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# Firms' Financial Distress during the COVID-19 Pandemic and Fiscal Incentives

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## Key Messages:

- **Firms experience financial distress during the coronavirus disease (COVID-19) pandemic.** The Altman Z-score drops from 7.05 in 2015 to 6.34 in 2020 for Indonesian and Malaysian firms. The proportion of distressed firms increases from 24% in 2015 to 36% in 2020.
- **Financially distressed firms suffer from** a lack of liquidity, declining profits, lower retained earnings, and high dependency on external funding of debt.
- **Leverage levels of financially distressed firms (0.4) are higher than those of average firms (0.26).**
- **The impact of COVID-19 has varied across sectors.** Firms in three sectors – travel and leisure; infrastructure, utilities, and transportation; and retail – are severely affected.
- **Fiscal discretionary measures for the business sector** in the form of tax administration and tax measures have not been able to ease firms' financial burden during the pandemic.

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*The COVID-19 pandemic as an exogenous shock has affected the business sector by disrupting production and shrinking demand due to strict physical distancing. This study aims to measure firms' financial distress during the pandemic and examine the potential impact of fiscal incentives on financial performance in two countries, i.e. Indonesia and Malaysia, which have different fiscal policy incentives. A rich dataset comprising quarterly panel data of publicly traded companies between 2015 and 2020 finds that firms experienced increased financial distress during the pandemic. Moreover, despite government interventions to ease corporate tax burdens, companies still rely on debt to support their operations due to a lack of internal financing from retained earnings.*

## 1. Firms' Financial Distress during the Pandemic

The COVID-19 pandemic has been predicted to put many countries – both advanced and developing – in a prolonged recession. The Indonesian economy only grew by 2.97% in the first quarter of 2020 and experienced negative growth of –5.29% in the second quarter and still recorded –3.48% in the third quarter. On the other hand, the pandemic also has had a significant impact on the Malaysian economy that started to grow steadily in the first quarter of 2020, by 0.7%, but then recorded negative growth of –17.1% in the second quarter and still saw negative growth in the third quarter of –2.7%.

The COVID-19 pandemic has affected the business sector worldwide as an exogenous shock. The business sector has to manage debts, incur higher borrowing costs due to uncertainty, and deal with an increase in bankruptcy risks (World Bank, 2020). A recent study by Guerrieri, Lorenzoni, and Straub (2020) described how the COVID-19 pandemic created a shock to the business sector that resulted in business shutdowns, layoffs, and bankruptcy. As in Malaysia and Indonesia, this is mainly due to the obligation to implement physical distancing, which has disrupted the supply chain and reduced the demand from developed countries. Hence, the International Monetary Fund economic outlook has predicted that the loss of global output over the next 5 years due to the pandemic will approach US$28 trillion. During an economic shock, firms are forced to lower productivity because they suspend investment and hiring due to uncertainty (Bloom, 2007).

The COVID-19 pandemic has created shocks both to supply and demand. Meanwhile, production disruption has shrunk firms' ability to generate profit (Shapiro, 1987). Claessens, Djankov, and Xu (2000) suggested that firms with high leverage are more vulnerable during a crisis. Their study showed that East Asian corporations depend highly on external funding, particularly from the banking sector. A study (Graham, Hazarika, and Narasimhan, 2011) of the Great Depression in the United States in 1928 to 1938 revealed that the probability of financial distress increased for firms with high leverage. This study also suggested that the likelihood and expected costs of distress had increased as firms committed with more debt.

A frequently used measure of firms' financial distress, the Z-score of default risk based on the popular bankruptcy prediction model of Altman (1968) and Altman et al. (2014), shows that during the pandemic both Indonesian and Malaysian firms experienced an increase in financial distress. The distress is determined by a set of financial indicators such as working capital, earnings and retained earnings, and the capital structure. Table 1 shows the indicators of financial distress and its determinants between 2015–20. The data showed an initial Z-score of 7.03 for both economies. Comparing firms' financial data across years shows how the Z-score gradually dropped from 7.03 in 2015 to 6.34 in 2020. The proportion of distressed firms also increased from 24% in 2015 to 36% in 2020 (Q2). Financially distressed firms have a Z-score lower than 4.5, indicating a higher risk of bankruptcy. Amongst the financially distressed firms, the Z-score is much lower than the average. A higher distress risk is associated with lower profitability from 0.05 in 2016 to 0.0009 in 2020. In addition, the retained earnings also dropped from 0.14 in 2015 to 0.045 in 2020. Moreover, firms also experienced a drop in liquidity levels from 0.42 in 2015 to 0.36 in 2020.

