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Evaluation of Corporate Income Tax Rates Reduction Policy: Case Study in Indonesia

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ABSTRACT

The reduction of the corporate income tax rate from 25% to 22% in 2020 is one of the Indonesian government's initiatives to hasten the country's economic recovery in response to the COVID-19 pandemic. In this paper, we aim to evaluate those policies' impact on other tax revenue policies. According to our estimation using the General Equilibrium approach and the Degree of Self Financing (DSF) method, the measurement results demonstrate that nearly a quarter of 93,8% from the total lost tax revenue resulting from the policy of lowering the corporate income tax rate will be made up for by an increase in other tax revenues in the form of: 17.55 percent of individual income tax revenue, 5.94 percent of VAT, and 0.000197 percent of Tax on Deposits. However, given that only a quarter of 93,8% from the lost corporate income tax revenue will be recovered, the government's decision to keep the corporate income tax rate at 22 percent in 2022 and beyond is still reasonable.

Keywords: degree of self-financing, general equilibrium, tax rate reduction policy

1. INTRODUCTION

1.1 Research Background

In accordance with the Law on Harmonization of Tax Regulations, one of the Indonesian government's efforts to support economic recovery efforts due to the COVID-19 pandemic is a fiscal policy that reduces the corporate income tax rate from 25% to 22%, effective in the 2020 tax year, and so on (HPP). This fiscal policy was first stated in the Job Creation Law as a form of government assistance to ease the burden on corporations and reduce the threat of layoffs (PHK) by employers amid the economic slowdown caused by the pandemic. The Government of Indonesia's efforts to implement a policy to reduce corporate income tax rates are part of the tax reform pillar, following the strategy of OECD member countries in the form of a broad base and low-rate tax, which means lowering rates followed by broadening the tax base. (OECD Tax Policy Reform, 2017).

However, those implemented policies might create disruption to overall tax revenue. The increasing of nation budget deficit limitation from 3% to 6,09% lead to growth debt to Gross Domestic Product (GDP) ratio to 38,7% in 2020, which implies there's decreasing capability of tax revenue to pay the debt because overall tax revenue in 2020 is approximately had similar figure

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in 2016 (Ministry of Finance, 2021). From this perspective, the authors think it's crucial to evaluate the corporate tax income reduction policy.

The main effect of the policy of lowering corporate income tax rates is a loss of tax revenue. Efforts to relax a tax object, on the other hand, will have an effect on increasing revenue from other tax objects (Gale and Andrew, 2016). Therefore, tax relaxation policy on corporate tax income rate that generate growth of economy for maintaining overall tax revenue is appropriate.

Sørensen (2014) used the General Equilibrium approach to simulate DSF calculations for Sweden. The calculation results show that the DSF level of Swedish corporate income tax is 38.5%, which means that the reduced corporate income tax revenue because of the tax rate reduction policy will recover from the increase in individual income tax, VAT, and tax on deposit interest with a total of 38.5%.

According to the Job Creation Law, the Indonesian government reduced the corporate income tax rate from 25% to 22% in the year 2020. In accordance with the Law on the Harmonization of Tax Regulations, the plan to reduce the corporate income tax rate gradually from 22% in the 2020 and 2021 tax years to 20% in the 2022 tax year was canceled, so the policy of reducing the corporate income tax rate remains at 22% beginning with the 2020 tax year. The policy of reducing corporate income tax rates will undoubtedly reduce corporate income tax revenue, but the economic climate will respond positively to this policy, resulting in an increase in tax revenues from other types of taxes (Gale and Andrew, 2016). So that it can be interpreted that the decrease in revenue from corporate income tax will be offset by an increase in revenue from other types of taxes, such as individual income tax, tax on deposit interest, and value-added tax. No one has, however, measured the level of DSF for the Corporate Income Tax rate reduction policy using the General Equilibrium approach prior to this point. Therefore, the authors intend to use the General Equilibrium approach and the Degree of self-financing (DSF) model in this paper to assess the impact of lowering corporate income tax rates in Indonesia on corporate income tax revenues in 2020.

