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Rent-Seeking in Sugar Industry: Evidence from Financial Accounting Data

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ABSTRACT

We examine the impact of inefficiency at company and country level on the profitability of sugar companies. This study offers a fresh approach to the rent seeking literature by examining the financial accounting data. The rent seeking hypothesis posits positive relationship between inefficiency and profitability. To verify the hypotheses, we employed a linear regression model that links profitability with inefficiency measurement (company level and country level) with firm size; liquidity; leverage and country dummy variables as control variables. The regression model was estimated using a panel dataset of 158 companies, annual frequency from 2013 to 2022. Two-Step Difference GMM is employed as main estimator to cope with persistence and endogeneity feature inherently in our model and data. As expected, we find that inefficiency (of both company and country level) has a positive association with profitability. Our results are robust after an array of checking.

Keywords: Rent Seeking; Inefficiency; Profitability; Sugar Companies; Two-Step Difference GMM
JEL: D72; M21; M41; C26

1. Introduction

The sugar industry is one of the sectors included in the manufacturing industry. In the 2022/2023 period, global sugar production reached 177 million tons, an increase from 164.7 million tons in 2015/2016. The sugar industry holds significant political value due to its strate-

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gic role in providing essential food needs for society and its impact on the overall economy. According to Solomon et al.[1] in their study for the ASEAN region, sugar ranks as the second most important food commodity, with a production of approximately 17 million tons, accounting for 9–10% of total global production. In addition to its political significance, the sugar industry is closely linked to various economic sectors, such as food and beverages, fast-moving consumer goods (FMCG), and restaurants. Thus, the success and efficiency of the sugar industry directly impact the performance and growth of related sectors.

In the sugar industry, rent-seeking is a well-known phenomenon, where sugar companies often leverage their relationships with policymakers to gain unfair advantages[2]. Rajput and Venkataraman[3] reported that government assistance is an integral part of the sugar industry. Rent-seeking refers to activities aimed at obtaining significant economic gains, particularly from the government in that country. It involves manipulating public policies or specific economic conditions to achieve profit as a strategy for increasing income[4]. Rent-seeking can also be defined as unproductive activities aimed at seeking profit, involving the exploitation of resources and the use of both legitimate and illegitimate means to gain personal benefits. The practice of rent-seeking in sugar companies can be observed through lobbying and bribery[5]. The consequences of these practices include the destruction of fair competition, distorted economic resource allocation (where resources that could be used for productive activities are wasted on unproductive endeavors), and hindered implementation of more efficient production methods[6]. Rent-seeking activities have detrimental effects on the economy by creating misallocations of resources, yet they can have positive impacts for individual companies.

Unlike typical rent-seeking research, this study highlights the phenomenon of rent-seeking from the perspective of financial accounting. Rent-seeking is often viewed solely from economic or public policy angles; however, our study integrates accounting analysis to provide a deeper understanding of how these practices can impact a company's financial statements. The study conducted by Liu et al.[4] also analyzes rent-seeking in conjunction with earnings management. The presence of rent-seeking practices encourages companies to achieve greater profits, which implies a decline in the quality of accounting information disclosed to the public. Accounting information is crucial for stakeholders to monitor and evaluate a company's performance[4]. This approach in the current study can offer new insights and opportunities to explore the impact of rent-seeking behavior on a company's financial accountability, viewed through various accounting variables.

As explained in the previous paragraph, rent-seeking practices involve certain parties influencing the government to obtain privileges that enable companies to achieve abnormal profits. When companies receive government support, they can still set high selling prices and achieve significant profits. To gain this support, companies must sacrifice "something" as a substitute for the policy leniency they seek. From a financial accounting perspective, rent- seeking can be observed through a positive relationship between inefficiencies within companies (observed through cost and operational activities) and inefficiencies at the national level concerning profitability[7].

The main objective of this study is to provide new insights into the phenomenon of rent- seeking in the sugar industry, using financial accounting data as the basis for analysis. Additionally, this study aims to provide insights into how government regulations influence corporate behavior in creating opportunities for rent-seeking. To support these points, the author will investigate the relationship between inefficiencies at the company and country levels and profitability.The regression model was estimated using a panel dataset of 158 companies, annual frequency from 2013 to 2022. Two-Step Difference GMM is employed as main estimator to cope with persistence and endogeneity feature inherently in our model and data. As expected, we find that inefficiency (of both company and country level) has a positive association with profitability. Our results are robust after an array of checking.