Indonesian firms' Z-score mean (6.47) is higher than Malaysian firms' mean (7.54). A lower Z-score implies that in general Indonesian firms have higher bankruptcy risk compared to Malaysian counterparts. In both countries, the financial distress is explained by a lack of working capital, and low levels of retained earnings, profitability, and equity. Furthermore, the leverage level amongst distressed firms – up to 0.4 – is higher than the industry average, and indicates that firms rely on external sources of financing up to 40% of their assets.

**Table 1. Financial Distress and Its Determinants across Years (2015–20)**

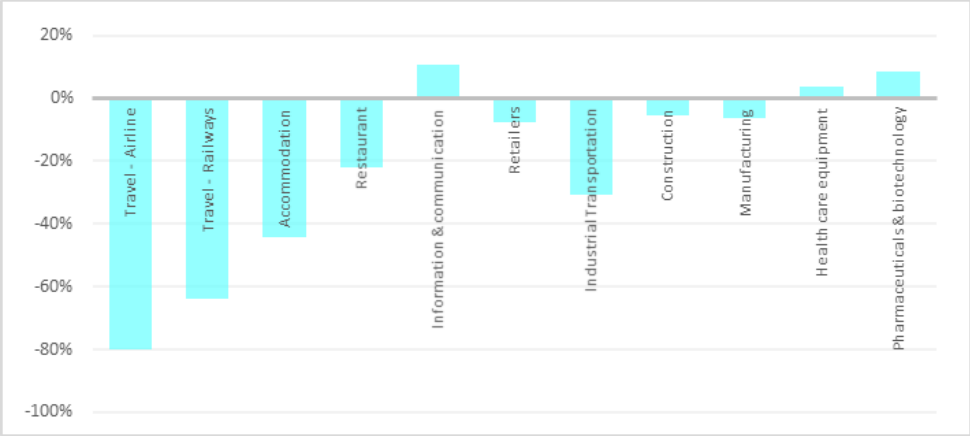
| Means | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Z-score (all firms) | 7.05 | 7.32 | 7.412 | 7.03 | 6.82 | 6.34 |
| Z-score (financially distress firms) | 2.24 | 2.47 | 2.49 | 2.21 | 1.86 | 1.58 |
| Leverage | 0.22 | 0.23 | 0.23 | 0.23 | 0.24 | 0.26 |
| Retained earnings/ assets | 0.14 | 0.12 | 0.12 | 0.10 | 0.06 | 0.05 |
| Equity/ liability | 2.05 | 2.19 | 2.25 | 1.96 | 2.22 | 2.16 |
| Profit | 0.01 | 0.06 | 0.05 | 0.05 | 0.03 | 0.0009 |
| Investment | 0.05 | 0.1 | 0.29 | 0.09 | 0.08 | 0.10 |
| Liquidity | 0.42 | 0.39 | 0.40 | 0.40 | 0.38 | 0.36 |
| Tangibility | 0.39 | 0.39 | 0.40 | 0.42 | 0.46 | 0.46 |
| Firms | 244 | 244 | 244 | 244 | 244 | 244 |
| Financially distressed | 24% | 25% | 24% | 27% | 29% | 36% |
| Period | 2015q1–2015q4 | 2016q1–2016q4 | 2017q1–2017q4 | 2018q1–2018q4 | 2019q1–2019q4 | 2020q1–2020q4 |

Source: EIKON Database of the quarterly firm-level data of publicly trading companies in Indonesia and Malaysia.

