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Productivity and investments are the primary drivers of an economy's GDP growth (Vartia, 2008). In 2020, as COVID-19 contracted the economy, the Philippine government imposed a significant fiscal stimulus—the Corporate Recovery and Tax Incentives for Enterprises (CREATE) Law. This aimed to reduce the corporate income tax rate to ease the ill effects of the pandemic on the business landscape. The law aimed to increase investments and productivity for micro-sectors, particularly the manufacturing industry, the country's largest Gross Domestic Product (GDP) contributor under the Industry sector. To examine whether the law's objectives were met, specifically on the improvement of investments and productivity, this paper utilized a Systems Generalized Method of Moments (GMM-SYS) using the Arellano-bond estimator with quarterly data from 66 publicly listed Manufacturing firms spanning from 2019 until the first quarter of 2023 for the Total Factor Productivity (TFP) model and Investments model. The empirical study revealed that through the Systems GMM, the reduction in corporate income tax from the CREATE Law significantly increased the firms' investment values and enhanced TFP performance.

Policy Recommendations

The CREATE law was an important fiscal move in order to help mitigate the effects of the pandemic on the Philippines' business sector. Particularly, the reduction of corporate income taxes eased the financial burden of these businesses who suffered from low demand, supply-chain disruptions, and overall uncertainty. However, the magnitude and scope of the effect of such a fiscal incentive could differ from sector to sector, depending on the nature of business and operations. The nature of a tax reduction could impact some channels more quickly and effectively than others, and at varying speeds and levels of longevity. Thus, based on the study's implications, the researchers recommend the following:

1. **Implement robust mechanisms for monitoring and evaluating the effectiveness of the law in the long-term** - As policymakers have better access to data, monitoring these and implementing a streamlined framework for evaluation is crucial. Since this study is limited in its analysis to just the manufacturing sector of the country, policymakers could better examine the effectiveness of the law and whether their objectives were met by adopting research efforts in the context of other sectors throughout the economy to provide a better picture of the overall landscape of the economic effects resulting from their policy.
2. **Fine-tune tax incentives to spur productivity and investments more equitably across sectors and tiers** – Since CIT reductions impact sectors and subsectors differently, finding ways to make the policy more equitable is important to not only benefit highly technical and physical investment-reliant firms' productivity and investments. Understanding the key variables and economic channels of other industries is crucial in executing this effectively.
3. **Ensure appropriate implementation of both short-term and long-term incentives as a fiscal tool** – The effect of CIT reductions could take different amounts of time for different kinds of firms. The study's findings suggest that its effect on investments takes a longer time to be observed than in productivity. Thus, CIT reduction might not be the best tool to use if a policy wishes to spur investments immediately. Keeping in mind the time constraint in the goals of a policy is crucial to implementing effective policies that pull the right levers and utilize the right channels that would lead to the desired (long-term or short-term) effect.

INTRODUCTION

In the Philippines, the government imposed a recovery plan to confront the ill effects of COVID-19 on the business sector—the Corporate Recovery and Tax Incentives for Enterprises (CREATE) law. This particular act is considered to be the country's most significant economic stimulus initiative comprising two (2) general divisions: (1) CIT Reforms and (2) Fiscal Incentive Reform. This study focused on the law's CIT Reforms to determine whether the law adhered to its declaration policy *"to develop the national economy towards global competitiveness by implementing tax policies instrumental in attracting investments, which will result in productivity enhancement (Republic Act No. 11534, 2021)...."*. Before the pandemic, the CIT rate in the country was one of the highest in the ASEAN area, but in 2021, the CREATE law led to most of the corporations in the country's CIT rate to be reduced by 5. Moreover, in 2022, the Board of

Investments conducted its annual Manufacturing Summit to restructure the CREATE Law by emphasizing manufacturing firms through the Strategic Investment Priority Plan (SIPP), which is why the study uses Philippines' publicly listed manufacturing companies' financial statements from 2019-2022 to answer the question *"How does CREATE law's CIT reduction affect the publicly listed manufacturing firms' investments and productivity?"*

MODEL SPECIFICATION AND RESULTS

The Systems-GMM methodology was the main methodology chosen in the study to address heterogeneity issues. This methodology yielded significant results for both TFP and Investment models. Results showed that the CREATE Law variable (represented by the CIT reduction) significantly and positively affected both TFP and Investments.

Systems GMM TFP Model
Level Equation

$$TFP_{it} = \alpha + \rho TFP_{i,t-1} + \beta_1 Create_{it} + \beta_2 CAge_{it} + \beta_3 CLiquidity_{it} + CInflationrate_{it} + \varepsilon_{it}$$

Difference Equation

$$\Delta TFP_{it} = \gamma + \delta \Delta TFP_{i,t-1} + \Theta_1 \Delta Create_{it} + \Theta_2 \Delta CAge_i + \Theta_3 \Delta CLiquidity_{it} + \Theta_4 \Delta CInflationrate_{it} + \eta_{it}$$

Second Step Equation (Systems GMM)

$$Q(\Theta) = (\frac{1}{N}\sum_{i=1}^{N} \Delta TFP_{it} - Z_i \widehat{\Delta u_i})' W (\frac{1}{N}\sum_{i=1}^{N} \Delta TFP_{it} - Z_i \widehat{\Delta u_i}$$

Systems GMM Investments Model

Level Equation

$$Inv_{it} = \alpha + \rho Inv_{i,t-1} + \beta_1 Create_{it} + \beta_2 CAge_{it} + \beta_3 CLiquidity_{it} + \beta_4 CInflationrate_{it} + \varepsilon_{it}$$