2. THEORETICAL FRAMEWORK AND THE DEVELOPMENT OF HYPOTHESIS

2.1 The General Equilibrium Approach to Measure Tax Policy Distortions

Tax policies in general will cause distortions in the form of inefficiencies in market price formation. The imposition of a high tax rate in a country imposes an additional burden on both the producer and the consumer. This additional burden is known colloquially as Deadweight Loss. (Hines dan James R. Jr, 1999).

Harberger (1964) employs the General Equilibrium approach in measuring Deadweight Loss, which states that Deadweight Loss from imposing taxes on goods in a market can be measured by how much the tax affects the price of the goods and added by the interaction of reducing or increasing distortions due to taxes on substitutes that are not taxed in other markets because consumers are more likely to switch to goods that are less taxed or whose prices are not affected by the tax. The Harberger triangle – Deadweight Loss, which is formed by the area of the tax revenue box, the demand curve, and the normal supply curve without tax, is used to calculate the total deadweight loss from taxation.

According to Goulder and Williams (2003), calculating Deadweight Loss in the General Equilibrium approach can provide a more accurate description of the excess burden caused by price increases due to higher taxes than the Harberger Triangle formula (excess-burden triangle formula). However, the results will be less valid if the taxable goods used as a measure are important or cannot be easily replaced by economic activities based on experience or entertainment (leisure), as well as if the goods are complementary goods or substitutes for other highly taxed goods. Consider

commodity goods. Furthermore, changes or irregularities that arise because of tax fluctuations that affect the price of goods will have an impact on the active labor market.

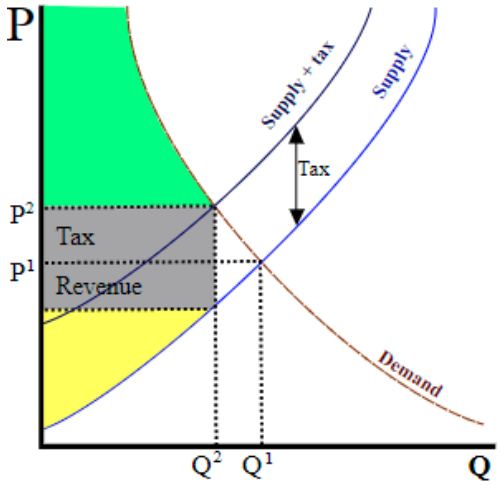

Figure 1 Harberger Triangle – Deadweight Loss
Source: Harberger (1964)

Additionally, James and Hines (2018) explain several empirical works that followed Harberger's effort to estimate welfare impact from the change of various tax objects, including labor supply (Browning, 1975), saving (Feldstein, 1978), corporate taxation (Shoven, 1976), and consumption of goods. However, there's major practical difficulties in measuring the excess burden of single taxes because it attempts to measure the interaction of various related variables from the implementation of taxes (James and Hines, 2018). Therefore, considering other decision margins is also important for evaluating the excess burden of the tax.

2.2 Degree of Self Financing (DSF)

According to Sørensen (2014), the formula for calculating his Deadweight Loss considers the types of taxes that generate the most revenue in Sweden, such as Individual Income Tax, Corporate Income Tax, VAT, and Tax on Deposit Interest. The formula is intended to empirically measure the Deadweight Loss on the imposition of various types of taxes and their implications for capital, labor, and taxable goods/services. Sørensen (2014) explains that, in addition to measuring Deadweight Loss, the formula can also be used to calculate the Degree of Self Financing (DSF), which is related to the effects of lower tax rates. DSF is a portion of the lost tax revenue as a result of a reduction in the rate of one type of tax, which will be recovered later through receiving of another type of tax because economic conditions respond positively to the tax rate reduction policy. DSF can be used as an indicator to calculate tax revenue generated by the policy of lowering tax rates.

3. RESEARCH METHODOLOGY

3.1 Method of Selection and Data Collection

The authors use DSF general formulas model (Sørensen, 2014) for measuring the impact of corporate income tax rate reduction policies as marginal deadweight loss and its implication to other tax revenue. The general equilibrium approach is used in the formulas because it covers the interaction from the burden excess of tax object and its interaction (Sørensen, 2014). The model relies on secondary data, so we collect the publicized data from the institution for utilizing this method.

