



Influence of Corporate Income Tax to Loan Loss Provision: Evidence from Uzbekistan

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ABSTRACT

This article is devoted to the analysis of the impact of corporate income tax on compulsory reserves created by commercial banks for possible loan loss provision. In the majority of countries banks are required to create compulsory reserves for potential loan loss provisions, and the corporate tax regime applies tax deductions to these compulsory reserves. The corporate tax system facilitates timely coverage of potential loan loss provision. In addition, corporate taxation is an essential factor in the transparency of banks' financial statements. The research has revealed that reserves for potential loan loss provision are used primarily for profit regulator purposes, not to regulate capital. This implies that when deducting the amount of total reserves for tax purposes of banks the loan loss provision is positively related to the corporate income tax rate. The analysis of the selected commercial banks has confirmed that the impact of corporate income tax is more significant for the timely admitting potential loan loss provision when deducting general reserves from the tax base, mainly for the purpose of taxing banks' profits. According to the results, an increase in the tax rate by an average of 1% could lead to an increase in the amount of required loan loss provision by 3.9%. This means that when total reserves are deducted for tax purposes, the underlying hypotheses that compulsory reserves for loan loss provisions are positively correlated with the corporate income tax rate and that the amount of loss reserves is increased at the income tax rate have been confirmed. In general, the following aspects are crucially important in the taxation of profits of commercial banks: which method is more convenient for loan loss provision (write-offs or formation of reserves); entire or partial compliance between the taxation and regulation of reserves for loan loss provision; imposing restrictions on the application of tax deductions to reserves for possible loan loss provisions.

KEYWORDS

bank, loan, tax, loan loss provisioning, tax rate, corporate income tax, tax deduction

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Влияние налога на прибыль на резерв по кредитным убыткам: доказательства из Узбекистана

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АННОТАЦИЯ

Данная статья посвящена анализу влияния налога на прибыль организаций на обязательные резервы, создаваемые коммерческими банками на возможные потери по ссудам. В большинстве стран банки обязаны создавать обязательные резер-

вы на возможные потери по ссудам, а режим корпоративного налогообложения предусматривает налоговые вычеты из этих обязательных резервов. Кроме того, корпоративное налогообложение является важным фактором прозрачности финансовой отчетности банков. Исследование показало, что резервы на возможные потери по ссудам используются в основном в целях регулирования прибыли, а не капитала. Это означает, что при вычете суммы совокупных резервов для целей налогообложения банков резерв на возможные потери по ссудам положительно связан со ставкой налога на прибыль организаций. Анализ выбранных коммерческих банков подтвердил, что влияние налога на прибыль более существенно для своевременного признания резерва на возможные потери по ссудам при вычете общих резервов из налоговой базы, в основном для целей налогообложения прибыли банков. Согласно результатам, увеличение налоговой ставки в среднем на 1 % может привести к увеличению суммы необходимого резерва на возможные потери по ссудам на 3,9 %. Это означает, что, когда общая сумма резервов вычитается для целей налогообложения, основные гипотезы о том, что обязательные резервы на покрытие возможных потерь по ссудам положительно коррелируют со ставкой налога на прибыль, и что сумма резервов на возможные потери увеличивается по ставке налога на прибыль, были подтверждены.

КЛЮЧЕВЫЕ СЛОВА

банк, кредит, резервы на возможные потери по ссудам, налоговая ставка, налог на прибыль организаций, налоговый вычет

1. Introduction

In the period of post-global financial crisis of the world, the main attention of economists [1–3] is focused on evaluating the impact and negative consequences of the current corporate profit tax system on the stability of the financial sector.

In the conducted studies, most economists [3–6] focused on the negative impact of corporate taxation on the activity of commercial banks. In particular, in a number of studies, the preferential status of debt financing in the corporate tax system, the incentive of commercial banks to excessive debt financing, and the impact of them as a result the occurrence of the financial crisis have been studied.

When determining the taxable tax base in commercial banks, the amount of loan loss provisioning is included in the deductible expenses. According to economists, the loan loss provisioning is based on the damage model and increases during crises, but this type of taxation in favor of banks it has been found that the approach leads to non-transparent management of the formed reserve for losses and income smoothing.

In particular, Laeven & Majnoni [7] noted, banks appear to have increased the amount of provisions during periods of positive profits but at the same time they

have been less prudent during periods of rapid credit growth. Reserves increase during periods when earnings are higher, suggesting earnings smoothing [8]. Bank income smoothing with loan loss provisions varies across countries depending on institutions, regulation, supervision, financial structure, and financial development [9]. Banks exploited provisioning discretion to boost earnings [10]. If banks provision more in times when earnings are higher, then we would expect a positive relation between earnings before provisions and taxes (EBPT) and loan-loss provisions. The banks accumulate additional provisions when their earnings are higher [11].

