COMPARATIVE ASSESSMENT OF CAPITAL INCOME TAXATION IN AZERBAIJAN, KAZAKHSTAN, GEORGIA, AND BELARUS

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ABSTRACT

The marginal effective tax rates (METR) are determined in Azerbaijan, Kazakhstan, Georgia, and Belarus. The METR have high sensitivity from the tax depreciation rate, profit tax and interest rates for all countries. Sensitivity of the METR from inflation is high in Georgia and Belarus but is less in Azerbaijan and Kazakhstan. The calculations show that the current tax burden in Belarus is higher than in other countries (excluding debt financing). The current tax depreciation rate does not provide additional incentives for investment activity in these countries. The calculations are approximate, but they show that the tax depreciation rate depends on the inflation rate to create additional incentives for marginal investment. Georgia has the highest opportunities to increase investment activities by decreasing the real interest rate. Kazakhstan has greater tax advantages in manufacturing than Azerbaijan.

Keywords: effective tax rate, marginal investment, capital taxation, depreciation rates

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INTRODUCTION

Changes in the level and the structure of taxes affect investment activity in a country. In general, the cost of employing fixed assets depends on the rate of return, the price of investment goods, and the tax treatment of business income (Hall and Jorgenson, 1967). According to Devereux et al. (2008), as capital controls have been relaxed, more countries have been engaged in tax competition. Odintsov and et al. (2020) concluded that optimization of the tax burden on agrarian enterprises increased the efficiency of their resource potential. Thus, taxes are one of main factors which impact capital flows in open economies (Feld and Heckemeyer, 2011).

The reforms carried out in 2000-2019 led to an improvement in the tax regime in Azerbaijan, Kazakhstan, Georgia, and Belarus. In 2006-2009, 17 taxes were eliminated, and 34 independent tax levies and charges were included into the single state tax in Belarus (Loukianova and et al., 2019). In addition, the profit tax rate was reduced from 24% to 18% in 2011 and the average tax-to-GDP ratio was 24.8% during 2013-2019 in Belarus (Ministry of Finance of Belarus, 2021). The reduction of the number of taxes and the tax rates in 2005 dropped potential tax revenues from 40-45% of GDP to 28-30%, but increased the extent of compliance with tax obligations from 35% to 78-85% and grew the level of the actual tax revenues from 15.6% in 2004 to 23.4% in Georgia (Chikviladze, 2018). Georgia had an average tax-to-GDP ratio of 23.6% during 2010-2019. In 2007-2008 the profit tax rate reduced from 30% to 20%, the personal income tax rate from 20% to 10%, and following the decline in the

tax-to-GDP ratio from 26.1% in 2006 to 21.2% in 2009, Kazakhstan had an average tax-to-GDP ratio of 18.7% in 2010-2019 (OECD, 2021). Profit tax was reduced from 27% to 20%, average personal income tax rate from 24% to 19.5%, non-oil budget revenues as a share of non-oil GDP increased from 16.5% to 23.9% during 2000-2019, but the tax-to-GDP ratio was 14.1% for 2019 in Azerbaijan (Ministry of Finance of Azerbaijan, 2021).

The non-oil tax base in Azerbaijan and Kazakhstan largely depends on budget oil revenues. Because these revenues are spent in the non-oil sector and become one of the sources of budget revenues from the non-oil sector.

The profit taxes as a share of GDP were 3.1%, 4.8%, 1.8% and 3.0% in Azerbaijan, Kazakhstan, Georgia, and Belarus respectively for 2019 (Ministry of Finance of Azerbaijan, 2021; OECD, 2021; Ministry of Finance of Georgia, 2021; Ministry of Finance of Belarus, 2021). This indicator is about the same in Azerbaijan and Belarus, lower in Georgia and higher in Kazakhstan compared to OECD countries (OECD, 2021).

The main objective of this paper is to determine the marginal tax rate and its sensitivity from inflation, tax depreciation rate, profit tax and interest rates in these countries.