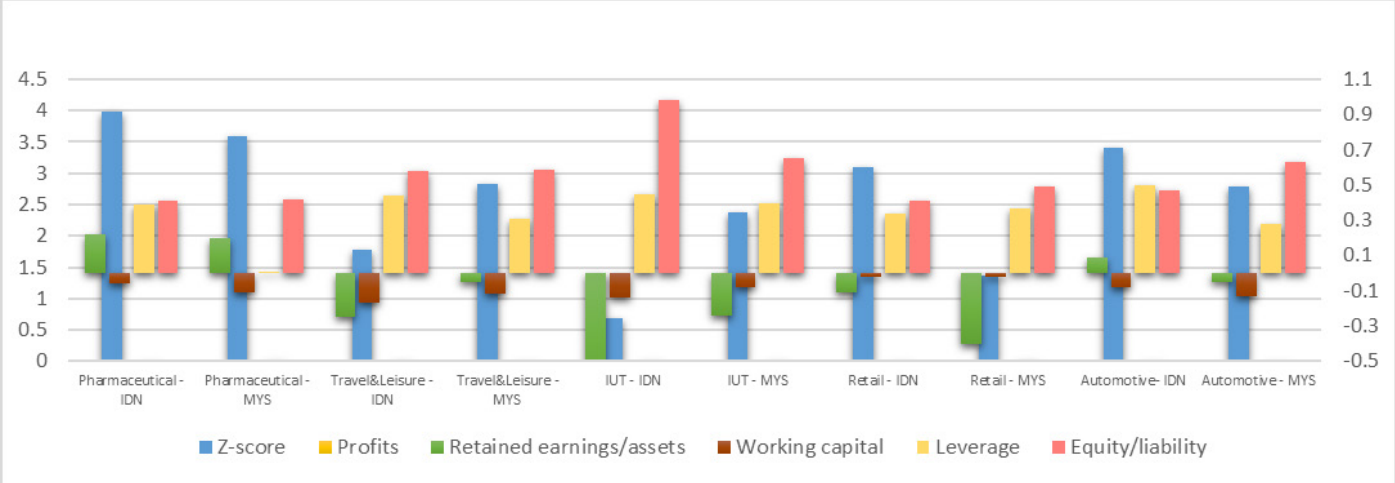
The pandemic has a dissimilar effect on firms across different industries, as shown in Figure 1. Moreover, firms' Z-scores vary across different industries/sectors, as presented in Figure 2. The infrastructure, utilities, and transportation sector has the highest distress level (5.97), which is attributed to a lack of retained earnings (–0.077) and poor earnings performance (–0.002), while the pharmaceutical companies have the lowest (10.89), which is explained by firms' ability to use retained earnings (0.42) to support operations rather than relying on external sources of funding such as debt. The data show that the leverage of the pharmaceutical sector is the lowest (0.13) and the retained earnings the highest (0.42). In addition, pharmaceutical firms can maintain their liquidity (0.61) and the ratio of equity (3.20).

The financial distress is higher for Indonesian firms, particularly those in travel and leisure; infrastructure, utilities, and transportation; and the retail sector. The data reveal that more than 27% of firms in the retail sector are distressed and the proportion of firms with high bankruptcy risk is highest compared to other sectors.[1] The distressed firms that have poor financial performance are shown by negative working capital, retained earnings, and profits. Furthermore, firms having large debt burdens are indicated by a high leverage ratio of 0.38. For all panels, the means of leverage is 0.23, showing that the proportion of debt to total assets is 23%. The leverage is higher for Indonesian firms compared to Malaysian ones, with Indonesian firms averaging 26% leverage Malaysian firms 22%. In terms of profit-generating, Indonesian firms' performance is poorer and recorded 0.005 on average between 2015 and 2020.

## Figure 1: Growth of Q2/2020 by Sector




## Figure 2: Financial Distress and Its Determinants




Note: IDN = Indonesia, MYS = Malaysia, IUT = Infrastructure, Utilities and Transportation.
Source: EIKON Database of the quarterly firm-level data of publicly trading companies in Indonesia and Malaysia.

[1] The Z-score cut-off for determining whether the firm has high bankruptcy risk is 4.5.