In this research paper, we investigate whether changes in the corporate profit tax rate affect the amount of reserves formed for possible loan losses. In particular, the impact of the tax rate on the formation of provisions for loan losses is evaluated. Banking regulators and policymakers say that the deduction of provisions for possible loan losses from the tax base, in turn, ensures timely recognition of loan losses.

On the other hand, Basel's regulatory capital requirements under Pillar I are designed to cover unexpected losses because expected losses have been recognized by loan loss provisioning and hence deducted from bank capital [12].

The value of the tax credit depends on the profit tax rate, after the total deduction of general reserves formed for possible losses on loans in the taxation of banks' profits. As a result of deducting general reserves formed for possible losses on loans, higher provisions can be costly to bank managers if regulatory scrutiny increases as a result of lower capital ratios, or if compensation decreases as a result of lower earnings [13].

Thus, it is an empirical matter to determine whether the corporate profit tax rate has an economic effect on the formation of these reserves when the general provisions formed for possible loan losses in the corporate profit tax system are deducted. There are also mechanisms by which the corporate profit tax system may affect the formation of provisions for possible loan losses. First, the system could encourage banks to recognize loan portfolio deteriorations in the provision in a timelier manner. This is often referred to as timely loan loss recognition. Alternatively, the corporate tax system could encourage greater loan risk-taking if banks anticipate the tax deduction benefits generated by provisions when deciding on the riskiness of their loan portfolio.

These mechanisms have very different regulatory implications: prior research [14] associates the former with greater transparency because it provides timely signals of bank health and risk-taking to regulators and creditors, whereas the latter suggests that taxation could have a potentially destabilizing effect on the banking sector [15].

The purpose of our research is to show that in the current system of taxation of profits of commercial banks, the volume of reserves for possible losses on loans depends on the tax rate and that banks use reserves mainly as a regulator of taxable profits. In the conducted research, it is assumed that loan loss provisions are more sensitive to the corporate income tax rate.

The main hypothesis that loan loss provisions are positively related to the corporate income tax rate when the total amount of provisions is deducted for tax purposes.

Article structure. Section 2 of the article provides an overview of theoretical

and empirical literature within the scope of the research topic, section 3 describes the research methodology and methods used, section 4 assesses the impact of the corporate income tax rate on the formation of reserves for possible loan losses and discusses the results of the analysis, appropriate conclusions and suggestions are made in the section 5.

2. Literature review

The first part of this section provides a review of the scientific literature sources on the promotion of timely admitting of losses on loans in the corporate tax system, which contributes to the transparency of banks and creation of reserves. The next part of this section provides an overview of the empirical literature on assessing the impact of corporate taxation on loan loss provisions.

2.1. Theoretical literature review

Provision for bad debt or loan loss provision, is a deduction from bank net interest income to cover expected credit losses on bank loan portfolio. Bank regulators continue to stress that loan loss provision should be sufficient to minimize loan loss on bank loan portfolio. However, emerging empirical studies suggests that bank managers may have other incentive(s) to influence or manipulate reported loan loss provision estimates other than mitigating expected credit loss [16].

The primary financial accounting expense for a bank is the loan loss provision [17]. Loan loss provisions account for more than half of banks' total accruals and explain a very large fraction of the variation in total accruals [18]. When banks create loans, there is an expectation that some portion of them will go bad, resulting in losses for the bank.

Therefore, banks recognize a provision at loan initiation equal to the expected loss on the loans. For certain types of loans, such as mortgage and consumer, banks will recognize a general loan loss provision. The assumption underlying the general provision is that some loans in the portfolio may already have incurred losses, although they have yet to be spe-

cifically identified. For other loan types, such as corporate loans, the provision is based on the economics of that particular loan and is referred to as a specific loan loss provision [13].

A bank weighs the benefits and costs when determining the current period's loan loss provision. The benefits of increasing the current period provision for expected losses come primarily from having a higher loan loss reserve and thus being better able to absorb expected future losses. Regulators prefer banks to have higher loan loss provisions and loan loss reserves for this very reason [19].

The drawbacks of increasing the loan loss provision in anticipation of future losses include lower current earnings, which could affect the stock price and executive compensation [20], and lower capital ratios, which could attract the scrutiny of bank regulators, especially for banks that are already poorly capitalized [21].

In particular, they noted that the application of large-scale tax incentives to debt financing would lead to significantly higher bank lending and that this was more likely to be related to the likelihood of a crisis. In addition, the reduction of tax discrimination between debt financing and capital financing will cause an increase in the level of capitalization of financial institutions. In the opinion of Schepens [6], the ratio of debt to private capital is related to the growth of bank capital ratios and the growth of total capital.