The authors use publicized secondary data as follows:

1. The 2020 Indonesia's Inflation Rate Data based on report from Bank Indonesia (https://www.bi.go.id/en/statistik/indikator/data-inflasi.aspx);
2. The 2020 BI Interest Rate Data based on report from Bank Indonesia (https://www.bi.go.id/id/statistik/sdds/Default.aspx?id_file=14-010);
3. BI's total liabilities data for the implementation of monetary policy in 2020 based on report by Bank Indonesia (https://www.bi.go.id/en/publikasi/laporan/default.aspx);
4. The total realization of domestic and foreign investment for 2020 data based on the report from The Central Bureau of Statistics (https://www.bps.go.id/indicator/13/793/1/realisasi-investasi-penanaman-modal-dalam-negeri-menurut-provinsi-investasi-.html) and

(https://www.bps.go.id/indicator/13/1840/1/realisasi-investasi-penanaman-modal-luar-negeri-menurut-provinsi.html);

5. The data of Gross Domestic Fixed Capital Formation in 2020 based on the report from the Central Bureau of Statistics https://www.bps.go.id/indicator/169/2070/1/pmtb-menurut-lapangan-usaha.html;
6. Information on the total number of registered taxpayers for the year 2020 based on the DGT Performance Report for 2021 (https://pajak.go.id/id/tahunan-page);
7. Percentage-based data for the Indonesian consumer price index in 2020 based on the Central Bureau of Statistics Report https://www.bps.go.id/indicator/3/1709/1/indeks-harga-konsumen-90-kota-umum-.html;
8. Data on Indonesia's per capita income for 2020 is based on the Central Bureau of Statistics Report (https://www.bps.go.id/indicator/52/288/1/-seri-2010-produk-domestik-regional-bruto-per-kapita.html);
9. Data on profit returns on corporate bonds or stocks for 2020 based on the Pefindo Report (https://pefindo.com/pageman/page/file-list-18.php?fullpage=1&id=18).

3.2 Variable Operational Definitions

To answer the research question, the authors use the DSF calculation formula 1 for measuring the excess of burden on corporate income tax implementation toward other tax revenue such as individual tax revenue, VAT revenue, and interest tax revenue using the General Equilibrium approach.

$$\frac{dDWL/dtk}{dRs/dtk} - \left\{\frac{(mk\,(\varepsilon_P^K\left(\frac{\rho-\delta}{\rho}\right)+\theta^k\varepsilon_w^L}{1-tw}\right\} = \left\{\frac{\varepsilon_w^L\,tw}{1-tw}\right\} + \left\{\frac{(\varepsilon_w^L tc(1-\,tw))}{1-tw}\right\} + \left\{\frac{(tr\theta^s(\varepsilon_W^S}{1-tw}\right\} \quad (1)$$

The authors define the operational variable as follows:

ε_W^L : wage elasticity in relation to the number of active workers

Tw : the effective marginal rate of individual income tax with a deduction for social insurance purposes

Tc : the effective marginal rate of the VAT rate

Mk : the effective marginal rate of the corporate income tax rate

ε_P^K : the level of capital to capital user cost elasticity

ρ : the capital usage cost, consist of the sum of Indonesia's rate of return on capital, asset depreciation, and corporate income tax, all measured per unit of capital.

δ : the level of asset depreciation (using average method)

θ^k : proportion of investment to salary wages

θ^s : proportion of savings to wages and salaries

ε_W^S : level of wage elasticity of savings

Tr : the effective marginal rate of the tax rate on deposit interest

3.3 Data Analysis Method

Sørensen (2014) quantifies each variable in the previously described formula before calculating the DSF. The obtained secondary data is pre-processed to determine the effective marginal rate of personal income tax rates, the effective marginal rate of VAT rates, the effective marginal rate of corporate income tax rates, the marginal rate of tax rates on effective deposit interest, wage elasticity on the number of active workers, wage elasticity to savings, and the elasticity of the user's cost of capital to capital. Following quantification of these variables, they are summed according to the formula to determine the DSF level of personal income tax, corporate income tax, tax on deposit interest, and VAT due to the corporate income tax rate reduction policy.