The paper is structured as follow. Section 1 established the case and novelty of our study. Section 2 discussed literature review and hypothesis development. Section 3 presented data and methodology, Section 4 re-

ported the results, as well as discussion, and Section 5, is the conclusion.

2. Literature Review and Hypothesis Construction

Rent-seeking is a common phenomenon in the sugar industry. It can be defined as a company's efforts to exploit policies or regulations to gain profits without necessarily improving efficiency. The concept of rent-seeking is tied to economic rent and describes efforts by individuals, organizations, or businesses to earn income through economic or legal manipulation, rather than through trade or the creation of wealth. Today, rent-seeking is more commonly linked to government regulation and the abuse of governmental power [8]. Rent- seeking also refers to revenue pursuits through monopolies, licensing, and the use of power within business. Zhang et al. [9] documented that rent-seeking practices are prevalent in markets controlled by the government concerning industry admission, pricing, and stringent product quality regulations. In this scenario, companies will influence these regulations to enhance their profits [9].

By engaging in rent-seeking, entrepreneurs obtain profits through unhealthy means. The power held by entrepreneurs is used to distort the market to serve their interests. Rent-seeking also indicates manipulation within the business environment, as the scramble for monopoly over regulations in the industry leads entrepreneurs to lobby for rules that favor their enterprises. The assumption in rent-seeking practices is that companies can maximize profits with minimal effort.

However, to achieve these objectives, sacrifices are needed, such as costs incurred by the involved parties to facilitate the practice of rent-seeking. These costs will affect the inefficiencies that arise within the company. Wong et al. [10] and Bi et al. [11] suggested that wasteful costs resulting in unproductivity are characteristic of rent-seeking. In rent-seeking practices, entrepreneurs spend resources to gain profits without creating added value. Angelopoulos et al. [12] also indicated that rent-seeking activities result in social costs that are used unproductively to obtain privileges from the government.

Wong et al. [10] argue that rent-seeking activities are equivalent to acts of corruption or are conceptualized as activities that are directly unproductive. In the sugar industry, rent-seeking may take the form of bribing government officials to obtain privileges. Nguyen et al. [5] further support this statement by noting that companies will pay bribes to public officials to access administrative services and public standards. These payments become additional costs for companies in their competition to gain access to exclusive services, such as government contracts or business permits in restricted areas. The motivation for entrepreneurs to engage in rent-seeking is the desire to maximize profits without going through healthy market mechanisms [13].

Although companies experience increased inefficiencies, they can still survive and thrive by relying on subsidies, protective tariffs, and other policies that distort the market to maintain their profitability [14]. When operational costs rise, companies become increasingly motivated to explore opportunities outside of cost management, such as political influence. By leveraging these policies, companies can enhance profitability without investing resources to improve efficiency. Brou and Ruta [15] state that the presence of rent-seeking practices leads to a lack of innovation within companies.

Moreover, the success of companies in engaging in rent-seeking indicates a weak government system [16]. As governance deteriorates, companies find it easier to exploit opportunities to gain profits through non-transparent means. Chen and Bu [17] showed that political connections can reduce funding constraints for businesses; however, they can also stimulate the motivation to seek profits. Conversely, good governance has the potential to reduce opportunities for companies to engage in rent-seeking due to strict oversight and regulation from the government, preventing companies from gaining additional profits through political influence [18].

Based on the explanation in the previous paragraph regarding rent-seeking, it can be seen that rent-seeking in sugar companies manifests as inefficiencies at the company level, particularly in costs that have a positive relationship with profitability, as well as inefficiencies at the country level that also correlate positively with profitability.

2.1. Rent Seeking and Inefficiency of Companies

According to Krueger and Tullock (as cited in Yamamura and Kondoh [19]), rent-seeking activities decrease company efficiency. This finding is consistent with Tullock's observations in Wong et al. [10], which highlight that wasteful costs incurred by companies due to unproductivity are characteristic of rent-seeking. Nguyen et al. [5] also state that the presence of cost inefficiencies in companies can positively relate to the growth of the firm. Research conducted by Bi et al. [11] and Angelopoulos et al. [12] related to rent-seeking concludes that companies will incur excessive costs to be paid to authorities in exchange for privileges. These costs can also be interpreted as social costs that lead to inefficiencies within companies. Additionally, Boldrin and Levina [20] state that rent-seeking is a relevant source of social inefficiency in companies. A study by Grazhevska, Virchenko, and Grazhevska [21] on rent- seeking in Ukraine shows that companies tend to spend significant amounts of money to overcome administrative barriers and protect their property rights. Moreover, rent-seeking practices also contribute to inefficiencies, particularly in resource allocation. However, the results of the study conducted by Handoyo et al. [22] indicate a negative relationship between inefficiency and profitability. Inefficiency is measured using proxies such as Operating Cost Ratio (OCR) and Asset Turnover Ratio (ATR), with the Asset Turnover Ratio used as an alternative proxy during robustness checks.