In recent years, legislative bodies and regulatory authorities have considered the possibility of enhancing tax deductions on reserves for loan loss provisions. This is since tax deductions ensure that losses are reflected in the relevant reporting period. However, insufficient number of empirical studies have been conducted to assess the impact of the corporate income tax system on loss reserves. It is vitally important that tax incentives affect the formation of reserves for loan loss reserves because loss reserves are the most significant in the discretionary choice of financial reporting for banks [17]. Research on the banks' financial statements focuses on the financial reporting and risk assess-

ment of banks, their relationship to regulatory capital and profit management, and the study of economic decisions of banks under different accounting regimes [18].

De Vincenzo & Ricotti [22] argue that the corporate tax system encourages timely admitting losses on loans, which contributes to the transparency of banks' balance sheets. As mentioned above, the amount of reserves for possible losses on loans is relatively high as a share of the bank's total expenses, and changes in the amount of reserves can lead to significant changes in the structure of bank expenses.

It is obvious that the reserves created to cover losses on bank loans perform as a cushion. Herewith, loan loss provisions are included in deductible expenses which causes a reduction in net profit and regulatory capital (due to a decrease in retained earnings).

In general, the corporate tax system encourages loan losses to be reflected in due time. Moreover, corporate taxation is an essential factor in the transparency of banks' financial statements. In most countries, banks are required to create loan loss provisions for financial reporting purposes, and the tax regime applies tax deductions to these reserves [20].

It is important to note that it is not obvious that tax incentives will have an economically important impact on loan loss provisioning. As mentioned earlier, higher loan loss provisions are costly to bank managers in several ways. First, lower capital ratios can attract regulatory scrutiny, which in turn can lead to negative outcomes for bank managers such as restrictions on lending behavior or bank closure [21].

2.2. Empiric literature review

Several previous studies have confirmed the use of loan loss reserves as an income regulator [23–26]. Also, because of further studies, it was determined that the provisions for possible losses on loans are used for income smoothing.

Anandarajan et al. [27] found that publicly traded banks in Australia engage in this practice of earnings management, while Perez et al. [28] analysis of bank

data from 1982–2002 confirmed the use of loan loss reserves as an earnings regulator by 142 banks in Spain [27; 28].

Leventis et al. [29] using a sample of 91 EU banks, found that income smoothing is more pronounced among risky banks, but this smoothing behavior is less aggressive after implementation of IFRS.

El Sood [30] found strong evidence for income smoothing in a study of US bank data.

Balbao et al. [31] analysis using data from 9442 US banks from 1999 to 2008 suggests that banks use reserves to smooth earnings, but this relationship may depend on non-linear models. In general, because of most conducted empirical studies, it was determined that banks use reserves for possible losses on loans as a regulator of income.

The results of the research presented above can be cited as the reason for putting forward the hypothesis that there is a positive correlation between the amount of reserves formed for possible loan losses and the corporate profit tax. Of course, when the corporate tax system has tax deductions for general reserves formed against possible loan losses. This suggests that when the corporate profit tax rate is high (low), to minimize the volatility of earnings or to avoid regulatory inspections, commercial banks tend to increase (decrease) the total reserves formed for possible loan losses [19]

While in some countries banks are allowed to deduct general provisions for losses for tax purposes, in the tax system of other countries only discounts on reserves for certain impaired loans are allowed or there are no tax deductions at all [13]. High levels of reserves can create negative situations for bank managers. That is, an increase in the minimum demand for capital or a low return on income causes a decrease in profitability. In our opinion, the analysis of the economic impact of the corporate tax system on the formation of loan loss provisions constitutes an empirical issue.

In particular, Andries et al. [13] analyzed the impact of the corporate tax system on the financial statements of banks, considering losses on loans. The analysis

used the data on average interstate income tax rates for 2001–2013 and tax deductions for loan loss provisions. According to the results of the analysis, 1 percent increase in the corporate income tax rate in countries, where tax deductions for total reserves for loan loss provisions applied, would result in an average increase in reserves of 4.9 percent.

Moreover, the delay in determining the expected loss will cause an increase in the following 3 different levels of risk associated with banking activities: a decrease in the balance sheet of certain banks, a decrease in systemic risk sensitivity and an increased risk of shrinking the overall banking sector [14]. In addition, the delay in determining the amount of expected losses is associated with a high risk of leading to a significant reduction in the balance sheets of banks during periods of economic downturn. Furthermore, high probability of delay in determining the expected loss in banks can result to systemic risk.

Based on the study of US banks during the financial crisis of 2007–2009 made by Gallemore [15], there was a negative correlation between delay in admitting losses on loans and likelihood of intervention of regulatory authorities. The results of this study are justified by the fact that the delay in admitting losses on loans may affect the decision of the regulatory authorities. In addition, it has been demonstrated that the impact of the corporate taxation system on loan loss provisions varies from country to country.

First, it has been witnessed that in countries where the corporate income tax system has a great influence, regulators have relatively low oversight powers, and it has been noted that encouraging reserves for losses in the corporate tax system could replace banking regulators.