4. RESULTS AND DISCUSSIONS

4.1 Determination of the Effective Marginal Rate of Individual Income Tax Rates

Before the author calculates the burden of excess on corporate income tax changes, the author should calculate the effective marginal rate of personal income tax rates for representing the difference between overall individual income tax rate with its deduction allowed and retirement consequences with actual individual income tax rate. For measuring the effective marginal rate of individual income tax, the author uses formula 2.

$$t^w = s + (1 - s)t^{wp} \quad (2)$$

According to Sørensen (2014), "s" is the total deduction allowed in calculating taxable income related to employees' social security needs when they retire because the formula considers the cycle of individual taxpayers when they are actively working and when they are entering retirement. If individual employees and individual entrepreneurs will set aside around 5% of their gross income for retirement purposes, the author uses the maximum total pension contributions per year as the value of s, which is 5% of gross income in one year. t^{wp} is an individual progressive tax rate with a weighted average of 18.75%. Based on the quantification results, the effective marginal rate of individual income tax is:

$$\begin{aligned} t^w &= 0{,}05 + (1 - 0{,}05)\ 0{,}1875 \\ &= 0{,}05 + 0{,}178125 \\ &= 0{,}228125 \end{aligned}$$

The result suggests there's 0,22 difference between effective marginal tax rates and actual income tax rates.

4.2 Determination of Corporate Income Tax Rates' Effective Marginal Rate

The author measure corporate income tax rate marginal rate for representing the difference between overall corporate income tax rate with fixed cost of capital, inflation, and net return related with the corporate. The author uses formula 3 for measuring the corporate income tax rate effective marginal rate.

$$m^k = \frac{t^k}{(\rho - \delta)} = (\rho - \delta - r)/(\rho - \delta) \quad (3)$$

ρ is the average value of ρ^d and ρ^e. ρ^d represents the value of the user cost of capital arising from debt, whereas ρ^e represents the value of the user cost of capital arising from investment. Using depreciation data (δ) of 0.106, data on the percentage difference between fiscal depreciation and gross domestic fixed capital formation growth (a) of 6.244%, data on corporate income tax rates (τ) of 16.5%, data on Indonesia's inflation in 2020 (π) of 2.03%, and data on Indonesia's net return on corporate capital ® of 6.78%, the calculations for ρ, ρ^d, and ρ^e are as follows:

$$\rho^d - \delta = r - \left[\frac{\tau}{1 - \tau}\right](\pi + ra)$$

$$\begin{aligned} \rho^d &= (0{,}0678 - (0{,}165/\ (1 - 0{,}165))\ (0{,}0203 + \\ &\quad (0{,}0678)(0{,}0624)) + \delta \\ &= 0{,}0678 - (0{,}165/0{,}835)\ (0{,}0226) + \delta \\ &= 0{,}0678 - 0{,}0044 + \delta \\ &= 0{,}0634 + 0{,}106 \\ &= 0{,}169 \end{aligned}$$

$$\rho^e - \delta = \left[\frac{r}{1 - \tau}\right](1 - \tau a)$$

$$\begin{aligned} \rho^e &= (0{,}0678/0{,}835)\ (1 - ((0{,}165)\ (0{,}0624))) \\ &\quad + 0{,}106 \\ &= ((0{,}081)\ (0{,}989)) + 0{,}106 \\ &= 0{,}186 \end{aligned}$$

$$\begin{aligned} \rho &= (\rho^d + \rho^e)/2 \\ &= (0{,}169 + 0{,}186)/2 \\ &= 0{,}177 \end{aligned}$$

After ρ is determined, the effective marginal rate of corporate income tax rates (m^k) can be determined as follows:

$$\begin{aligned} M^k &= (0{,}177 - 0{,}106 - 0{,}0678)\ /\ (0{,}177 - 0{,}106) \\ &= 0{,}0037/0{,}071 \\ &= 0{,}052 \end{aligned}$$

The result suggests there's difference 0,052 between effective corporate income tax rate with actual corporate income tax rate.

4.3 Determination of the Effective Marginal Rate of VAT Rates

The authors measure the effective marginal rate of VAT rate for determine the difference between effective VAT rate that considering every consumption, including house rent or selling with the actual VAT rate. The author use formula 4 to measure the effective marginal rate of VAT rate.

$$t^c = \beta_H t_H^c + (1 - \beta_H) t_o^c \quad (4)$$

$\mathrm{t_h^c}$ is the effective VAT rate on Taxable Goods or Taxable Services (*BKP/JKP*) related to renting or buying and selling houses in the amount of 10%, while $\mathrm{t_0^c}$ is the effective VAT rate on *BKP/JKP* goods other than those related to renting or selling houses. The level of distortion does not arise from the imposition of taxes affecting the price of *BKP/JKP* (βh) assumed to be 0 because VAT is imposed in Indonesia at a single rate across the board, resulting in distortions arising solely from the imposition of taxes. The effective marginal rate of VAT rate is calculated as follows:

$$\mathrm{t^c} = (1)\ (10\%) + (1 - 1)\ 10\%$$
$$= 10\% = 0{,}1$$

The result suggests there's 0,1 difference of effective VAT rate and actual VAT rate.