H1. *Inefficiency in companies has a positive relationship with profitability.*

2.2. Rent Seeking and Inefficiency within Countries

The presence of rent-seeking practices can be measured by the quality of governance in a country. Research by Chen and Bu [17] supports this statement by showing that political connections can reduce funding constraints for businesses; however, they can also stimulate the motivation to seek profits. Additionally, a study by Curti and Mihov [23] indicates that governance has a significant impact on losses associated with fraud, which in turn affects the profitability of companies. Research by Rio and Lores [24] also reveals the controversial role of government regulation in the economy. While regulation can enhance productivity and output, it can also be used to facilitate rent-seeking practices. Hall and Jones (as cited in Rio and Lores [24]) further argue that regulations and laws can protect against diversion but are often used as a primary means of diversion within an economy. Research by Wong et al. [25] indicates that rent-seeking activities are equivalent to corrupt actions or as concepts of activities that are directly unproductive.

In this study, we use Country Governance Index-CGI as a measure of (country level) inefficiency. CGI is a compilation of global data capturing the perceptions of households, businesses, and citizens about the quality of governance in over 200 countries and regions. CGI was developed by the World Bank [10]. The research conducted by Zelenyuk & Zheka [26], Arora & Sharma [27], Meon & Weill [28] shows that CGI dan measure business efficiency within a country. According to the World Bank, there are six indicators in CGI: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption.

H2. *Inefficiency at country level has a positive relationship with profitability.*

2.3. Interaction Term between Inefficiency in Companyies Countries

When companies are in a situation of high cost inefficiency, coupled with weak governance, opportunities for rent-seeking practices arise [29]. They are more active in political lobbying or corrupt practices to gain profits without having to improve productivity. As a result, profitability does not reflect true performance, but rather the ability to exploit these conditions, which can lead to market distortions and hinder long-term economic growth. However, research by Ngobo and Fauda [30], McNutt [31], Lambsdorff, J. G. [32] shows that there's relation between inefficiencies within companies and governance to profitability.

H3. *Interaction term between Inefficiency at company and country level has a positive correlation on profitability.*

Company size (SIZE) is also a factor that can impact profit and is an important factor when discussing profitability [33]. Impact of this size on profitability, as discussed by Zambrano, Martinez, and Martin [33], can be observed through the total assets owned. Liquidity (LIQ) measures the ability of industry to meet short-term commitments using liquid assets and can be determined using cash ratio. Pasiouras and Kosmidou in Worku, Bayleyegne, and Tafere [34] showed a negative impact of these factors. Following the discussion, leverage (LEV) ratio is also related to profitability. This ratio is related to the debt structure of industry, which can be measured using Debt to Equity Ratio (DER). Wu and Yue in Husin and Pinjaman [35] showed a positive relationship between LEV and profitability. Another study conducted by Sayilgan in Husin and Pinjaman [35] also obtained similar results, namely a positive relationship between these factors. However, the results of Maghyereh in Husin and Pinjaman [35] were inversely proportional to the previous study where the results showed that LEV and profitability had a negative relationship.

3. Methodology

Based on the objectives, this study proposed the following linear model.

$$\begin{gathered} PROFIT_{it} = \beta_0 + \sum_{i=}^{2} \beta_1 PROFIT_{it-i} \\ +\beta_2 INEF_{it} + \beta_3 CGI_{jt} + \beta_4 EFF_{it} * CGI_{jt} \\ +\beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 SIZE_{it} + \epsilon_{it} \end{gathered} \quad (1)$$

$PROFIT_{it}$ is the dependent variable. We model the persistence phenomenon of profitability (as proposed by Capraru dan Ihnatov [36] ,Dayanandan dan Donker [37], Salim dan Yadav [38].