Second, it has been observed that in countries with high compliance of tax returns, the impact of the tax system on reserves is stronger. Finally, the impact of the tax system on the formation of loan loss provisions may have other consequences for commercial banks. For example, when studying the situation with the

US banks during 2001–2013, it is obvious that the increase in assets at most banks was estimated at 500 million USD due to restrictions on reserves. This justifies the fact that the corporate tax system can definitely impact the amount of bank assets to be within certain limits [15].

It is clear from the statements specified above, there is strong evidence that the amount of reserves will increase at the level of the income tax rate if the reserves on losses in the corporate tax system are not taxed. In addition, the study concludes that the impact of the corporate tax system, rather than the increase in risks, will be essential for timely admitting of losses on loans. Herewith, the corporate tax system can replace the regulatory rules for banks by encouraging banks to enhance reserves for loan loss provisions and admitting losses on loans in the corporate tax system in due time can result in the transparency of the banking system.

3. Research methodology

3.1. Representation of statistical data

In this research paper, we have used the statistics of “Ahbor-Reyting” rating agency on the banking sector in 2012–2018 and the financial statements of branches of “Qishloq Qurilish Bank” JSCB during 2013–2018.

In assessing the impact of the corporate profit tax on the reserves for possible losses on loans in banks, data on the reserves formed for possible losses on loans in the sector of banks for the years 2013–2018 were obtained from the head offices of “Qishloq Qurilish Bank” JSCB. Also, information on profit tax rates for 2013–2018 was obtained from the official website of the State Tax Committee.

In the formation of statistical data for empirical analysis, the amount of reserves for possible losses in 2016–2018, i.e. the total amount of reserves formed for possible losses on loans in the regional branches of the “Qishloq Qurilish Bank” JSCB as a dependent variable, and the effective rate of corporate profit tax established for commercial banks were taken as an independent variable.

3.2. Methods applied in the research

Theoretical and empirical methods were used in the study based on the purpose of assessing the impact of the corporate profit tax rate on the amount of reserves formed by banks for possible losses on loans. In commercial banks, the amount of reserves for possible losses on loans within the norms set by the Central Bank is included in the deductible expenses when determining the profit tax base, which leads to incentives for recognition of reserves by banks. Because commercial banks have more flexibility with respect to total reserves formed for possible loan losses, reserves may be sensitive to the impact of tax credits when tax deductions are applied to total reserves. On the other hand, setting restrictions on the application of tax deductions for possible loan loss reserves means that banks have to wait until it is clear that the loans will be impaired.

Based on this, it is worth noting that in the corporate profit tax system, the profit tax rate may not be the main determinant in the formation of reserves when there is a limit on the application of tax deductions to reserves for possible losses or a write-off method for losses on loans.

However, it has been determined that the amount of tax deductions for the total reserves for probable losses (if allowed) may increase due to the different corporate income tax rates in different countries. In particular, as a result of a number of empirical studies, when tax deductions are applied to the general reserves formed for possible credit losses, it was determined that the increase in the amount of the reserve is not related to the level of risks, but to the increase in the corporate profit tax rate [13].

Based on this, it was concluded that the amount of reserves for loan losses is directly related to the corporate profit tax rate when the total amount of reserves is deducted in the taxation of commercial banks' profits.

Theoretical methods were used to study whether the amount of reserves for loan losses in the corporate profit tax sys-

tem depends on the tax rate. Including, such methods as comparative analysis, monographic observations, and descriptive statistical methods have been widely used in the research.

To test our hypothesis, we panel data using a regression model, a regression analysis has been made to assess the impact of corporate income tax on reserves for possible loan loss provisions. The OLS method was used to estimate the impact of corporate income tax on loan loss reserves in banks, based on the variant of the loan loss reserves model proposed by Bushman & Williams [14]. Specifically, we use a panel data regression model with the following overview:

$$Y_{it} = \beta_0 + X_{it} + \varepsilon_{it}. \quad (1)$$

The unit of observation is the bank-year, with i indexing firms, c indexing countries, and t indexing years. The dependent variable LLP is the loan loss provision scaled by lagged total loans. The primary independent variable is the interaction between tax rate. Tax rate is the top statutory corporate income tax rate (demeaned when used in the regressions).

4. Analysis and results

4.1. Reserves and on loan losses and taxation

The share of interest-bearing income in the total revenue of commercial banks was relatively high (72.49%), and the main income derived from the interest on loans. The share of interest-free expenses of commercial banks was high (34.44%), which main part constituted of the share of salaries and other operating expenses (including taxes and compulsory payments) (Table 1). Meanwhile it is obvious that the share of reserves for loan losses in the structure of expenditures has increased significantly.

Although admitting reserves for loan loss provisions is required to ensure the transparency of banks' financial statements, the procedure for the formation of these reserves in the tax regime makes a great impact. According to the Tax Code¹, allocations to reserves for losses within the norms established by the Central Bank are included in the deductible expenses of commercial banks.