4.4 Determination of the Effective Marginal Rate of Income Tax Rate on Savings Interest

The authors measure effective marginal rate of income tax rate for determine the difference between effective income tax rate with actual income tax rate, inflation, and the amount of domestic and foreign investment. The authors use formula 5 for measuring the effective marginal rate of income tax rate on saving interest.

$$1 - t^r = \left[\gamma(1 - t^t)^{\emptyset+1} + (1 - \gamma)(1 - t^F)^{\emptyset+1}\right]^{\frac{1}{\emptyset+1}} \quad (5)$$

Before calculating the effective marginal rate of the Income Tax rate on deposit interest (t^r), the authors first calculate the personal deposit rate (t^F) and the institutional deposit rate (t^t) with a 2020 inflation rate (π) is 2.03%, the 2020 interest rate of The Central Bank of Indonesia (r) is 3.75%, the deposit interest tax rate (t^{ls}) is 20%, and the income tax rate on dividends (t^{Fs}) is 10% using the formula 6.

$$t^t = \frac{t^{ls}(r + \pi)}{r}$$

$$t^F = \frac{t^{Fs}(r+\pi)}{r} \quad (6)$$

$$\mathrm{t^t} = (0{,}2\ (0{,}0375 + 0{,}0203))\ /\ 0{,}0375$$
$$= 0{,}3082$$
$$\mathrm{t^F} = (0{,}1\ (0{,}0375 + 0{,}0203))\ /\ 0{,}0375$$
$$= 0{,}1541$$

After determining (t^F) and (t^t), the authors calculate the effective marginal rate of Income Tax on deposit interest with an elasticity level of personal and institutional savings ($\emptyset$) of 1, the total realization of foreign and domestic investment (S^F) in 2020 is 826.3 trillion rupiah, and Central Bank total liabilities for monetary policy implementation (S^l) in 2020 is 1,330.3 trillion rupiah using the formula explained by Sørensen (2014) as follows:

$$-t^r = \left[\gamma(1 - t^l)^{\emptyset+1} + (1 - \gamma)(1 - t^F)^{\emptyset+1}\right]^{\frac{1}{\emptyset+1}}$$

$$\gamma = \frac{s^l(1 - t^l)^{-(\emptyset+1)}}{s^l(1 - t^l)^{-(\emptyset+1)} + (1 - s^l)(1 - t^F)^{-(\emptyset+1)}}$$

$$s^l = \frac{1}{1 + \left(\frac{1 - t^F}{1 - t^l}\right)\left(\frac{s^F}{s^l}\right)} \quad (7)$$

$s^I = 1/1 + (1\text{-}0{,}1541/1\text{-}0{,}3082)\ (826{,}3/1.330{,}3)$

$= 1/1 + (0{,}8459/0{,}6918)\ (0{,}6211)$

$= 1/1{,}759$

$= 0{,}568$

$\gamma = 0{,}568\ (0{,}6918)^{-2}/0{,}568\ (0{,}6918)^{-2} + (0{,}432)\ (0{,}8459)^{-2}$

$= (0{,}568/0{,}6918^2)\ /\ (0{,}568/0{,}6918^2) + (0{,}432)\ /\ (0{,}8459)^2$

$= (0{,}568/0{,}478)\ /\ (0{,}568/0{,}478) + (0{,}432)\ /\ (0{,}715)$

$= 1{,}188\ /\ (1{,}188 + 0{,}604)$

$= 1{,}188\ /\ 1{,}792$

$= 0{,}662$

$1 - t^r = [(0{,}662)\ (0{,}478) + (0{,}338)\ (0{,}715)]^{0{,}5}$

$= [0{,}316 + 0{,}241]^{0{,}5}$

$= 0{,}746$

$t^r = 0{,}254$

The result suggests there's 0,25 difference of effective income tax from interest and actual income tax from interest.