LITERATURE REVIEW

There are differences in approaches regarding how capital should be taxed. According to Diamond and Mirrlees (1971), investment goods are intermediate goods, so optimal taxes on these goods must be zero. In addition, a capital tax is a tax on future consumption, so taxes on capital should be zero to ensure the prescription for uniform taxation (Atkinson and Stiglitz,1976). Mankiw et al. (2009) concluded that any tax on capital income reduces the size of the capital stock and aggregate output in the economy. Sorbe and Johansson (2017) confirmed that corporate taxes can reduce business investment. In contrast to this approach, Kate and Milionis (2019) did not find a strong negative effect of capital taxation on economic growth. But Devereux et al. (2008) identified that tax competition between countries causes declining taxes on capital in most developed countries.

Investment decisions are fundamentally forward-looking, focused on forecasts of potential after-tax distributed income, discounted at a rate that reflects the marginal shareholder's opportunity cost of funds (OECD, 2007). As a result, these considerations must be considered when evaluating the effect of the tax regime on the country's investment activity. Hall and Jorgenson (1967) introduced the first method for calculating a marginal effective tax rate. Then Fullerton and King (1984) proposed a model focused on the estimation of a marginal effective tax rate (METR) to measure the influence of the tax regime on investment activity. The METR assesses the impact of taxation at the margin (OECD, 2007). The accumulated tax distortion on a marginal investment decision is summarized in this model (McKenzie, 1994). The METR examines the cumulative effect of corporate and personal taxation on investment incentives (OECD, 2007).

Measurement of the marginal effective tax rate mostly refers to King/Fullerton and Devereux/Griffith approaches (Fullerton and King, 1984; Devereux and Griffith, 1999, 2003). The Devereux/Griffith approach is also built on the standard King/Fullerton model (Devereux and Griffith, 1999).

METHODOLOGY

The Fullerton/King model is adapted to Azerbaijan's, Kazakhstan's, Georgia's, and Belarus's current tax regimes. Profit tax, property tax, dividend tax and tax on interest income taxes are taken into account in the model.

The marginal effective tax rate on capital income (METR) is calculated as follows:

$$METR = (p - s)/p \quad (1)$$

Where:

p is the pretax real rate of return on the marginal investment, net of depreciation, s is the after-tax real rate of return on the savings used to finance the investment;

(p – s) define the tax burden.

Firms' investment decisions and savers' saving decisions are also influenced by the real interest rate (r). If we denote the market nominal interest rate by i and the inflation rate by π, the real interest rate is calculated as follows:

$$r = \frac{1+i}{1+\pi} - 1 \quad (2)$$

Taxes on savers' income decide the difference between their after-tax real rate of return (s) and a real market interest rate (r). The after-tax real rate of return (s) for savers, then, is estimated as follows:

$$s = ((k_i(1 - m_i)+(1-k_i)(1 - m_d))i - \pi)/(1+\pi) \quad (3)$$

Where:

m_i is the interest income tax rate and m_d is the dividend tax rate for savers k_i and, $(1- k_i)$ are shares of savers' income as interest income and dividends.

The after-tax interest rate on capital attracted by the firm is equivalent to the discount rate (ρ). The discount rate (ρ) balances the discounted sum of after-tax net cash flows (V) and the marginal discounted investment costs (C).

$$C = V \quad (4)$$

Tax depreciation rates can significantly vary from economic depreciation rates. Depreciation of an asset during its useful life is referred to as economic depreciation. Consumption of fixed capital is described in the System National Accounts (SNA) as the decline, during the course of the accounting period, the current value of the stock of fixed assets is owned and used by a producer as a result of physical deterioration, normal obsolescence. or normal accidental damage (para. 6.240 of the 2008 SNA). Since the consumption of fixed capital is contingent on the asset's current value, it is an economic depreciation centered on an age-price profile (OECD, 2009).

According to Hulten and Wykoff (1981), geometric depreciation accurately estimates depreciation depending on the age and price of most properties (buildings, machinery, and equipment, and so on). Economic depreciation reflects the wear off assets almost exponentially (Fullerton, 1999). Depreciation can also be measured by using geometric patterns, according to the Manual of Measuring Capital (OECD, 2009).