## 2. Fiscal Incentives during the COVID-19 Pandemic

To ease the financial burden of the COVID-19 pandemic, countries around the world have introduced fiscal incentives as a complement to monetary policies. The fiscal incentives are particularly important to combat the uncertainty regarding business income and investment plans. Tax policies that reduce obligation are considered automatic stabilisers during recessionary drops in tax bases. However, a study by Auerbech and Feenberg (2000) showed that the impact of taxes as an automatic stabiliser for a GDP shock is not significant. To provide more cushion for business sectors, governments offer deferral of tax payments and simplify tax administration to boost cash flow and increase liquidity. Moreover, countries such as Indonesia provide corporation tax incentives by reducing the tax rates to provide more liquidity to the business sector, increasing incentives for investment and recruiting new workers (Deveroux et al., 2020).

Indonesia allocated more than US$8 billion in tax incentives to the business sector in 2020, and Malaysia provided a financial stimulus of US$4.8 billion. The stimulus was expected to assist firms to improve their liquidity and lower the incentives to increase debts. Indonesia introduced a series of tax administration and tax policy measures to enhance business cash flow during the COVID-19 pandemic. According to Organisation for Economic Co-operation and Development data on immediate COVID-19 response measures, Indonesia is one of the few countries providing large fiscal incentives both in terms of tax administration and tax policies. In terms of tax administration, Indonesia offers deferral of tax[2] and enhances tax refunds for value-added tax.[3]

Regarding tax policy measures, Indonesia has lowered business rates and provided waivers. Corporate income tax (CIT) is reduced from 25% to 22% for fiscal years 2020 and 2021, and to 20% for fiscal year 2022 onwards to protect business liquidity. Listed companies that buy back their public shares can reduce the CIT rate by 3%, which will be 19% for 2020 and 2021 and 17% for 2022. Tax waivers include (1) import tax for manufacturing companies in 19 sectors for a 6-month period; (2) income tax on imports carried out by certain corporate taxpayers during 6 months (April to September 2020); (3) import duties that can be exempted for companies engaged in one of 102 business fields and/or designated as KITE (Import Facility for Export Purposes) companies until 30 September 2020; and (4) the Government will bear 0.5% of the final income tax for small and medium-sized enterprises with annual turnover of up to Rp4.8 billion (€30 million).

Malaysia offers fewer tax incentives for business compared with Indonesia, and these are mostly regarding tax administration. The Government allowed an extension for tax filing from 18 March 2020 to 30 April 2020. In addition, the Government provided tax deferral for tax instalments (for a 6-month period). Therefore, there was no penalty imposed on late payment of taxes provided the payment was made by 30 April 2020. In addition, companies can revise their tax estimates early and be exempt from the Human Resource Development Fund levy. Regarding tax policy measures, Malaysia exempts hotels from service tax.

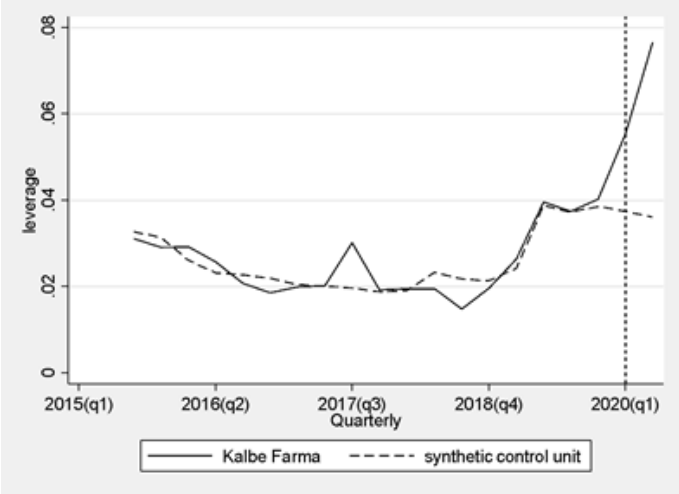
The Synthetic Control Method (SCM) by Abadie and Gardeazabal (2003) and Abadie et al. (2010) uses the variation in tax incentives between two countries, in this case Indonesia and Malaysia, to measure the impact of tax incentives on financial performance. This technique assesses the impact of sudden and infrequent policy interventions that have only recently been introduced, such as fiscal incentives during the COVID-19 pandemic.[4] This study presents the estimated impact of fiscal incentives policies during the pandemic by using firms' leverage level as the variable that is most likely affected (Bolton, Chen, and Wang, 2014) and employs a set of predictors including profitability, volatility, firm size, and tangibility representing firm-level data and degree of trade openness representing country-level data (Rajan and Zingales, 1995; Rauh and Sufi, 2010; Haron, 2015). The SCM constructs selected synthetic Malaysian firms as controls that reproduce or mirror the values of a set of predictors of firms' outcomes (leverage or retained earnings or equity) in selected Indonesian firms before the COVID-19 pandemic. Furthermore, the technique will generate the convex combination of firms in the donor pool that most closely resembles the selected Indonesian firms in terms of pre-COVID-19 pandemic values of leverage or retained earnings or equity predictors.