4.5 Determination of Wage Elasticity of Labor

The authors measure wage elasticity of labor since it's an important variable on determining the DSF of Individual Income Tax Revenue. The author use formula 8 for measuring the wage elasticity of labor:

$$\varepsilon_w^L = \frac{\partial L}{\partial w}\frac{w}{L} \quad (8)$$

Previously, the authors calculate the value of labor elasticity (w) using the consumer price index in percentage (P) for 2020 of 1.56, per capita income (W) for 2020 of 54,580,000, and the number of registered active workers with Taxpayer Identification Number (NPWP) (L) in 2020 of 45.43 million using the formula 9 explained by Sørensen (2014) as follows:

$$w = \frac{W(1 - t^w)}{P} \quad (9)$$

w = (54.580.000) (1 - 0,228)) / 1,56
= 27.010.102

After determining (w), then wage elasticity of labor (ε_W^L) is as follows:

ε_W^L = (27.010.102) (1)/ (1) (45.430.000)
= 0,594

The result suggests that the change corporate income tax rate on individual income tax revenue had 0,594 elasticity.

4.6 Determination of Wage Elasticity of Savings

The authors measure the wage elasticity of saving since its related with income taxes revenue from saving. The authors use formula 10 for determining wage elasticity of savings.

$$\varepsilon_w^S = \frac{\partial S}{\partial w}\frac{w}{S} \quad (10)$$

The calculation of wage elasticity on savings (ε_W^S) is as follows, using a known (w) value of 27,010,102 and a (S) value of 1,330,363,586,000,000:

$\varepsilon_W^S = (1)\ (27.010.102)\ /\ (1.330.363.586.000.000)\ (1)$

$= 0{,}0000002$

The result of 0,0000002 suggests there's inelasticity on wage for the savings.

4.7 Determination of Capital Demand Elasticity on Capital User Costs

The authors calculate the wage elasticity of capital demand on the cost of using capital (ε_P^K) using the assumptions used by Auerbach and Kotlikoff (1987), with a value of ε_P^K of 1 because this value is consistent with empirical observations that conclude that the overall profit percentage of GDP is constant in the long run.

4.8 Determination of the Savings Portion to Salary Wages

The authors calculate the value of future consumption prices (p) to approximately estimate the decision to put salary to savings or consumption using formula 11.

$$p = \frac{1}{1 + r(1 - t^r)} \quad (11)$$

$$\begin{aligned} P &= 1 / 1 + 0{,}0375\ (1 - 0{,}254) \\ &= 1 / 1 + 0{,}0279 \\ &= 0{,}972 \end{aligned}$$

Based on the future value of consumption prices, the authors determine the percentage of saving to wages using formula 12.

$$\theta^s = \frac{prPS}{WL} \quad (12)$$

$$\begin{aligned} \theta^s &= (0{,}972)\ (0{,}0375)\ (1{,}565)\ (1.330.363.586.000.000)/ \\ &\quad (45.430.000)(54.580.000) \\ &= 756.471.342.271.320 / \\ &\quad 2.479.569.400.000.000 \\ &= 0{,}30 \end{aligned}$$

The result suggests that generally people put 0,30 portions of their total salary for saving.

4.9 Determination of Investment Portion to Salary Wages

For determining the DSF, the authors measure the investment portion to salary wages since it also implied to individual income tax on saving. The authors measure the investment portion to salary using formula 13.

$$\theta^k = \frac{(\rho - \delta)K}{WL} \quad (13)$$

4.10 Determination of DSF

After quantifying all the variables required, the authors calculate the DSF for each tax object using the formula described by Sørensen (2014) as follows:

$$\begin{aligned} \text{DSF Individual Income Tax Revenue} &= \left\{\frac{(\varepsilon^L_{W\ tw})}{1-tw}\right\} \\ &= (0{,}228125)\ (0{,}594)\ / \\ &\quad (1 - 0{,}228125) \\ &= 0{,}13550625 / 0{,}771875 \\ &= 0{,}1755 \\ &= 17{,}55\% \end{aligned}$$