In Azerbaijan, Kazakhstan, Georgia, and Belarus, depreciation charges are measured by using the reducing-balance depreciation method. Depreciation charges in year t are determined by using the fixed asset's original cost (D_0) (if the asset was placed into operation in year 0) as follows:

$$A_t = D_0\delta(1 - \delta)^{t-1} \quad (5)$$

Where δ is a depreciation rate, and the net book value of an asset (D_t) in year t is:

$$D_t = D_0(1 - \delta)^t \quad (6)$$

If the net book value of fixed asset is less than \$294, or 5% of the original cost at the end of year, the net book value must be deducted from income, according to the Azerbaijani Tax Code. This depreciated cost is equal to \$300 by the Georgia's Tax Code and \$2092 by the Kazakhstan's Tax Code. The tax depreciation period is approximately equal to the economic depreciation period for each type of fixed asset in Belarus. Older assets may be less profitable because they generate less output or need more input to function (i.e., maintenance) (Hulten and Wykoff, 1981). As a result, the depreciation period is calculated by using 5% of the original cost of fixed assets.

Depreciation periods (N=T or L, T – tax depreciation period, L – economic depreciation period) will be calculated using the following equation (marginal investment (D_0) being equal to 1):

$$(1 - \delta)^x = 0{,}05,$$

$$x = \ln 0{,}05/\ln(1- \delta) \quad (7)$$

Hence,

$$N = [\ln 0{,}05/\ln(1- \delta)] + 2 \quad (8)$$

Equation (8) is used to estimate tax and economic depreciation periods for Azerbaijan, Kazakhstan, Georgia, and Belarus.

The following are the depreciation charges for the last unit of capital built.

$$RVA_t = \delta(1- \delta)^{t-1}$$

The present value of the nominal tax depreciation charges can be calculated after calculating the tax depreciation period and annual depreciation charges.

$$RA_d = \sum_{t=1}^{T} \frac{\delta_{tax}(1-\delta_{tax})^{t-1}}{(1+\rho)^t}$$

The following equation (as a sum of geometrical progression) arises from simplifying this equation:

$$RA_d = \frac{\delta_{tax}((1+\rho)^T-(1-\delta_{tax})^T)}{(\rho+\delta_{tax})(1+\rho)^T} \quad (9)$$

As a $1 marginal investment generates $1 worth of assets, then calculation of the net book value of fixed assets as follows:

$$D_t = (1-\delta_{tax})^t \quad (10)$$

According to the Tax Codes of Azerbaijan, Georgia and Belarus, the average annual net book value of fixed assets in the year t as follows:

$$D_{tav} = ((1-\delta_{tax})^{t-1}+(1-\delta_{tax})^t)/2 = (2-\delta_{tax})(1-\delta_{tax})^{t-1}/2 \quad (11)$$

Due to the Tax Codes of these countries, property tax is included in the cost of production and the annual amount of property tax on the last unit of capital built is determined as follows:

$$P_t = \frac{(1-\tau)w_c(2-\delta_{tax})(1-\delta_{tax})^{t-1}}{2}$$

Where:

w_c stands for corporate property tax, which τ is the profit tax.

This equation can be used to measure present value:

$$P_d = \frac{(1-\tau)w_c(2-\delta_{tax})}{2}\sum_{t=1}^{T}\frac{(1-\delta_{tax})^{t-1}}{(1+\rho)^t} = \frac{(1-\tau)w_c(2-\delta_{tax})((1+\rho)^T-(1-\delta_{tax})^T)}{2(\rho+\delta_{tax})(1+\rho)^T}$$

To simplify, then

$$P_d = \frac{(1-\tau)w_c(2-\delta_{tax})((1+\rho)^T-(1-\delta_{tax})^T)}{2(\rho+\delta_{tax})(1+\rho)^T} \quad (13)$$

For Kazakhstan the tax base for property tax is the average annual net book value of taxable items and is defined as one-thirteenth of the sum of the balance values of taxable items as of the first day of each month of a current taxable period and the first day of the month of the taxable period following a reporting one, according to the Kazakhstan's Tax Codes. So,

$$D_{tav} = \frac{12\left(1-\frac{\delta_{tax}}{12}\right)^{12(t-1)}(1-(1-\frac{\delta_{tax}}{12})^{13})}{13\delta_{tax}}$$

$$P_d = \frac{12(1-\tau)w_c(1-(1-\frac{\delta_{tax}}{12})^{13})}{13\delta_{tax}}\sum_{t=1}^{T}\frac{\left(1-\frac{\delta_{tax}}{12}\right)^{12(t-1)}}{(1+\rho)^t}$$