¹ Tax Code of the Republic of Uzbekistan 2019. National database of the legislative acts, December 31, 2019, No. 02/19/SK/4256.

Table 1

Composition of income and expenses of commercial banks (%)

	2015	2016	2017	2018	2019
Income composition					
Interest-bearing income	60.97	61.23	52.49	67.44	72.49
Fee-based income	27.49	27.97	22.78	16.94	12.56
Income from foreign exchange	5.20	4.24	18.58	9.15	5.91
Income from investments	0.71	0.82	0.78	0.54	0.53
Other income	5.63	5.73	5.38	5.93	8.51
Expenses composition					
Interest-bearing expenses	39.49	39.97	34.18	44.85	50.57
Interest-free expenses, total	50.50	49.36	49.51	41.30	34.44
Including, salary	24.10	23.60	19.39	19.59	15.82
Other operating expenses	20.65	17.20	13.61	13.72	8.27
Other expenses	10.01	10.67	16.31	13.85	14.98
Including, reserves on loan loss provisions	5.33	5.43	11.45	8.95	11.78
Income tax	3.74	4.13	2.80	3.75	3.21

Note. Compiled according to: Rating Agency «Ahbor-Reyting 2019». Analytical review of the banking sector of Uzbekistan 2014–2019.

Moreover, according to the court decision, unpaid debts due to termination of obligations, bankruptcy, liquidation or death of the debtor or expiration of the claim period are considered bad debts, and the amount to be written off from the provision for doubtful debts should be deducted from the bad debts. Taxpayers may deduct the amount of expenses on bad debts written off from taxable profit, but in periods after the current reporting period, they are deductible for a period determined by the taxpayer's accounting policy, but which does not exceed ten years.

In addition, the taxpayer has the right to redistribute the losses within five years after the tax period in which the loss occurred, and the total amount of losses distributed should not exceed 50% of the taxable profit calculated in the current tax period. Banks create a certain amount of reserves to cover the expected losses on the loan portfolio to reduce credit risk.

Of course, assessment of reserves for losses, which is used to mitigate losses on the loan portfolio of banks, constitutes a tool for credit risk management. Reserves for losses on bank loans have always been on the focus of the regulatory authorities and developers of accounting standards because reserves have become an integral part of bank capital regulation. The results of the analysis illustrate that the delay in the formation of reserves for non-performing loans in most banks throughout the world until the period of cyclical economic downturn leads to an increase in the impact of the economic cycle on bank income and capital.

Herewith, given the differences in the formation of reserves for loan losses in different countries, the problems associated with the use of different methods of covering loan losses cannot be achieved without a full solution, thus it is quite impossible to achieve the goal of the new Basel agreements [7].

Basel-I requires banks to have at least 8 percent of regulatory capital in relation to risky assets and to cover the following three types of market, credit and opera-

tional risks. According to Basel-I², the loan loss provision constitutes 1.25% of the risk assets of tier II capital, and each country can raise this limit to meet the requirements for regulation of the banking sector. If the expected losses are greater than the reserves, banks should deduct the difference from equity (50% from tier I and tier II capital). When the expected losses are less than the reserves, banks must admit the amount of the difference up to a maximum of 0.6% of the risk assets of tier II capital³.

The standardized approach requires banks to identify risk categories based on external credit ratings. The main aim of the introduction of Basel-II standards is to introduce a risk-sensitive methodology to determine the minimum capital required to cover losses, especially losses on loans, which is based on three components: minimum requirements for capital structure, control and market discipline. The main objection to the system of creating reserves for losses on loans under the requirements of Basel-II has been the fact that creation of compulsory reserves for losses is implemented once a year (at the beginning of the year or quarterly or semi-annually).

This implies that the level of provisions for loan losses in relation to a particular loan is determined from the outset based on a set of criteria specific to certain borrowers and banks. In Basel III, the system of reserves for loan loss provisions requires banks and financial institutions to create reserves for subsequent loans based on the individual characteristics of the borrower, which determines the efficiency of loans.

In particular, the formation of compulsory reserves for losses on loans by commercial banks in the country is implemented in reliance upon the Regulation on the classification of asset quality and

² BCBS 2001. Basel committee on banking supervision. The New Basel Capital Accord, consultative document. <http://www.bis.org>

³ BCBS 2004. Basel II: International convergence of capital measurement and capital standards: A revised framework. Basel Committee Publications. No. 107, June. <http://www.bis.org>

the formation of reserves to cover losses on assets, developed by the Central Bank⁴. This Regulation implies creation of compulsory reserves for losses on loans in commercial banks, classified as “standard”, “substandard”, “unsatisfactory”, “doubtful” and “bad” (non-performing).

