***20,58***	***17,37***	***17,14***	***16,71***

Source: Author's calculations

Next, we pay attention on the ***overall tax burden parameters*** in the observed period and their **trends**. First, about the tax parameters at zero-rate shareholder level, which we said, differ from the others only at the beginning of the observed period in 2006. Calculations from Table 4, 5 and 6 show that the overall mean value of the cost of capital, EMTR and EATR at zero-rate shareholder level in 2006 are significantly lower than the same parameters at the top-rate qualified and non-qualified shareholder level in the same year (5,69%, 10,32% and 14,45% versus 5,91%, 13,17% and 19,86%). For the rest of the analyzed period, their values are identical since the different shareholder categories were erased within the tax code. So, in 2007 the overall mean for the cost of capital was at its peak with 5,86%, after it started to decline to its bottom value in 2013-2017 at 5,56%. The same trend is obvious for the overall mean EMTR and EATR as they reached their largest values in 2007 (13,17% and 20,58%) while their smallest are registered in period 20013-2017 (8,53 and 16,71). The previous facts are also illustrated in Graphic 1 and Graphic 2 which capture all the difference and similarities of the analyzed trend paths.

Graphic 1: The relevant tax parameters at zero-rate shareholder level
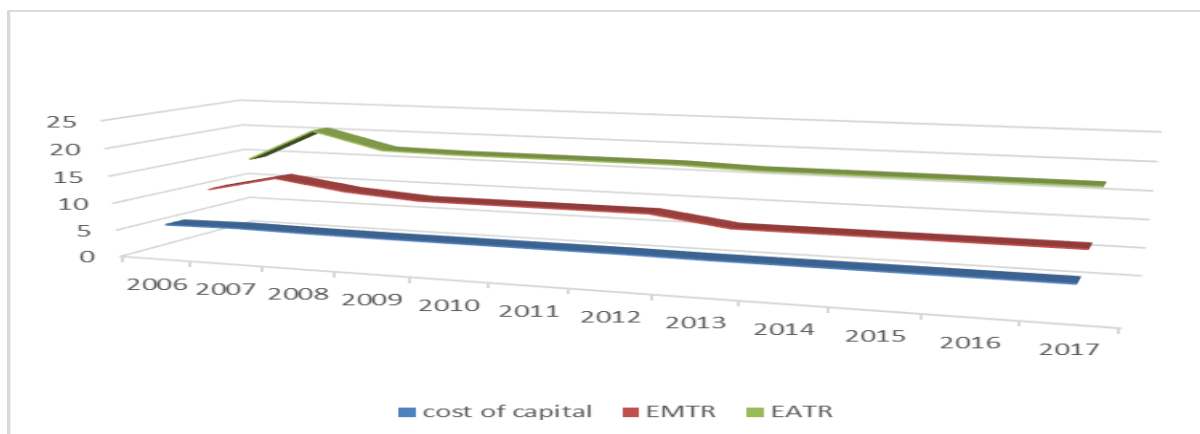
Source: Authors illustration

Graphic 2: The relevant tax parameters at top-rate qualified and non-qualified shareholder level
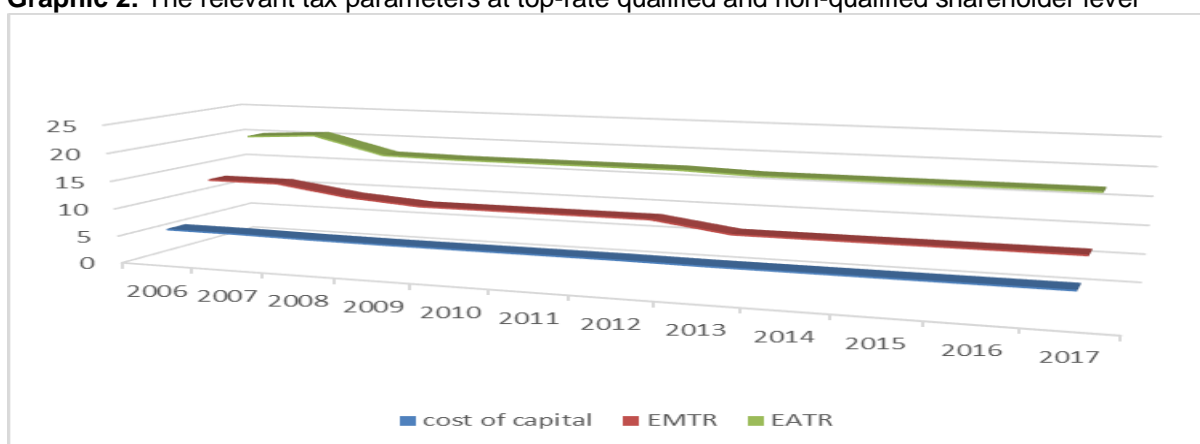
Source: Authors illustration

All this presentation leads us to the conclusion that the Macedonian tax system is really generous and favorable towards the investment over the time. The continuous trend of lowering compulsory rates, the implementation of the split tax rate system for reinvestment, the exemption of capital gains from the means of taxation and many other built-in tax benefits have resulted in historically lowest tax burden parameters lately. Will they remain sustainable in the period that follows, only the time will reveal.