To simplify, then

$$P_d = \frac{12(1-\tau)w_c(1-(1-\frac{\delta_{tax}}{12})^{13})((1+\rho)^T-\left(1-\frac{\delta_{tax}}{12}\right)^{12T})}{13\delta_{tax}\left(1-\frac{\delta_{tax}}{12}\right)^{12}(1+\rho-\left(1-\frac{\delta_{tax}}{12}\right)^{12})(1+\rho)^T} \quad (14)$$

If additional investment has not made, the net cash flows are equal to the profit plus depreciation charges. Economic depreciation charges are valued at their real value. The annual nominal number of profit and economic depreciation charges for the marginal unit of investment is determined by using equation (10), as follows:

$$M_t = (p+\delta_e)(1-\delta_e)^{t-1}(1+\pi)^t$$

The present value of after-tax sum of profit and economic depreciation charges is determined as follows:

$$M_d = \sum_{t=1}^{L}\frac{(p+\delta_e)(1-\tau)(1-\delta_e)^{t-1}(1+\pi)^t}{(1+\rho)^t} + \sum_{t=1}^{T}\frac{\tau\delta_{tax}(1-\delta_{tax})^{t-1}}{(1+\rho)^t}$$

To simplify, then

$$M_d = \frac{(p+\delta_e)(1-\tau)(1+\pi)((1+\rho)^L-(1-\delta_e)^L(1+\pi)^L)}{(\rho+\delta_e+\delta_e\pi-\pi)(1+\rho)^L} + \frac{\tau\delta_{tax}((1+\rho)^T-(1-\delta_{tax})^T)}{(\rho+\delta_{tax})(1+\rho)^T} \quad (15)$$

Thus,

$$V=M_d - P_d \quad (16)$$

Using equations (4) and (16) and accounting for C=1, p can be calculated.

$$M_d - P_d = 1 \quad (17)$$

The discount rate is determined by the percentage of finance sources and the cost of capital from these sources:

$$\rho = w_1\rho_1 + w_2\rho_2 + \ldots + \rho_n k_n = \sum_{n=1}^{N} w_n\rho_n \quad (18)$$

Where:

w_n is a share of the nth finance source and p_n is the cost of capital from the nth finance source.

Estimates can be made in two ways by using equation (17) from this perspective. In the first approach, the value of p is assumed to be exogenous to the capital cost estimation. Firm profitability determines demand for capital and its price, according to this approach. It is obvious that if the value of p is high, the cost of capital (for example, interest rate) will be higher. The second method assumes that the capital cost is exogenous, and then estimates p. For instance, the discount rate (ρ) is related to the interest rate. Because the discount rate is estimated as the weighted average cost of capital. They are equal if there is no uncertainty or taxation. If the investment is financed by loans, and the loan interest payments are deducted from a base that includes withheld taxes, the after-tax discount rate is estimated as follows:

$$\rho = (1 - \tau)i$$

If the investment is funded with owned capital, then ρ is calculated as follows:

$$\rho = i$$

The price of owned capital is denoted by the letter *i*.

The value of p is then calculated by using equation (17), taking account r as exogenous.

After evaluating p and *i* equation (3) is used to find s. The final step is to measure METR by using equation (1).

The relationship between p and s is not linear in general. However, the model can identify a correlation between savers' and firms' profitability.

DATA

The following data was used to estimate the tax burden for the economies of Azerbaijan, Kazakhstan, Georgia, and Belarus.

Table 1. The tax rates (%)

		Azerbaijan	Kazakhstan	Georgia	Belarus
Profit tax	τ	20	20	15	18
Property tax	w_c	1	1.5	1	1
Dividend tax	m_d	0	0	5	13
Interest income tax	m_i	0	0	0	0

Sources: Tax Codes of Azerbaijan, Kazakhstan, Georgia and Belarus.

