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COMPARISON OF TAX REGIMES: VAT, COST STRUCTURE AND PRICE EFFECTS

Turg'unmirzayev Azmiddin Shamsitdin o'g'li
Kimyo International University in Tashkent, Namangan Branch
Acting Associate Professor, Department of Economics
Doctor of Philosophy (PhD) in Economics
ORG-ID: 0009-0007-2579-2410
WoS ID: PSL-6110-2026
A.Turgunmirzayev@kiut.uz
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Abstract: Comparing tax regimes solely on the basis of tax rates may mix differences in tax bases with the effects of value added tax (VAT). The purpose of the study is to compare a turnover tax regime with regimes involving VAT and corporate income tax under identical business conditions. An algebraic model, cash-flow consistency analysis, and sensitivity analysis were applied to a hypothetical resident legal entity using the general tax rates established by legislation. The model assumes that the sales volume remains unchanged, input VAT is fully creditable, expenses are deductible, and special tax incentives are excluded from the baseline calculation. Under initial revenue of UZS 800 million, purchases of UZS 500 million, and other expenses of UZS 100 million, the outcome under the turnover tax regime is UZS 108 million. Under the VAT regime, the outcome is UZS 97.14 million if the final price remains unchanged and UZS 170 million if VAT is fully passed through into the price. The break-even point is reached when the VAT pass-through coefficient reaches 14.90 percent, corresponding to a 1.79 percent increase in the buyer's price. The share of VAT-inclusive purchases and transitional-period tax incentives alter this threshold. The results are not a universal tax recommendation but a comparative model whose assumptions must be empirically verified.

Keywords: turnover tax, corporate income tax, price, value added tax, tax regime, cost structure.

Introduction. A regime with a lower tax rate is not necessarily economically preferable for every enterprise. Turnover, profit, and value added do not represent the same tax base; the ability to credit input VAT and the possibility of changing the selling price also affect the final outcome. Therefore, a direct comparison of 4 percent and 15 percent is insufficient. This article examines which variables should be explicitly defined when comparing tax regimes under equal conditions and at which values the outcomes converge.

The tax analysis in the Massachusetts Institute of Technology (2012) course material provides a theoretical basis for distinguishing the economic incidence of prices and the tax burden. The Organisation for Economic Co-operation and Development (OECD, 2017) guidelines on VAT provide a conceptual basis for viewing VAT across the chain of business purchases and sales. These sources do not establish tax rates for Uzbekistan. National rates and taxpayer statuses are taken from the Tax Code, while international approaches are used to interpret economic implications.

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Mirsobitov (2024) addresses the improvement of tax administration in supporting entrepreneurship. Although administrative convenience is important, the number of reports or a single tax rate alone cannot serve as a sufficient measure when comparing regimes. Accordingly, rather than evaluating procedures, this study focuses on identifying the conditions under which the outcome is equal when price, purchase composition, and tax bases are considered jointly. Administrative costs may be added later as a separate variable.

Research question: How do the share of VAT-inclusive purchases and the pass-through of VAT to the buyer price affect the economic break-even between the turnover tax regime and the regimes involving VAT and corporate income tax? The working assumption is that, when the ability to credit VAT and the degree of price adjustment are sufficient, a regime with a higher nominal corporate income tax rate may still produce a higher residual amount. However, this advantage should be re-examined when purchase composition, legal status, or the tax incentive period changes.

Materials and Methods.

Legal and Economic Boundaries

The legal basis consists of Article 258 of the Tax Code on the VAT rate, Article 337 on corporate income tax rates, and Articles 461 and 467 concerning taxpayers and rates of the turnover tax (Republic of Uzbekistan, 2019). For a typical resident legal entity, the calculation uses $a = 0.04$; $\tau = 0.15$; $v = 0.12$. These values are not universal for all activities and all taxpayers. The model excludes special rates, regional or sectoral incentives, dividends, interest, and reorganization cases from the baseline calculation.[1]

The enterprise is assumed to sell the same VAT-taxable product in the same quantity. Under the turnover tax regime, it is not a VAT payer and input VAT remains part of the cost structure. Under the alternative regime, sales are subject to VAT and all eligible input VAT is credited. During the accounting period, goods are assumed to have been sold, expenses are deductible for corporate income tax purposes, and all amounts are fully paid. Changes in inventories, depreciation differences, non-refundable VAT, and the effects of payment terms are excluded from this simplified model.

Article 337 of the Tax Code also provides an exemption for the following tax period for turnover tax payers who switch to corporate income tax for the first time from 2026. Therefore, the 15 percent calculation relates to a stable period without the incentive. A sensitivity case with $\tau = 0$ is presented separately for a period in which eligibility for the incentive and the relevant year have been confirmed; it cannot be applied to all enterprises or to every year of transition.[2]

The legal information refers to the version accessed on September 7, 2026. The model uses the general 4 percent turnover tax case for a legal entity; the separate regime for individual entrepreneurs and self-employed persons is not applied. Eligibility for the regime should be separately verified with reference to Article 461 and the relevant exceptions.