$INEF_{it}$ CGI_{jt}, and $EFF_{it} * CGI_{jt}$ are our variables of interest. For this linear model we propose the following control variables: $LEV_{it}, LIQ_{it} and SIZE_{it}$. These control variables are typically found in business finance studies like Dalci [39], Adelopo et al. [40] and Brighi dan Venturelli [41]. We assumed endogeneity exists between PROFIT, INEF and LIQ. This assumption has been empirically found by Chinloy dan Imes [42], Lien et al. [43] and Qiu dan Yu [44]. The description and formula for each variable can be found in **Table 1**. For the ATR formula, the author applied the inverse (1/ATR) to ensure it has the same interpretive meaning as the other inefficiency metric, OCR, where a higher value indicates greater inefficiency.

Our dataset is constructed from OSIRIS and the Worldwide Governance Indicators (World Bank) from 2013 to 2022. The sample consists of 158 companies from 44 countries. Each company will be described in terms of its country of origin and categorized as either a developed or developing country. The study addressed outliers which were defined as observations with absolute values greater than the mean +3 standard deviations using Winsorize [45]. This exploration applied Winsorize with cut-offs of 5% and 95% for all variables.

This Table showed the description and calculation of the variables and proxies used in the study.

Equation (1) is estimated using Two Step Difference GMM (Arrelano and Bond, 1989 in Roodman [46]). The procedure in this paper follows closely Kripfganz [47]. Specifically, we use difference GMM instruments for variables: PROFIT, INEF and LIQ. Other variables are employed as standard instruments.

We evaluate the validity of the instruments and the estimation results using three tests: overidentification, under identification and serial correlation. The overidentification test (Sargan Hansen statistics) is used to assess whether the employed instruments satisfy the exogeneity requirement (null hypothesis of no left-over covariance of instrumented variables with the residuals. The under-identification test carried out using Cragg MacDonald statistics to assess whether the instruments are sufficiently enough to explain endogenous variables. Lastly The serial correlation test is used to examine the presence of (up to) Lag 2 autocorrelation in the GMM model's residuals.

We carried out several robustness checks schemes to our GMM model. First, we apply alternative proxies namely GPM (as alternative for ROE) and ATR (as an alternative for OCR). Second we rerun estimation using subsamples: Country region (CRG) and country status (CTY_status). Subsampled CRG are East Asia and Pacific,

Table 1. Variables and proxies.

Variables	Proxies	Description	Formula
Dependent			
Profitability	ROE GPM	Return on Equity Gross Profit Margin	Net Profit/Total Equity Net Profit/Sales
Independent			
Inefficiency	OCR ATR	Operating Cost Ratio Asset Turn Over Ratio	Operating Cost/Operating Margin Sales/Total Asset
Country Governance	CGI	Country Governance Index	(Control of Corruption + Government Effectiveness + Political Stability and Absence of Violence/Terrorism + Regulatory Quality + Rule of law + Voice and Accountability)/6
Company Size	SIZE	Size of Industry	Ln (Total Asset)
Liquidity	LIQ	Cash Ratio	Cash/Current Liabilities
Leverage	LEV	Leverage Ratio	Total Debt/Total Equity

Europe and Central Asia, Latin America and Caribbean, Middle East and North Africa, North America, South Asia, and Sub-Saharan Africa. For CTY_status; we employ: Developed versus Developing categories.

4. Results and Discussion

4.1. Results

4.1.1. Descriptive Statistics and Pairwise Correlation

Descriptive statistics are shown in **Table 2**, and the pairwise correlation between the independent variables is presented in **Table 3**. The results of the descriptive statistics indicate that the performance of the companies falls into the good category. The median values for ROE, OCR, and CGI are 0.067, 0.360, and −0.301, respectively, which align closely with their averages of 0.086, 0.577, and −0.273 (see **Table 2**). Rahman, Rodriguez, and Lambkin [48] conducted research related to efficiency and profitability in the pharmaceutical industry, which often engages in rent-seeking practices. Their descriptive statistics also show an average ROE consistent with our findings. This indicates that the companies in our sample are generally capable of generating relatively good profits. The average ATR is 1.857. This result aligns with the study by Xu et al. [49], which found an average ATR of 1.179 in the industrial sector, indicating that the listed sugar companies are efficient in generating higher revenue from their assets. Furthermore, research by Omri and Mabrouk [50] found that the CGI has a standard deviation of 0.71, comparable to our finding of 0.691. This indicates that there is variation in the quality of governance among the countries in this study's sample.