The structure of fixed assets and depreciation rates specified in Tax Codes are used to estimate the average depreciation rate in the economy.

$$\delta = \sum_{n=1}^{N} k_n \delta_n \qquad (19)$$

Where:

k_n and δ_n are the number of shares and the number of depreciation rates of different types of fixed assets, respectively.

The economic depreciation rate of fixed assets is calculated by using data from BEA Rates of Depreciation, Resolution of the Ministry of Economy, and OECD (2009).

Table 2. The economic depreciation rate of fixed assets (%)

Fixes assets	Economic depreciation rate
Buildings and structures (δ_{ecB})	5
Machinery and equipment (δ_{ecM})	20
Other fixed assets (δ_{ecO})	15

Sources: BEA Rates of Depreciation, Resolution of the Ministry of Economy, and OECD (2009)

The following table is compiled by using available data for the structure of fixed assets.

Table 3. Structure of fixed assets, as % to total

	Buildings and structures	Machinery and equipment	Other fixed assets
Azerbaijan, (average for 2013-2017)			
Industry	51,52	47,66	0,82
Manufacturing	47,6	46,82	5,58
Kazakhstan, (average for 2015-2019)			
Economy	48,9	37,8	13,3
Manufacturing	34,5	56,3	9,0
Georgia, (average for 2013-2018)			
Economy	42,4	46,2	11,4
Belarus, (average for 2015-2019)			
Economy	50,8	47,08	2,2

Source: Industry of Azerbaijan. Statistical Yearbook. 2017, stat.gov.kz, geostat.ge, belstat.gov.by

By using data from Central Banks, the market interest rate is calculated as an average annual interest rate for long-term household savings.

Table 4. Inflation (π) and nominal interest rates for long term household savings (i) (%)

	2017	2018	2019	Average for 2017-2019
	Azerbaijan			
I	8,9	9,7	9,6	9,38
Π	12,9	2,3	2,6	5,93
	Kazakhstan			
I	12,5	11,7	10,1	11,43
Π	7,1	5,3	5,4	5,93
	Georgia			
i	11,4	11,1	10,5	11,0
π	6,0	2,6	4,9	4,5
	Belarus			
i	11,8	11,1	12,2	11,7
π	6,0	4,9	5,6	5,5

Source: cbar.az and stat.gov.az, nationalbank.kz and stat.gov.kz, nbg.gov.ge and geostat.ge, nbrb.by and belstat.gov.by

Every country employs the method of declining balance depreciation.

Table 5. Tax depreciation (δ_{tax}) and economic depreciation (δ_e) rates (%)

	Azerbaijan	Kazakhstan	Georgia	Belarus
δ_{ee} (for economy)		12.0	13.07	12.286
δ_{etax}(for economy)		16.335	13.07	12.286
δ_{ie} (for industry)	12.231			
δ_{itax} (for industry)	13.3424			
δ_{me} (for manufacturing)	12.581	14.345		
δ_{mtax} (for manufacturing)	14.064	18.895		

Source: Authors' calculations using equation (19), data in Table 3 and tax depreciation rates form countries' tax code.

Uncertainty is not taken into account.

RESULTS AND DISCUSSION

Calculations were made using equations (1), (3) and (17), taking r as exogenous for tax treatment for 2019.

Table 6. Computation of p, s and METR (%)

	Azerbaijan	Kazakhstan	Georgia	Belarus
Financed by owned capital				
p (economy)		8.26	8.75	8.78
s (economy)		5.19	5.69	4.44
METR (economy)		37.1	34.9	49.4
p (industry)	5.87			
s (industry)	3.26			
METR (industry)	44.5			
p (manufacturing)	5.82	8.47		
s (manufacturing)	3.26	5.19		
METR (manufacturing)	44.0	38.7		
Debt financing				
p (economy)		5.74	6.97	6.47
s (economy)		5.19	6.22	5.89
METR (economy)		9.62	10.76	9.0
p (industry)	3.84			
s (industry)	3.26			
METR (industry)	15.2			
p (manufacturing)	3.79	5.97		
s (manufacturing)	3.26	5.19		
METR (manufacturing)	14.0	13.0		
Mixed financed investment (30 % loans, 70% own capital)				
p (economy)		7.5	8.21	8.08
s (economy)		5.19	5.85	4.88
METR (economy)		30.7	28.7	39.7
p (industry)	5.25			
s (industry)	3.26			
METR (industry)	38.0			
p (manufacturing)	5.2	7.71		
s (manufacturing)	3.26	5.19		
METR (manufacturing)	37.4	32.7		