In particular, for standard loans extended by commercial banks this figure constitutes one percent of the amount of their outstanding principal debt (residual); for substandard loans this figure accounts for 10% of their outstanding principal debt (residual); for unsatisfactory loans this figure constitutes 25% of their outstanding principal debt (residual); for doubtful loans this figure accounts for 50% of their outstanding principal debt (residual); and for bad (non-performing) loans this figure constitutes 100% and the banks are obliged to create special reserves in the amounts specified above. In addition, assets placed with banks overseas are classified as standard and substandard based on downgraded ratings by “Standard & Poor’s”, “Fitch Ratings” and “Moody’s Investors Service”, and if the principal and (or) interest on these assets are overdue, they are non-performing.

⁴ Regulation 2015. “On the classification of asset quality in commercial banks and the order of formation and use of reserves to cover possible loan loss provisions”, state registration No. 2696.

The amount of the principal in the bad debts is covered by the reserves created by commercial banks for possible losses on loans. Covered bad debts and interest thereto must be reflected in the balance sheet of “Unforeseen circumstances” accounts within five-year period upon the date of transfer to the accounts in off-balance sheet items. Both principal and interest that have not been repaid within five years after transfer to these accounts may be written off in compliance with the decision of the Board of Directors approved by the General Meeting of Shareholders. According to the tax legislation, in determining the taxable profit of credit agencies, compulsory reserves on substandard, unsatisfactory, doubtful and bad loans are included in deductible expenses.

The data illustrate that the difference between problem loans (“unsatisfactory”, “doubtful” and “bad”) and required reserves for loan losses was rather high (Figure 1).

In reliance upon the statements specified above it can be assumed, that banks will increase their expenditures at the expense of required reserves and reduce taxable profits. This is because the amount of required reserves for potential losses on loans to commercial banks is classified basically on the basis of factors such as doubt about financial position or collateral

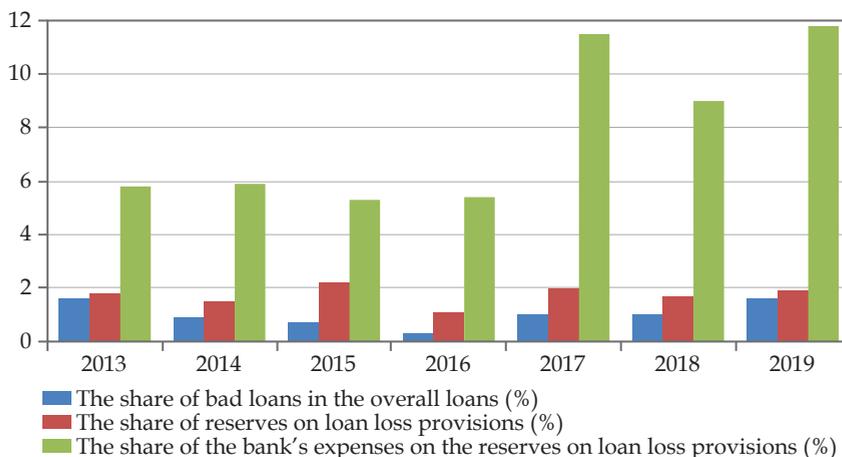


Figure 1. Compulsory reserves on loan loss provisions (in %)

Note. Compiled according to: Rating Agency “Ahbor-Reyting 2019”. Analytical review of the banking sector of Uzbekistan 2014–2019

oversight, insufficient information or collateral documents in the loan documents and delays in debt and interest payments. Furthermore, appropriate methods are not used in measuring the number of potential losses on assets (e.g., Value-at-Risk, VaR methodology).

In previous periods, the average amount of required reserves created for potential losses on risky operations of banks in the risky operations 4.6 times has exceeded the average amount of bad debts written-off (Figure 2).

For tax purposes, there is no single standard international practice for reserves for loan losses. In some countries, the write-off method is applied for loan losses, while in other countries the method of creating the reserves required for the regulatory accounting is used.

Taxation regimes of reserves on loan loss provisions vary greatly from country to country. For example, in Australia, Korea, Malaysia, and the Philippines, the write-off method is used, and only losses on bad loans are admitted in the corporate tax system. For tax purposes in the Philippines, bad debts are written off from the bank's accounting records and approved by the Central Bank. In several countries (Japan, Thailand) there are limits set for tax deductions for losses on loans. In particular, in Thailand, the amount of

reserves for losses on bank loans can be deducted from the tax base depending on which amount is less – either 25% of the amount of net profit or 0.25% of the total outstanding loans.