Table 2. Descriptive statistics.

Stats	ROE	GPM	ATR	OCR	CGI	SIZE	LIQ	LEV
Mean	0.086	0.231	1.857	0.577	−0.273	11.826	0.533	1.401
p50	0.067	0.217	1.242	0.360	−0.301	11.726	0.248	1.114
SD	0.205	0.132	1.767	0.940	0.691	1.534	0.064	2.746
Min	−0.384	0.000	0.550	−0.950	−1.121	9.294	0.001	−5.554
Max	0.547	0.526	8.012	3.155	1.343	14.886	0.231	8.007
p5	−0.383	0.000	0.550	−0.949	−1.121	9.302	0.001	−5.517
p95	0.545	0.526	7.997	3.148	1.343	14.879	0.231	8.004
N	1440	1440	1440	1440	1440	1440	1440	1440

This table showed the results of descriptive statis- tics for each variable used.

Table 3. Pairwise correlation.

	ATR	OCR	CGI	SIZE	LIQ	LEV
ATR	1.000					
OCR	−0.270	1.000				
CGI	0.064	−0.199	1.000			
SIZE	0.029	−0.120	0.567	1.000		
LIQ	−0.196	0.209	0.098	0.090	1.000	
LEV	−0.096	0.022	−0.029	0.089	−0.082	1.000

The Table showed the pairwise correlation between independent variables.

4.1.2. Baseline Regression Results

The results of the basic regression (see **Table 4**), using the GMM model, indicate that cost inefficiency (OCR) has a significant positive effect on ROE, aligning with our hypothesis. This finding shows that in sugar companies, higher cost inefficiency leads to increased profitability. This result is consistent with studies conducted by Yamamura and Kondoh [19], Nguyen et al. [5], Tullock in Wong et al. [10], Bi et al. [11], Angelopoulos et al. [12], Boldrin and Levina [20], and Grazhevska, Virchenko, and Grazhevska [21], which indicate a positive relationship between inefficiency and profitability that can occur in rent-seeking industries. However, the research by Handoyo et al. [22] contradicts these findings, showing a negative effect between inefficiency and profitability.

The regression results in **Table 4** also indicate that the Country Governance Index (CGI) has a significant negative effect on ROE. This finding supports the second hypothesis of this study. It is in line with studies conducted by Chen & Bu [17], Curti and Mihov [23], Rio and Lores [24], and Hall and Jones (as cited in Rio and Lores [24]). The negative relationship between CGI and ROE suggests that in rent-seeking industries, strict regulations imposed by the government will decrease corporate profitability because companies engaged in rent-seeking require a flexible government system to obtain privileges that can enhance their profits. Additionally, the interaction between cost inefficiency and poor governance results in increased profitability for companies (see **Table 4**). This result aligns with the study by Wong et al. [10], which posits that cost inefficiencies caused by industry players engaging in rent- seeking can enhance profitability. When sugar companies face poor governance, they are more likely to exploit opportunities to gain profits through non-transparent means. A poor governance environment creates a conducive atmosphere for corrupt practices. However, if cost inefficiency and poor governance reinforce each other, resource allocation becomes suboptimal, leading to stagnation in innovation and industry development. Furthermore, the interaction between OCR and CGI also indicates that both have a positive but insignificant relationship with profitability. These results differ from the research conducted by Ngobo and Fauda [30] and are not in line with the research hypothesis. In the long term, high inefficiency can hinder innovation and sustainable growth. The uncertainty generated by state inefficiency can also reduce investor confidence and limit opportunities for companies to grow.

Table 4. Baseline regression results.

VARIABLES	GMM
L.ROE	0.233***
	(−0.0266)
L2.ROE	−0.142***
	(−0.0142)
OCR	0.0776***
	(−0.0189)
CGI	−0.138**
	(−0.0702)
c.OCR#c.CGI	0.268
	(−0.3031)
SIZE	0.0531***
	(−0.0185)
LIQ	−0.049
	(−0.151)
LEV	−0.0331***
	(−0.0084)
Sargan Hansen	58.94
Cragg Mac Donald	16.9**
AR1	−4.694***
AR2	−0.92
Observations	1,152
Number of id	144

The results of the regression (see **Table 4**) are also consistent with the research by Zambrano, Martinez, and Martin [33], which shows that firm size (SIZE) has a positive effect on profitability. This finding aligns with the study's hypothesis. Additionally, this study found that liquidity (LIQ) has a negative effect on profitability. This result is consistent with the hypothesis and the findings of Pasiouras and Kosmidou in Worku, Bayleyegne, and Tafere [34]. Furthermore, this study also shows that leverage (LEV) has a significant negative effect on profitability. This result corresponds with the findings of Maghyereh in Husin and Pinjaman [35], which suggest that leverage has a negative relationship with profitability. This finding does not support the research conducted by Wu and Yue in Husin and Pinjaman [35] and Sayilgan in Husin and Pinjaman [35], which found a positive effect between leverage and profitability.