According to Table 6, the highest METR for marginal investment financed by owned capital and by mixed capital is observed in Belarus, while the lowest value is in Georgia. In addition, the METR in the case of debt financing is lower than in financing by owned capital. As a result, there are opportunities to reduce the tax burden on marginal investment through debt financing. The low METR in debt financing is also due to the fact that interest income is tax-exempt, while dividends are taxed in Belarus and Georgia. The after-tax real rate of return (s) for savers is the highest in Georgia, which shows that this country has more opportunity to attract funds from foreign sources. If equilibrium p is taken account, as in Table 6 for mixed financing, then Table 4 shows that Azerbaijan has the lowest and Georgia has the highest opportunities to increase investment activities by decreasing the real interest rate. Kazakhstan has more tax advantages in manufacturing than Azerbaijan.

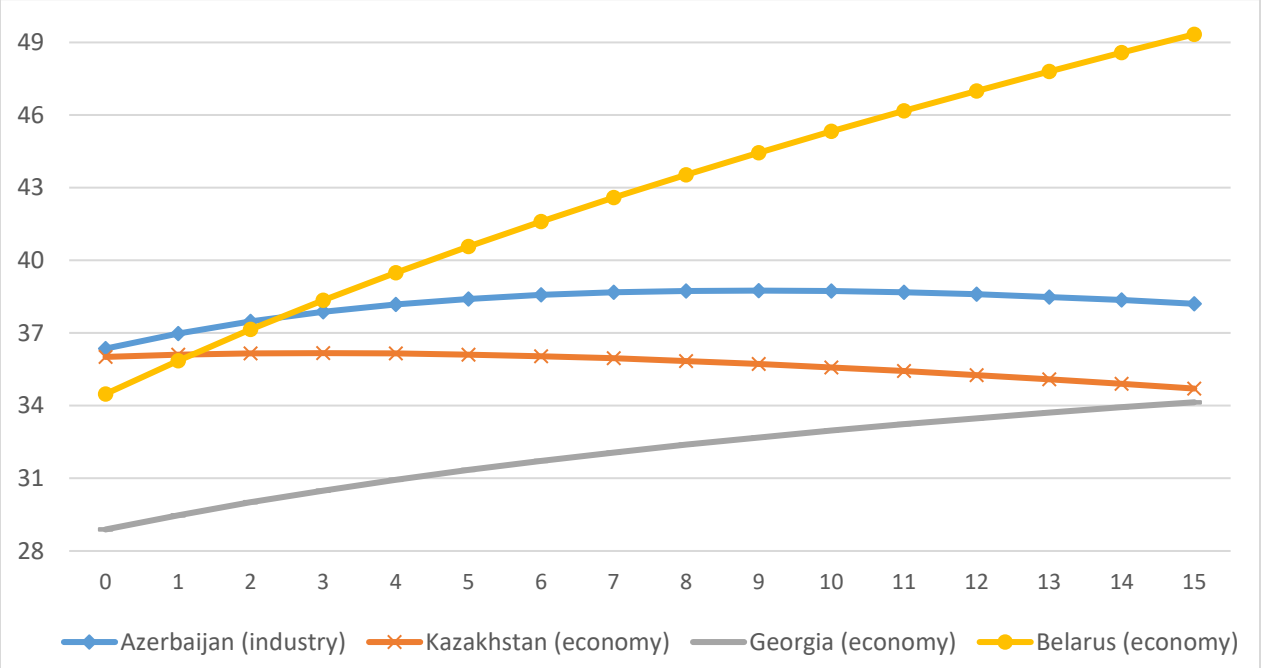

Figure 1. The dependence of METR on inflation with mixed financed investment (30% debt capital, 70% own capital).