Herewith, the tax legislation stipulates those losses on loans can be written off only in cases where a civil case has been filed against the debtor or he has been declared bankrupt or died. Taxation of commercial banks in the United States is based on the general rules of corporate taxation, considering the exceptions provided for in the Internal Revenue Code adopted in 1986. A taxable base should be reduced by the amount of expenses on bad debts that were partially or completely depreciated during the reporting period. However, banks are imposed a limit for reserves to cover losses on bad loans. If assets of these banks constitute the amount of up to 500 million USD, then tax deductions on reserves for loan losses are allowed. The total amount of these reserves is determined by multiplying the amount of all loans of the bank by the amount of empirically determined losses (average for the past 6 years). The number of reserves for loan losses in Russian banks is set as follows: from 1 percent up to 20% for non-standard loans; from 21% up to 50% for doubtful loans; from 51% up to percent for problem loans; 100% for bad loans.

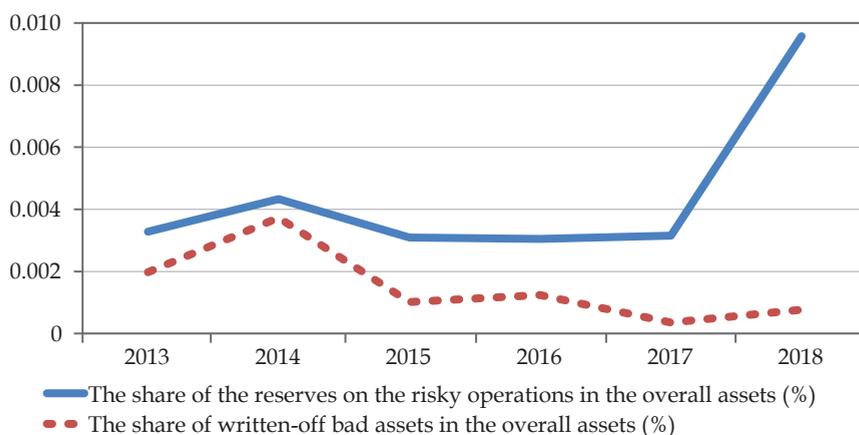


Figure 2. The share of the reserves on the risky operations and written-off bad assets in the overall assets, the period between 2013 and 2018

Note. Compiled according to: Report 2018. Statistical data of "Agrobank" JSCB and "Qishloq Qurilish Bank" JSCB for 2013–2018

However, there are opinions in the tax authorities that the banks are increasing the amount of reserves and that a certain part of the expenses is not economically justified. This means that the determination of the income tax base by the bank can make a significant impact on the outcome of the classification of loans into one or another category. This is because these expenses are subject to deduction from the income tax base in compliance with Article 315, paragraph 2 of the Tax Code. It should be noted, that tier II capital structure of banks includes reserves created on standard loans (assets) in the amount of not more than 1.25 percent of the amount of net assets, taking into account the risk for the current year, mixed liabilities (equity and debt capital), including preference shares, subordinate debt not exceeding one-third of tier I capital and the amount exceeding 45 percent of the appraised value of the initial value of assets.

In general, providing the banks with the opportunity to deduct tax on reserves for risky operations within the established norms, encouraging the recognition of reserves enable bank managers to operate more freely than total reserves for loan losses. Application of tax deductions to total reserves, in turn, can make reserves more sensitive to the effects of tax incentives. On the other hand, application of tax deductions only to certain reserves for loan losses implies that banks must wait until the depreciation of loans is precisely determined.

It should be noted that tax incentives for the formation of loss reserves demonstrate the following economically significant effects. First, it can have

negative consequences, such as having a minimum capital adequacy ratio, attracting particular attention of regulators, suspending banking activities for managers, or restricting lending activities. Second, reserves for loan losses can negatively affect the amount of dividends payable by reducing the balance sheet profit, causing a fall in stock prices.

4.2. Impact of corporate income tax on loan loss provisions

For tax purposes, when deducting compulsory reserves for potential losses on loans, to verify the basic hypothesis that reserves are positively related to the corporate income tax rate, we evaluate the following regression using the OLS method in reliance upon the reserve model for loan losses proposed by Bushman and Williams [14]:

$$LLP_{it} = \beta_0 + \beta_1 TAX RATE_{c,t} + \epsilon_{i,t}. \quad (2)$$

In our analysis of 42 branches of “Qishloq Qurilish Bank” in the period of 2016–2018 (i) (Y) is dependent variable which illustrates the amount of compulsory reserves on loan loss provisions (LLP) within the period of time (t) and the average income tax rate (TAX RATE) (X) determined as a free variable based on the share of interest income on loans in relation to the total income of the bank.

As a result of the regression analysis, the statistical significance of the effect of the income tax rate on the compulsory reserves for loan loss provisions has been found to be high (Table 2).

According to the results, an increase in the tax rate by an average of 1% could lead to an increase in the amount of required

Table 2

Results of the regression analysis		
	Lnlfp Random effects	Lnlfp Fixed effects
Lntaxrate	3.873*** (0.574)	3.932*** (0.582)
_cons	-5.337*** (1.546)	-5.476*** (1.557)
N	109	109
R ²	0.41	0.41

Note. Standard errors in parentheses; ***p < 0.01, **p < 0.05, *p < 0.1

reserves for loan loss provisions by 3.9% (which is about 9.4 million UZS). This implies that when deducting total reserves for tax purposes, the main hypotheses about the positive correlation of the compulsory reserves on loan loss provisions with the corporate income tax rate and the increase in the amount reserves on loss at the income tax rate have been confirmed.