The conditions of the transitional rule in Article 337, the exceptions for dividend and interest income, and the restrictions for reorganized entities remain applicable. The $\tau = 0$ case in the model is not an independent conclusion that the entitlement exists; it is a calculation scenario for a verified incentive period.

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Equalization of Variables and Tax Bases

Table 1. Initial Conditions of the Comparative Model

Symbol	**Meaning**	**Value**
R	Buyer payments under the turnover tax regime	UZS 800 million
C	Value of purchases excluding VAT	UZS 500 million
W	Other expenses excluding VAT, including wages	UZS 100 million
θ	Share of purchases subject to VAT within C	1 in the baseline
λ	VAT pass-through coefficient to price	0 to 1
a; τ; v	Turnover, corporate income tax, and VAT rates	4%; 15%; 12%

Source: tax rates — the relevant general provisions of the Tax Code; monetary amounts, composition, and price parameters — the conditional model. The amounts are not actual firm-level reporting data.

R denotes final sales revenue before switching to the alternative regime. A 12 percent input VAT is added to the θ share of C; no VAT is included in the remainder. W aggregates other deductible expenses of the same amount. If social tax or other general expenses exist, they are kept within the same W under both variants. Dividend tax and the distribution of after-tax funds to owners are not included. Thus, the comparable outcome is the residual amount at the firm level.

$$ПА = (1 - a)R - C(1 + vθ) - W. \quad (1)$$

$$RB = R(1 + λv); \quad ПВ = (1 - τ)[RB/(1 + v) - C - W]. \quad (2)$$

In the first equation, the turnover tax is calculated on R, while input VAT increases the cost C. In the second equation, RB is the buyer payment, from which output VAT is separated to obtain net revenue. λ = 0 means that the final price is unchanged, whereas λ = 1 means that VAT is fully added to the initial price. Equation (2) is used under positive pre-tax profit. If negative profit or the carry-forward of losses arises, the model must be converted to a piecewise calculation.

Input VAT is vθC, output VAT is RBv/(1+v), and the amount assessed for payment to the budget is the difference between these two amounts. Net profit is also checked through cash flow: the buyer payment minus VAT-inclusive purchases, W, VAT paid to the budget, and corporate income tax should equal exactly ПВ. This check prevents the error of deducting VAT once as a cost and again as a tax. At the same time, the current model represents a case with a positive VAT payment; refund timing is not modeled separately.

Analytical Threshold for Equal Outcomes

$$Δ = ПВ - ПА = R[(1-τ)(1+λv)/(1+v) - (1-a)] + τ(C+W) + vθC. \quad (3)$$

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$$\lambda^* = \{[(1-a)R - \tau(C+W) - v\theta C](1+v)/[(1-\tau)R] - 1\}/v. \quad (4)$$

Equation (4) follows from the condition $\Delta = 0$. If Δ is positive, the alternative regime produces a higher outcome; if negative, the turnover tax regime produces a higher outcome. When v is positive and τ is less than one, Δ increases with λ. If λ^* lies between 0 and 1, an equal-outcome point can be reached at the same sales quantity and cost levels; if it is negative, the alternative regime is superior even when the price is unchanged; if it is greater than one, fully passing VAT through to the price is not sufficient. All calculations were checked using the algebraic solution and by recalculating the cash balance in Python.