[2] (a) 30% reduction in the monthly corporate income tax instalment and (b) a 30% reduction on monthly tax instalment payment for import facility for export purposes.

[3] (a) The amount made available for the VAT refund will be increased from Rp1 billion to Rp5 billion. This facility is applicable for VAT returns for the fiscal periods of April to September 2020 which has been filed by 31 October 2020; (b) Preliminary VAT refunds up to Rp5 billion (€30 million) will be automatically considered by the government.

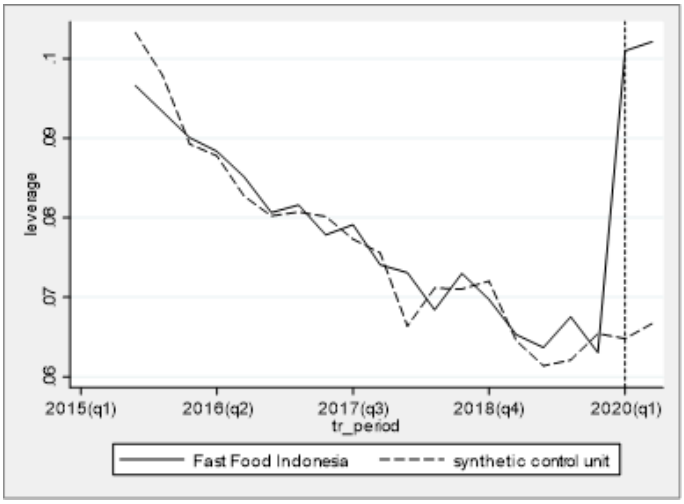
[4] SCM technique is appropriate as the number of time series observations is still limited; thus, it is not feasible to study the short-term effects of corporate tax reduction and other fiscal incentives. The SCM is a comparative case study that relies on the concept of measuring the intervention effect by comparing the changes in the outcome variables between a group of firms in Indonesia that are exposed to a lower corporate tax level and more generous tax incentives (treatment group) and a group of Malaysian firms that are similar to the treatment group but were not exposed by the treatment (donor pool). The effects of intervention can be measured if the outcomes changes for the firms are affected by the policy intervention and the comparison firms (in the control group) are driven by common factors that cause a significant amount of co-movement (Abadie, 2020).

## Figure 3(a): Pharmaceutical Industry



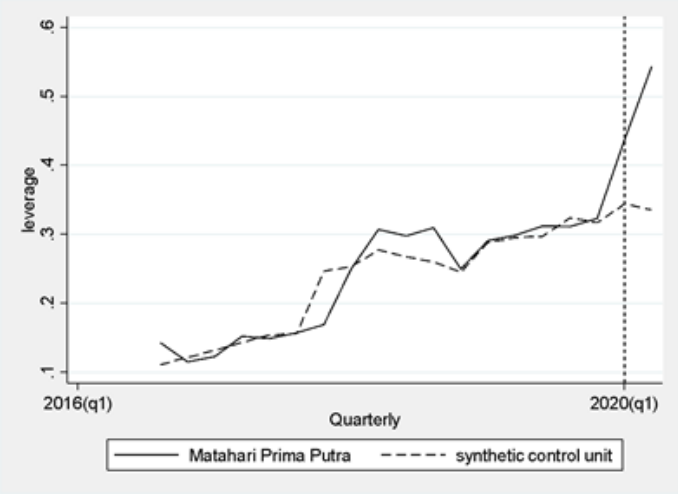

Source: EIKON Database of the quarterly firm-level data of publicly trading companies in Indonesia and Malaysia.