Source: Authors' calculations

According to Figure 1, there is higher sensitivity of the METR from inflation in Belarus and Georgia. Dividend taxes cause higher sensitivity of the METR from inflation in these countries. The tax regimes of Azerbaijan and Kazakhstan are less sensitive and stable to the inflation rate. The maximum amount of the METR for Kazakhstan is on a 3.0% inflation rate, and 8.9% for Azerbaijan. The higher level of taxes on interest income and dividends increase the impact of inflation on the METR.

Table 7. The dependence of present value of differences between the nominal tax depreciation charges and the nominal economic depreciation charges ($PV(\delta_{tax}-\delta_e)$ on inflation

π, %	0	1	2	3	4	5	6	7	8	9	10
Azerbaijan (industry)	-0,01	-0,03	-0,07	-0,11	-0,14	-0,17	-0,20	-0,23	-0,25	-0,27	-0,29
Kazakhstan (economy)	0,05	0,02	-0,01	-0,04	-0,07	-0,09	-0,12	-0,14	-0,16	-0,18	-0,20
Georgia (economy)	0	-0,03	-0,07	-0,10	-0,12	-0,15	-0,17	-0,19	-0,21	-0,23	-0,25
Belarus (economy)	0	-0,04	-0,07	-0,10	-0,13	-0,15	-0,18	-0,20	-0,22	-0,24	-0,26

Source: Authors' calculations (Equations (9) and $PV(\delta_e) = \frac{\delta_e(1+\pi)((1+\rho)^L-(1-\delta_e)^L(1+\pi)^L)}{(\rho+\delta_e+\delta_e\pi-\pi)(1+\rho)^L}$ are used).

According to Table 7, the dependence of $PV(\delta_{tax}-\delta_e)$ on inflation is almost the same in Georgia and Belarus. However, at the average inflation rate in these countries, the current tax depreciation rate does not provide additional incentives for investment activity. At the same time, such incentives exist only when $\pi \leq 0.292\%$ in Azerbaijan, $\pi \leq 1.646\%$ in Kazakhstan and $\pi < 0$ in other countries. Although these calculations are approximate, they show that the tax depreciation rate depends on the inflation rate to create additional incentives for marginal investment.

Table 8. Sensitivity of METRs from the tax depreciation rate with mixed financed investment (30% debt capital, 70% own capital) (%)

δ_{tax}, %	10	11	12	13	14	15	16	17	18	19	20
Azerbaijan (industry)	42,7	41,4	40,1	38,9	37,8	36,8	35,7	34,8	33,9	33,0	32,2
Kazakhstan (economy)	41,9	40,8	39,8	38,8	38,0	37,1	36,3	35,5	34,8	34,1	33,5
Georgia (economy)	33,9	33,0	32,1	31,2	30,4	29,6	28,9	28,3	27,6	27,0	26,5
Belarus (economy)	43,1	42,2	41,3	40,5	39,8	39,0	38,4	37,7	37,1	36,5	36,0

Source: Authors' calculations.

According to Table 8, the tax depreciation rate is one of tbe policy tools to decrease the METR. Azerbaijan has the highest degree of impact to change the METR by the tax depreciation rate.

Table 9. Sensitivity of METRs from profit tax rate with mixed financed investment (30% debt capital, 70% own capital) (%)

τ (%)	15	16	17	18	19	20	21	22	23	24	25
Azerbaijan (industry)	34,8	35,6	36,3	37,1	37,8	38,6	39,3	40,1	40,8	41,6	42,3
Kazakhstan (economy)	33,3	33,8	34,4	34,9	35,5	36,1	36,6	37,2	37,8	38,4	39,0
Georgia (economy)	31,1	31,8	32,5	33,2	33,9	34,6	35,3	36,0	36,8	37,5	38,2
Belarus (economy)	39,2	39,8	40,5	41,1	41,7	42,4	43,0	43,7	44,3	45,0	45,6

Source: Authors' calculations.

There is a positive correlation between the profit tax and the METR. Sensitivity of METR from profit tax rate is higher in Azerbaijan than other countries.