In addition, loan loss provisions can lead to a loss of attractiveness of bank shares as a result of a reduction in the balance sheet profit of banks through compulsory reserves.

5. Discussion

According to Sunley [32], the tax treatment of bank loan losses is a controversial issue in a number of developing countries and countries with economies in transition. In order to ensure that banks do not reduce their provisions for probable loan losses and are incentivized by the current tax relief on loan loss provisions, banks and banking regulators generally want the recognition of loan losses to be closely linked to the accounting of tax regulations.

Tax authorities are often cautious about the regulations, and its adoption for taxation purposes leads to a significant reduction in the profit tax paid by banks [33]. According to Bassett & Zakrajšek [34], considering the importance of loans in bank assets and the value of bad debts, accounting for loan losses is a key issue of tax policy related to the taxation of banking activities. For example, in 2000, in the US, loans and leases accounted for 60% of bank assets, and loan loss reserves accounted for 21% of pre-tax profits.

Loan losses are unavoidable costs for banks to make a profit [35], and these losses must be recognized as expenses for financial and tax purposes [36]. More generally, banks can smooth their earnings by drawing from loan loss reserves if actual losses exceed expected losses and by contributing additional loan loss provisions to loan loss reserves if actual losses are lower than expected losses [7].

High tax rate countries that allow general provision deductibility, current provisions map strongly into future net

charge-offs. In contrast, this association is weaker within low tax rate countries that allow general deductibility. One explanation for this finding is that when the tax rate is low, the incentives are not sufficient to result in timely loan loss provisioning even though deductibility is permitted [13].

As a result of the above-mentioned empirical studies, when the amount of total reserves is deducted for the purposes of taxation of banks' profits, it is found that there is a positive relationship between loan loss reserves and the corporate profit tax rate. It follows that the impact of the corporate tax system is not the most important factor in the formation of reserves for possible loan losses, but the impact of the corporate tax system. The results of our empirical analysis confirm the main hypotheses of the previous research, namely, the positive relationship between the mandatory reserves for loan losses and the corporate income tax rate. found his confirmation.

6. Conclusion

In most countries, banks are required to make mandatory provisions for possible loan losses for financial accounting purposes, and tax deductions are applied to these mandatory reserves in the corporate tax regime. The corporate tax system encourages the timely recognition of potential loan losses. In many studies, it has been found that banks use loan loss provisions mainly for the purposes of profit reduction rather than for capital regulation. This is especially true in the periods after the Basel agreements, when the use of reserves in income management became more evident.

Banks have been found to use loan loss provisions to keep the level and volatility of high returns low in situations where earnings are very high and expected dividends are lower than current earnings. In addition, the formation of provisions for loan losses based on international financial reporting standards and US general accounting principles (GAAP), may lead to a reduction of Tier 1 capital and may be an additional burden on banks.

This study presents the results of the research on the impact of the corporate income tax system on the formation of provisions for possible loan losses. In turn, the results of this study are another scientific evidence of the use of reserves for possible losses on loans by commercial banks as a regulator of income. The effect of the corporate profit tax rate on the formation of reserves for possible losses on loans was studied in the study and was carried out based on the data of Agrobank and Rural Construction Banks in Uzbekistan. The results of empirical analysis revealed that loan loss reserves are positively related to the corporate income tax rate when the amount of total reserves is deducted in the taxation of banks' profits. Based on the obtained results, on average, a 1% increase in the profit tax rate can lead to a 3.9% increase in the amount of mandatory reserves for losses in Uzbekistan.

When taxing profits of commercial banks in Uzbekistan, if there are no restrictions on the deduction of reserves for loan loss provisions, the amount of reserves will increase at the level of income tax rate. This means that the impact of the

corporate tax system, rather than the increase in risks, is more essential for timely admitting loan loss provisions. For tax purposes, when total reserves are deducted, reserves for loan loss provisions are positively related to the corporate income tax rate, and tax incentives make a significant economic impact on creating reserves on possible losses.

Herewith, admitting loan loss provisions in the corporate tax system in due time can lead to the transparency of the banking system. Estimating the reserves for losses used to mitigate losses on banks' loan portfolios is considered a credit risk management tool.

The following aspects are crucially important in determining the procedure for taxation of compulsory reserves for loan loss provisions: (1) in determining taxable profit of the bank, which method is most convenient for loan loss provisions (write-offs or creating of reserves); (2) entire or partial compliance of reserves with taxation and regulation for possible loan loss provisions; (3) setting restrictions on the application of tax deductions to reserves for possible loan loss provisions.

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