## Figure 3(b): Travel and Leisure Industry



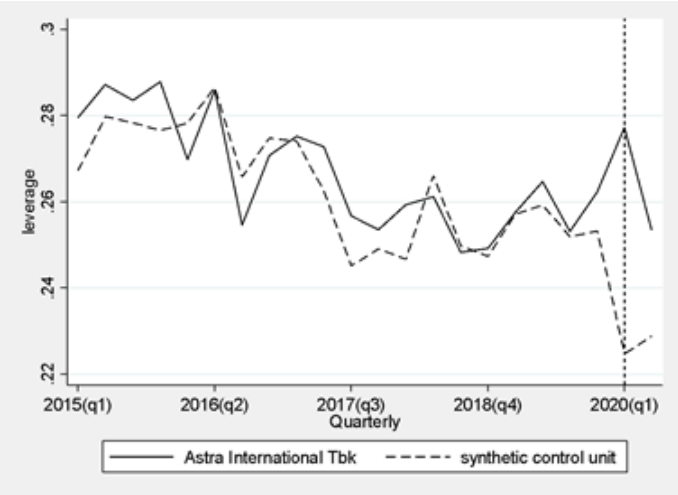

Source: EIKON Database of the quarterly firm-level data of publicly trading companies in Indonesia and Malaysia.

## Figure 3(c): Retail Industry




Source: EIKON Database of the quarterly firm-level data of publicly trading companies in Indonesia and Malaysia.

## Figure 3(d): Automotive and Components Industry




Source: EIKON Database of the quarterly firm-level data of publicly trading companies in Indonesia and Malaysia.

The estimations of the impact of tax incentives on firms' leverage are presented in Figure 3. There are four cases presented to represent affected industries/sectors both in Indonesia and Malaysia. In the case of the pharmaceutical industry, the SCM technique compares the leverage of PT Kalbe Farma, one of the biggest pharmaceutical companies in Indonesia and its donor pool of pharmaceutical firms in Malaysia that are similar to PT Kalbe Farma as a treated firm.5 The fiscal policy intervention in Indonesia is estimated using the difference between leverage level of PT Kalbe Farma and its synthetic version after the introduction of the policy in early 2020. Figure 2a plots the quarterly estimates of the impacts of fiscal intervention, that is, the quarterly gaps in leverage level between PT Kalbe Farma and its synthetic counterpart. The result suggests that there is a substantial gap between PT Kalbe Farma and the synthetic counterpart in terms of leverage level after the introduction of fiscal incentives. The plots show that the leverage level between firms in the pharmaceutical industry in Indonesia and Malaysia is substantial and after the intervention, the leverage level of the treated firm in the pharmaceutical industry in Indonesia increases compared to the Malaysian counterparts.

The same procedure is implemented for other sectors and the SCM technique can identify the synthetic control firms for Fast Food Indonesia, one of the country's biggest travel and leisure companies.6 For retail firms, this study is also able to identify the synthetic controls for Matahari Putra Prima.7 Similar to previous finding for the pharmaceutical industry, the other two sectors – travel and leisure and retail – also show that the gaps of leverage level between Indonesian firms and Malaysian firms are substantial after the policy intervention and the leverage level of treated Indonesian firms is higher compared to their Malaysian counterparts (see Figure 2b and 2c).

Regarding the automotive and components industry, the SCM can fit Astra International Tbk, one of a main automotive company in Indonesia to its synthetic Malaysian automotive and components firms.8 The SCM estimation shows that the gaps of leverage level between the treated firm of Astra International and its synthetic donors of Malaysian firms are significant in the first period after the treatment (Q1 of 2020), but in the second period (Q2 of 2020) the gaps are no longer statistically significant (see figure 2d).