$$\begin{aligned} \text{DSF Value Added Tax Revenue} &= \left\{\frac{\left(\varepsilon^L_{W\ tc\,(1-tw)}\right)}{1-tw}\right\} \\ &= (0{,}1)\ (1 - 0{,}228125)\ (0{,}594)\ / \\ &\quad (1 - 0{,}228125) \\ &= 0{,}0594 \\ &= 5{,}94\% \end{aligned}$$

$$\begin{aligned} \text{DSF Corporate Income Tax Revenue} &= \left\{\frac{\left(mk\,(\,\varepsilon^K_P\left(\frac{\rho-\delta}{\rho}\right) + \theta^k\,\varepsilon^L_W\right)}{1-tw}\right\} \\ &= ((0{,}052)\ (1)\ ((0{,}177 - \\ &\quad 0{,}10625)/\ 0{,}177) + (0{,}075) \\ &\quad (0{,}594))\ /\ (1 - 0{,}228125) \\ &= (0{,}0036) + (0{,}04455)\ /0{,}771 \\ &= 0{,}062 \\ &= 6{,}2\% \end{aligned}$$

The DSF from Corporate Income Tax revenue is 6.2% shows that the total loss of Corporate Income Tax revenue due to a decrease in the Corporate Income Tax rate is 93.8% because a decrease in tax rates has an effect on expanding the tax base (Gale dan Andrew, 2016).

$$\begin{aligned} \text{DSF from Income Tax Revenue on Deposit Interest} &= \left\{\frac{(tr\ \theta^s\ \varepsilon^S_W)}{1-tw}\right\} \\ &= (0{,}254)(0{,}30)(0{,}0000002)/ \\ &\quad (1\text{-}0{,}228125) \\ &= 0{,}00000197 \\ &= 0{,}000197\% \end{aligned}$$

The author measure total DSF for the policy of reducing corporate income tax rates in 2020 based on formula 1 is calculated and determined variable operation. The calculation results show that individual income tax revenue with a DSF rate of 17.55%, VAT revenue with a DSF rate of 5.94%, and revenue from Income Tax on deposit interest with a DSF rate of 0.000197% will recover 100% of the total decrease in corporate income tax revenue reduced by 6.2% DSF from corporate income tax itself.

5. CONCLUSION

According to our calculations, using Sørensen formula (2014), the total DSF of Corporate Income Tax, Individual Income Tax, VAT, and Income Tax on deposit interest for the policy of reducing Corporate Income Tax rates in 2020 is 29.690197 percent. These calculations indicate that 93.8% of the decrease in corporate income tax revenue caused by the policy of reducing corporate income tax rates will be offset by an increase in revenue from other types of taxes, namely 17.55 % from individual income tax, 5.94 % from VAT, and 0.000197% of Income Tax on deposit interest. The results implies that the corporate income tax loss because of the corporate tax reduction policies is not entirely diminishing overall tax revenue because it succeeds in generating growth in another tax base, such as: personal income, consumption, and interest, which led to maintain the overall tax revenue for reducing the debt to tax ratio and nation budget deficit as it envisioned.

6. IMPLICATIONS AND LIMITATIONS

The results of the DSF calculation of corporate income tax have implications for the policy of reducing corporate income tax rates in 2020, as the percentage of tax revenue returns from personal income tax ranks highest among the other variables. According to the mandate of the Job Creation Act, this indicates that the policy of reducing the Corporate Income Tax rate stimulates economic activity through an increase in active employment. The government's decision to maintain the Corporate Income Tax rate at a fixed level of 22% and not reduce it to 20% in 2022 in accordance with the Law on the Harmonization of Tax Regulations is deemed appropriate because reducing the Corporate Income Tax rate to 20% carries the risk of decreasing the proportion of Corporate Income Tax revenue that is greater in the state budget posture, taking into account that only a quarter of the 93.8% lost corporate income tax revenue can be replaced by other sources.

Despite DSF is useful for measuring the implication of tax rate changes on overall tax revenue, there's limitation on our data and the nature of this simulation. We rely on 2020 data in the formula to have a general picture of the implication of corporate tax policy reduction on tax revenue, but it can't be used as predictive estimation on the future. As suggestions for future research, the authors suggest measuring Deadweight Loss for the policy of increasing VAT rates in 2022 using the General Equilibrium approach as soon as the necessary data becomes available.

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