Difference Equation

$$\Delta Inv_{it} = \gamma + \delta \Delta Inv_{i,t-1} + \Theta_1 \Delta Create_{it} + \Theta_2 \Delta CAge_{it} + \Theta_3 \Delta CLiquidity_{it} + \Theta_4 \Delta CInflationrate_{it} + \eta_{it}$$

Second Step Equation (Systems GMM)

$$Q(\Theta) = (\frac{1}{N}\sum_{i=1}^{N} \Delta Inv_{it} - Z_i\widehat{\Delta u_i})'W(\frac{1}{N}\sum_{i=1}^{N} \Delta Inv_{it} - Z_i\widehat{\Delta u_i}$$

Systems GMM Results Summary Table

		TFP		Investments (log)	
	A-priori	***Coefficient***	***Positive / Negative***	***Coefficient***	***Positive / Negative***
Lag 1	Positive (+)	-.0883853	Negative (-)	.6883019	Positive (+)
Company Age	Positive (+)	3636.519	Positive (+)	.0018726	Positive (+)
Inflation rate	Negative (-)	-6051.412	Negative (-)	-.0005739	Negative (-)
Liquidity	Negative (-)	-801.9772	Negative (-)	-2.58e-06	Negative (-)
CREATE	Positive (+)	4732.222	Positive (+)	.0043894	Positive (+)

Descriptive Statistics (TFP and GFCF Growth Per Tier)

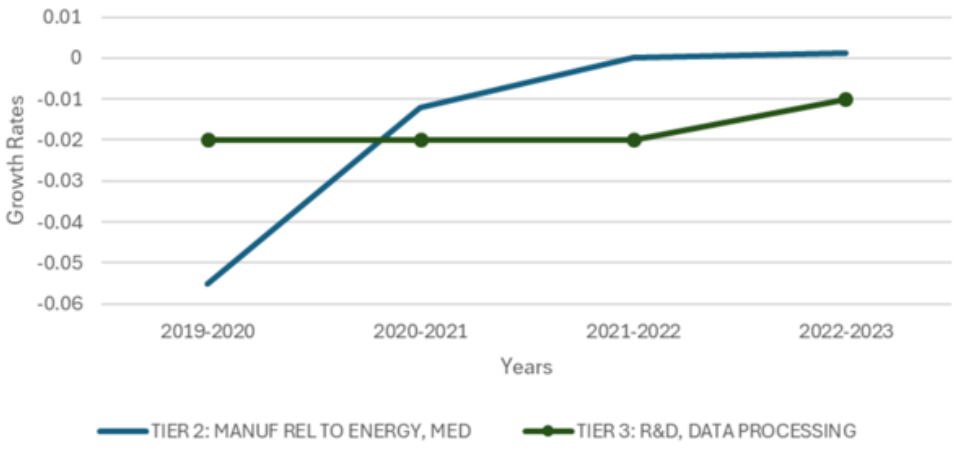

FIGURE 1: AGGREGATE TFP GROWTH RATES OF TIERS

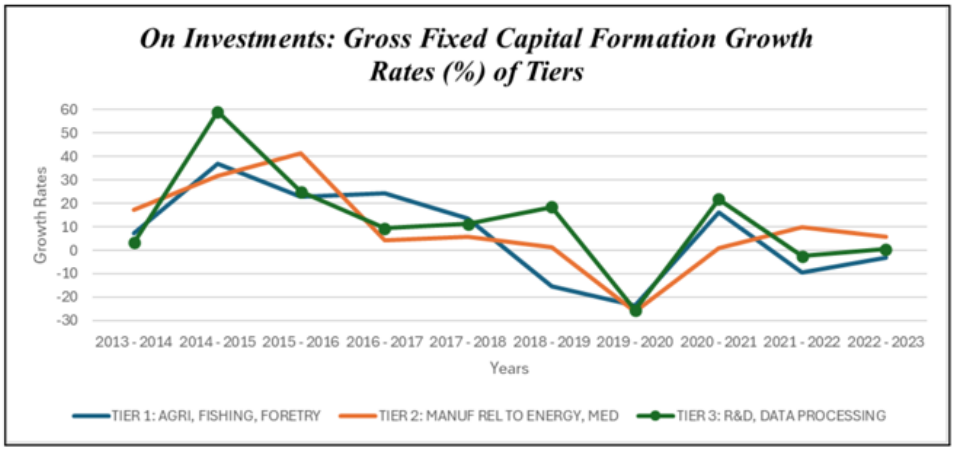

FIGURE 2: AGGREGATE GROSS FIXED CAPITAL FORMATION GROWTH RATES OF TIERS

Descriptive Statistics were presented to enrich insights building on the SIPP, which classified business activities into three (3) tiers. This was a point of investigation to guide the study's policy implications. The graphs show that during the post-implementation period (2021 onwards), TFP showed increases in growth rates for tiers 2 and 3. Tier 1 was excluded because no firms were part of the stipulated scope. For investments, similar behavior was found for tiers 1 and 3.

CONCLUSIONS AND RECOMMENDATIONS

The create law's CIT reduction had a significant positive impact on the TFP and investments of the Philippine publicly-listed manufacturing firms. The TFP and investments of firms under Tier 3 based on the manufacturing summit's SIPP seemed to benefit the most from the law based on their improvements in growth performance post-implementation and hinging from the intuition partly proven in this study of the effect of tax reductions on firms that are highly technical and physical asset-heavy in nature. The relationships observed in this study, as well as the recommendations drawn from them, are only based on short-term effects observed as the dataset involved in the research only accounted for the years 2019-2022.

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