Results

Table 2. Three Cases of VAT Pass-Through to Price, UZS million

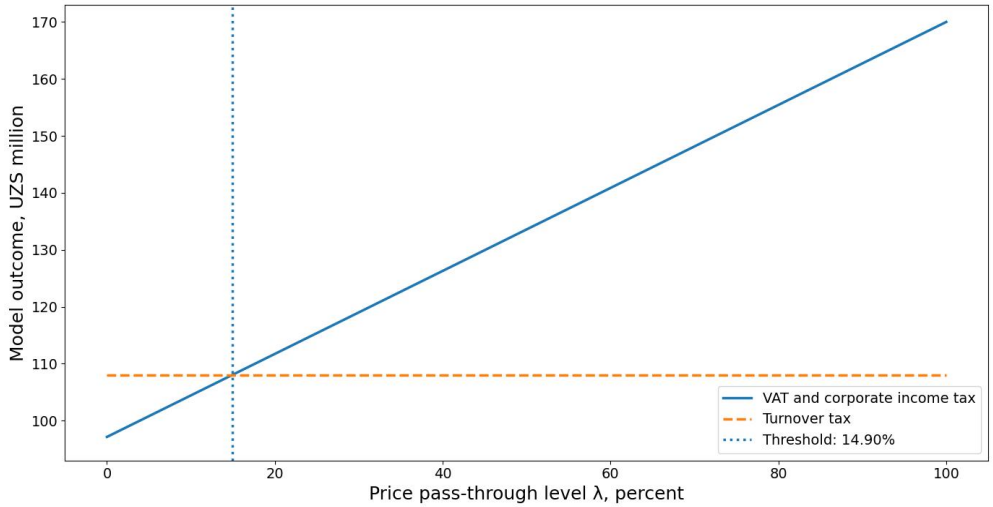
Indicator	**$\lambda = 0$**	**$\lambda = 0.5$**	**$\lambda = 1$**
Buyer payment RB	800.00	848.00	896.00
Revenue excluding VAT	714.29	757.14	800.00
Output VAT	85.71	90.86	96.00
Creditable input VAT	60.00	60.00	60.00
VAT difference	25.71	30.86	36.00
Corporate income tax	17.14	23.57	30.00
Alternative outcome ПВ	97.14	133.57	170.00
Turnover tax outcome ПА	108.00	108.00	108.00
Difference in outcomes Δ	-10.86	25.57	62.00

Source: calculations based on Equations (1)–(3). $\theta = 1$, $\tau = 0.15$. Sales quantity remains unchanged in all columns; the actual increase in the buyer price is 0%, 6%, and 12%, respectively.

Table 2 shows that the outcome under the turnover tax regime remains UZS 108 million. When VAT applies and the final price remains unchanged, revenue excluding VAT falls to UZS 714.29 million and the post-corporate-income-tax outcome is UZS 97.14 million. When half of VAT is passed through to the price, the outcome is UZS 133.57 million; with full pass-through, it is UZS 170 million. Thus, the statement that “VAT and a 15 percent corporate income tax are always more expensive” is not correct under this conditional calculation; rather, the advantage of the alternative regime depends on price pass-through and the VAT composition of purchases.

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Figure 1. Price Pass-Through Level and Outcomes under the Two Regimes



Source: calculation for R = 800, C = 500, W = 100 UZS million, θ = 1. The vertical line shows λ* = 14.90%. This is not a 14.90 percent increase in the buyer price; it is the share of the 12 percent VAT passed through to the price.

The analytical threshold is λ* = 0.14902, at which the outcomes are equal when 14.90 percent of VAT is passed through to the price. The increase in the final price is λ*v = 0.017882, or 1.79 percent. The buyers' total payment at this point is approximately UZS 814.31 million. Figure 1 clearly shows the outcomes on both sides of the equal-outcome point. However, if the assumption of unchanged quantity is not maintained, the actual threshold will also change; λ* by itself does not demonstrate that the enterprise can raise its price by that amount.

Table 3. Sensitivity to the Composition of Input VAT

Share of VAT-inclusive purchases θ	**ПА, UZS million**	**λ*, τ = 15%**	**λ*, conditional τ = 0**
0%	168.00	97.25%	62.67%
50%	138.00	56.08%	27.67%
100%	108.00	14.90%	-7.33%

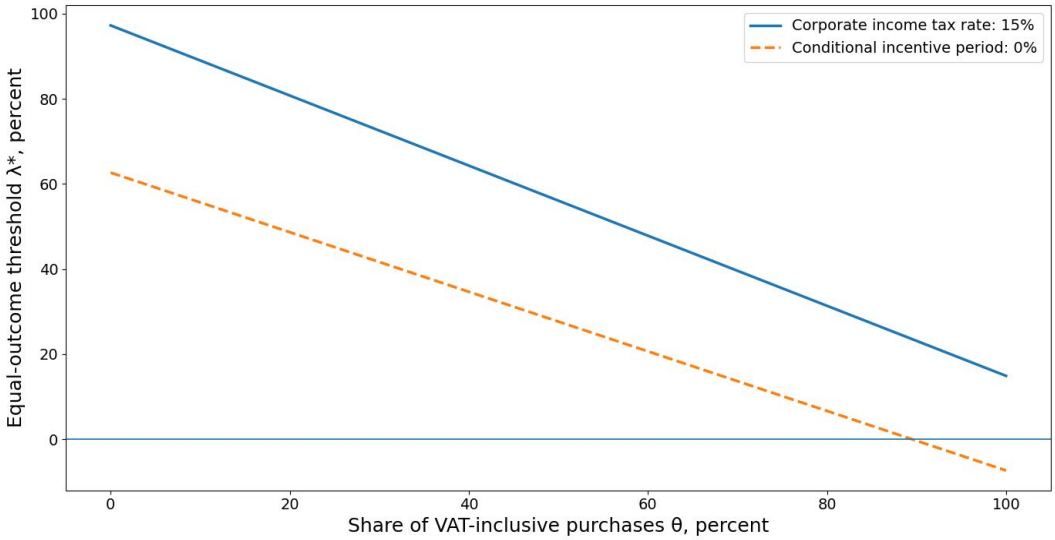
Source: Equations (1) and (4). The amounts of C and W excluding VAT are held fixed. A negative λ* is a mathematical threshold and does not, in practice, imply an obligation to increase the price by a negative amount.