At the bottom line, we compare the EATR at shareholder level and the EATR at company's level. This will determine ***the dimension of "double" taxation*** present within the domestic tax system. Accordingly, if there is significant difference between the relevant parameters compared, than this will confirm the thesis. As we can see from Table 7, in the whole period that difference is obvious indicating on the presence of integrated "double" taxation. Smallest difference is evident in 2006, when the imputation tax system was still in force, allowing a significant tax credit on the received dividends and resulting in smaller EATR at shareholder level. Then, when the flat tax system was introduced in 2007 the contrast was enlarged for the benefit of corporate taxes. Proportional tax rates on corporate and personal income, without any significant exemptions at personal level, produced almost a "double" difference between the compared tax parameters. This discrepancy sustained almost unchanged until the end of the period (17,14% vs 8,77 from 2009/2012), when the exemption of capital gains income in 2013 insignificantly lowered the difference against the EATR at shareholder level (16,71 vs 8,77).

This is illustrated on Graphic 3 also. The level of "double" taxation is determined by the difference between the blue and the red line on the graphic, which as we can see is constant but slightly diminishing over the time.

69

Table 7: EATR at shareholder and corporate level in period 2006-2017

	2006	**2007**	**2008**	**2009/2012**	**2013/2017**
EATR at shareholder level	19,86	20,58	17,37	17,14	16,71
EATR at corporate level	13,48	10,82	8,99	8,77	8,77

Source: Author's calculations

Graphic 3: Comparison between the EATR at shareholder level and EATR at corporate level
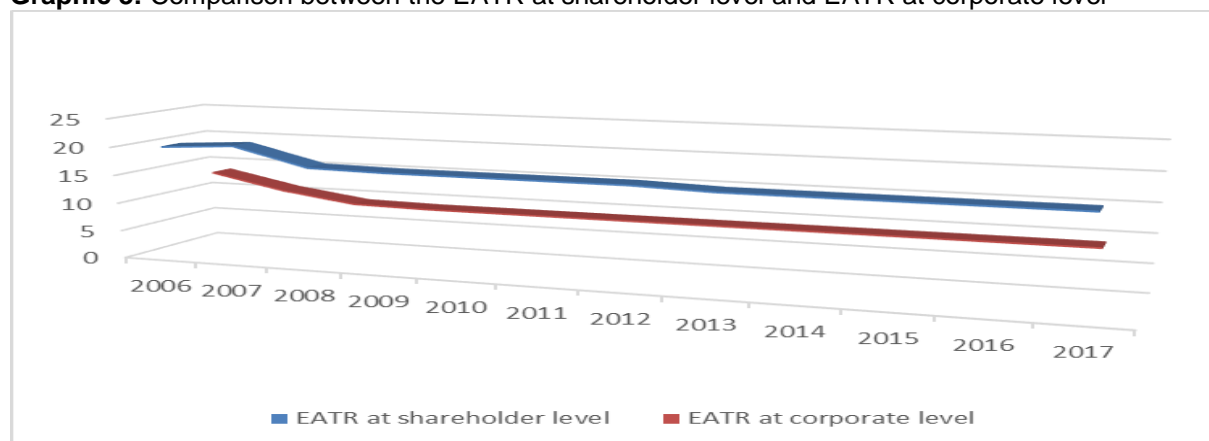
Source: Authors illustration

5. Conclusion

Over the last decade the Republic of Macedonia has preserved its tax policy relatively unchanged, despite the widespread tendencies of rising taxes across the EU countries. But the announcements made by the new government concerning the tax policy reflected in pessimistic expectations among the public. This work contains the measurements of the level of tax burden at the shareholder level in Macedonia over the period from 2006 to 2017. The relevant parameters such as the cost of capital, the effective marginal tax rate (EMTR) and the effective average tax rate (EATR), manifest down sloping tendencies over the observed period, expressing the favorable conditions for investing created by the abundance of tax "friendly" measures. The continuous trend of lowering compulsory rates, the implementation of the split tax rate system for reinvestment, the exemption of capital gains from the means of taxation and many other built-in tax benefits have resulted in historically lowest tax burden parameters ever. Also, the difference in EATR at shareholder and corporate level implies on the presence of "double" taxation phenomenon within the channels of corporate profit. How will the new government react on the pressure to consolidate the public debt, and will this constellation of tax policy prevail further, is hidden under the veil of time.

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