## 3. Policy Recommendations

High dependency on external funding heightens firms' financial distress. Private debt, particularly amongst Indonesian firms, is relatively high compared to Malaysian firms. The high leverage level is concerning, especially during the economic shock due to the COVID-19 pandemic. The debt bias regime also contributes to increased private sector debt as it favours corporate debt over equity financing. Indonesia introduced a Thin Capitalization Rule (TCR) in 2016 that applied the restriction of interest deductibility of debt if the debt-to-equity ratio is more than 4:1. This policy is perceived as effective to lower the debt-to-assets ratio by 5% (De Mooji and Hebous, 2015). However, the rule restriction is still relatively relaxed compared to other countries that permit the interest deductibility for firms with a debt-to-equity ratio no more than 3:1. In addition, the development of the capital market is essential to provide alternatives for the business sector using equity financing instead of merely depending on external financing from debt.

Fiscal discretion is advised during economic shocks to complement monetary policy in countering the devastating economic effects of the pandemic. Tax policy provides an automatic stabiliser during the recession, but the overall impact on the economy is not substantial (Aurbach and Feenberg, 2000). Therefore, the tax policies should provide more room for the business sector to manage liquidity and improve profitability. During the initial stage of a pandemic when the economy experiences an acute overall disruption, fiscal policies should be directed to secure business sector liquidity. The policies are mostly short-term for example by providing income guarantee schemes for workers to avoid layoffs and targeted tax incentives such as payment deferral and government loans. However, these policies, especially the income guarantee scheme, require substantial fiscal costs so it may not be affordable for developing countries such as Indonesia.

[5] The optimisation procedure is performed to develop the synthetic control and to select the best weighting of Malaysian firms in the pharmaceutical industry as a donor pool to create a synthetic control. Table 9 shows all firms in Malaysia are eligible to be control firms and their similarity to a treated firm such as Kalbe Farma is shown by the weight unit. A higher weight indicates a higher level of similarity between donor firm and the treated firm. From the donor pool, there are seven synthetic control firms, which are Kotra Industries (weight=0.064); Duopharma Biotech (weight=0.009); Apex Healthcare (weight=0.021); Suzen Biotech (weight=0.191); Pharmaniaga (weight=0.68); Mlaysn Genomics (weight=0.004) and YSP STHEAST (weight=0.031).

[6] The synthetic control firms are 9 similar firms in travel and leisure industry in Malaysia – Airasia Group Bhd (weight=0.02); AirAsia X Bhd (weight=0.199); Berjaya Assets Bhd (weight=0.042); G Capital Bhd (weight=0.399); Genting Malaysia Bhd (weight=0.008); Konsortium Transnasional Bhd (weight=0.007); Landmarks Bhd (weight=0.302); Magnum Bhd (weight=0.004); Olympia Industries Bhd (weight=0.019).

[7] The synthetic control firms are five retailers in Malaysia – Parkson Holdings (weight=0.095); Malayan United (weight=0.261); MESB (weight=0.218); Cycle & Carr Bintang (weight=0.2) and Sedania Innovator (weight=0.226).

[8] The synthetic control firms are seven companies in Malaysia – Tan Chong Motor Holdings Bhd (weight=0.019); UMW Holdings Bhd (weight=0.018); Sapura Industrial (weight=0.138); Permaju Industries Berhad (weight=0.059); Chin Hin Group Property (weight=0.093); Wellcall Holdings Bhd (weight=0.158) and ABM Fujiya Bhd (weight=0.303).

In the 'New Normal' second phase of the pandemic, fiscal incentives should stimulate demand and supply to assist the business sector. As demand is still below its normal rate, the fiscal incentives should be allocated to support the supply side to spur the economic recovery. Regarding the Corporate Income Tax (CIT), Indonesia lowered the rate by 3% but the impact may not be substantial as the rate is already low. The CIT rate amongst developing countries has been reduced from 31% in the mid-1990s to 26% in 2007 (Abbas and Klemm, 2012). To stimulate the supply side, the CIT may offer an immediate rebate for losses, so a company is allowed to apply the loss to the previous year's tax return (Devereux et al., 2020). Further, tax measures may take the form of allowances for capital expenditure to stimulate investment during an increase of uncertainty. Moreover, fiscal incentives can temporarily stimulate demand by reducing the rate of Value Added Tax (VAT). This policy is effective if the VAT rate cut is directly passed on to customers (Devereux et al., 2020).

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