Table 3 shows that when θ = 0, there is no input VAT cost under the turnover tax regime, and its outcome equals UZS 168 million. The alternative regime then requires λ to approach 97.25 percent to reach equal outcomes. When θ = 0.5, the threshold is 56.08 percent; when θ = 1, it is 14.90 percent. Thus, the ability to document purchases with VAT invoices and the economic cost structure remain

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important even when sales volume is identical. This result is not a basis for artificially creating invoices or misclassifying transactions: θ must relate only to genuine, documented purchases.

Figure 2. Effect of Purchase Composition and the Incentive Period on the Equal-Outcome Threshold



Source: Equation (4). Solid line — period without the incentive; dashed line — τ = 0 case in a period for which eligibility for the incentive has been separately confirmed. A downward shift of the lines indicates a reduction in the degree of price pass-through required for the alternative outcome.

When eligibility for the incentive is confirmed and τ = 0, with θ = 1 and λ = 0, the alternative outcome is UZS 114.29 million. This is UZS 6.29 million higher than the UZS 108 million outcome under the turnover tax regime. In Figure 2, λ* moves into negative territory under these conditions. Therefore, combining a year with a transitional-period incentive and a year without the incentive in a single 15 percent calculation is incorrect. A long-term decision should rely not only on one favorable period but also on the outcome after the incentive expires.

Discussion. In the simplest model that ignores VAT and price effects, the turnover tax is aR, while corporate income tax is τmR, where m is the profit margin relative to the same revenue. Equality of the taxes gives $m^* = a/\tau = 26.67$ percent. However, this rule works only when revenue, costs, and VAT conditions are the same. In the fuller model presented in this article, input VAT is a cost under one regime and is credited under the other, and the final price may also change. Therefore, the 26.67 percent threshold cannot be applied as a ready-made answer to all enterprises.

Full price pass-through does not mean that sales volume will remain unchanged. The final consumer may be sensitive to a higher price, while a VAT-registered buyer may focus on the price excluding VAT. Therefore, buyer type and demand elasticity constitute a separate layer of the next model. When sales volume declines, the variable component of C may decrease, while the fixed

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component of W may remain unchanged. In that case, demand and cost functions must be evaluated jointly instead of relying on an equal-quantity algebraic threshold.

Administrative costs and the time value of money may also differ. Electronic documentation, bookkeeping, the conditions for VAT credit, or refund timing distinguish the model's net residual from the cash balance at a given point in time. If an additional administrative cost K arises under the alternative regime, its after-tax effect is deducted from Δ and the equal-outcome threshold increases. However, instead of inserting an unverified figure for K, it should be measured using actual labor and service costs. This study assumes such costs to be zero; it does not claim that they are absent in practice.

The decision procedure should be as follows: first, the legal status of the entity and its eligibility for the regime should be verified; next, revenue, VAT-inclusive purchases, deductible expenses, and incentives should be identified for the same period; only then should equal-condition calculations and sensitivity analysis be performed. A calculation showing a more favorable outcome does not create a right to choose a regime that is not permitted by law. In particular, special rates, exemptions, and mandatory transitions should be introduced as initial constraints rather than as simple percentages in the general formula.

Because the study does not rely on a sample of real enterprises, it does not estimate average effects, a causal coefficient, or the outcome of a policy reform. Its scientific value lies in the explicit equal-outcome condition, the cash-flow check that prevents double deduction of VAT, and the separation of the incentive period. In teaching, this calculation helps connect tax bases, VAT, corporate income tax, and turnover tax within a single practical setting. Pedagogical effectiveness is not presented as a quantitative result because it was not evaluated separately.

Conclusion. Selecting a tax regime based on the nominal tax rate may lead to an incorrect interpretation of the economic outcome. In the conditional model with UZS 800 million in sales, the VAT and corporate income tax case produced an outcome UZS 10.86 million lower than the turnover tax regime when the price remained unchanged; when VAT was fully passed through to the price, the outcome was UZS 62 million higher. Equalization occurred at $\lambda = 14.90$ percent, corresponding to a 1.79 percent increase in the final price. This threshold is sensitive to the composition of VAT-inclusive purchases and the incentive period. The practical conclusion is that legal eligibility, a consistent calculation base, input VAT, pricing policy, and the time factor should be examined together. The reported results constitute a model showing these conditions and are not a uniform recommendation for all entrepreneurs.

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