Table 10. Sensitivity of METRs from real interest rate with mixed financed investment (30% debt capital, 70% own capital) (%)

r (%)	2	3	4	5	6	7	8	9	10	11	12	13	14	
Azerbaijan (industry)	51,4	41,7	35,7	31,5	28,6	26,4	24,7	23,4	22,4	21,5	20,9	20,3	19,8	1
Kazakhstan (economy)	60,5	49,2	41,9	36,9	33,2	30,5	28,4	26,7	25,4	24,3	23,4	22,6	22,0	2
Georgia (economy)	57,8	46,8	39,9	35,2	31,8	29,3	27,3	25,8	24,5	23,5	22,7	21,9	21,3	2
Belarus (economy)	68,6	56,9	49,5	44,5	40,8	38,0	35,9	34,2	32,8	31,7	30,8	30,0	29,3	2

Source: Authors' calculations.

The high sensitivity of METR to real interest rates shows that the change in real interest rates indicates a serious impact on investment activity (Table 10). However, Fischer's dependence between nominal and real interest rates is not confirmed by the statistical data in these countries. Thus, the nominal interest rate has a greater real impact on the behavior of business entities. This is mainly due to the weak development of the financial market and the fact that the central banks are pursuing a policy primarily in the regulation of the exchange rate and not the interest rate. Increasing the real interest rate shows increasing income of saving. As the taxes on the return on investment is more than on the return on savings, so an increase in the real interest rate reduces the tax burden. But an increase in the real interest rate requires an increase in the marginal efficiency of capital.

Apparently, the METR is sensitive to interest rates and inflation. This can be attributed to deviations at the actual METR levels when comparing tax regimes to individual countries. Therefore, with the exception of other factual conditions, the METR for the case is calculated below for r = 5% and π = 5%.

Table 11. Computation of p, s and the METR, with r=5% and π=5% (30% debt capital, 70% own capital) (%)

	Azerbaijan (industry)	Kazakhstan (economy)	Georgia (economy)	Belarus (economy)
p	7,15	7,29	6,9	7,11
s	4,9	4,6	4,46	4.0
METR	31,4	36,9	35,4	43,9

Source: Authors' calculations.

Table 11 shows that when other actual conditions do not change, and the real interest rate and inflation rate are the same for all countries, the lowest METR is in Azerbaijan.

CONCLUSION

The results show that the METR has high sensitivity from the tax depreciation rate, profit tax and interest rates for all countries. The current tax burden in Belarus is higher than in other countries (excluding the debt financing). Sensitivity of the METR from inflation is higher in Georgia and Belarus but is less in Azerbaijan and Kazakhstan. When other actual conditions do not change, and the real interest rate and inflation rate are the same for all countries, the lowest METR is in Azerbaijan, and the highest METR is in Belarus. The current tax depreciation rates do not provide additional incentives for investment activity in these countries. The calculations are approximate, but they show that the tax depreciation rate depends on the inflation rate in order to create additional incentives for marginal investment. Georgia has the highest opportunities to increase investment activities by decreasing real interest rate. Kazakhstan has tax advantages in manufacturing than Azerbaijan.

METR is significantly lower for debt financing than equity financing. The exemption of taxation on interest income in these countries widens this gap. In this regard, the policy of increasing taxes may be aimed at taxing interest income, but the introduction of such taxes will increase the sensitivity of the METR to inflation. In addition, the governments of these countries should develop financial markets to increase the ability of firms to utilize direct debt finance and to reduce the loan-deposit margins.

The effect of increasing the tax depreciation rate on reducing the tax burden is higher than reducing the profit tax. In this regard, the tax depreciation rate as a tool reducing the tax burden may be preferred to the profit tax. This is also important in terms of bridging the gap between economic depreciation and tax depreciation as a result of inflation, as shown in Table 7. In Azerbaijan and Kazakhstan, the profit tax rate and depreciation rate are higher than in other countries (Table 1 and Table 5) and are more suitable for this condition. Thus, an increase in the tax depreciation rate should be preferred as a policy instrument to reduce the METR in Georgia and in Belarus.

Azerbaijan and Kazakhstan, with relatively resource-based economies, should reduce the tax burden on non-oil sectors in order to diversify their economies. Thus, the tax depreciation rate for machinery and equipment, with the exception of machinery and equipment in the mining industry, can be increased in Azerbaijan. In addition, the profit tax rate can be reduced with an increase in the mining tax rate in Kazakhstan.

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