This table reported baseline (two step difference GMM) regression results between dependent variables (ROE) with variables of interests (OCR, CGI) and control variables (SIZE, LIQ, LEV). Coefficients and standard error reported in parentheses with level of significance denoted by ***/** and * for p value of 1%, 5% and 1% respectively.

4.1.3. Robustness Check

The researchers conducted a robustness check as the basis for this study (see **Table 5**). The robustness check was performed using alternative variables to replace the dependent and independent variables. Additionally, each component of the Country Governance Index (CGI) was also subjected to a robustness check. These components include Political Stability and Absence of Violence/Terrorism (PSA), Regulatory Quality (RQ), Rule of Law (ROL), Control of Corruption (CC), Government Effectivenes.

The results of the robustness test indicate that when the OCR proxy is replaced with the ATR proxy, the results remain significant, showing that higher asset inefficiency is associated with increased profitability. This indicates that OCR and ATR are measurement ratios that relate to inefficiency. While OCR measures inefficiency in terms of costs, ATR measures inefficiency in terms of utilization [49]. From **Table 6**, it can be seen that there is a significant positive effect between ATR and ROE. As asset inefficiency increases, profitability also increases. However, the study by Xu et al. [49] shows the opposite result, where higher asset efficiency correlates with increased profitability. In industries practicing rent-seeking, it is common for increased asset inefficiency to coincide with increased profitability. Congleton, Hillman, and Konrad [51] argue that companies in rent-seeking industries often rely on advantageous market positions or control over scarce resources, allowing them to maintain profits even without efficient asset utilization.

Furthermore, the robustness test results when the ROE proxy is replaced with GPM also show consistent results similar to those of the baseline regression. This indicates that ROE and GPM are closely related, as both reflect the profitability of the company, even though they measure different aspects. Companies involved in rent-seeking often have pricing power, allowing them to maintain high margins. A good GPM indicates that, despite high variable costs, the company can set prices sufficiently to sustain profitability. This suggests that as cost inefficiency increases, profits also rise.

The robustness test results for each CGI component show that three components are significant: PSA, RQ, and VA. PSA relates to the measurement of government quality and stability in a country. In rent-seeking industries, it is closely linked to political stability, as companies often gain benefits from favorable regulations. Political stability enables consistent and clear policies, helping companies plan their strategies and minimize legal risks. Kimenyi and Mbaku [52] also argue that political stability is indicative of rent-seeking practices. Inefficient economic policies can also be linked to political stability. RQ relates to effective, transparent government policies and regulations that support economic activities. In rent-seeking industries, companies often rely on favorable regulations to increase their profits, making good regulations influential in determining the extent of opportunities to exploit those profits. Rio and Lores [24] state that regulation can enhance productivity and output, protect against diversion, but can also be used for rent-seeking, reducing social welfare, and redistributing income among individuals. Lastly, VA measures the extent to which the public has opportunities to participate in decision-making processes and oversee government

Table 5. *Robustness Check Results*: Alternative proxies.

VARIABLES	BASELINE	ROE, ATR	GPM, OCR	GPM, ATR	ROE, OCR, PSA	ROE, OCR, RQ	ROE, OCR, ROL	ROE, OCR, CC	ROE, OCR, GE	ROE, OCR, VA
L.ROE	0.233***	0.202***			0.235***	0.233***	0.238***	0.225***	0.220***	0.232***
	−0.0266	(0.0350)			(0.0256)	(0.0285)	(0.0303)	(0.0299)	(0.0291)	(0.0280)
L2.ROE	−0.142***	−0.195***			−0.141***	−0.149***	−0.138***	−0.139***	−0.146***	−0.125***
	−0.0142	(0.0178)			(0.0148)	(0.0158)	(0.0145)	(0.0162)	(0.0144)	(0.0165)
L.GPM			0.192***	0.242***						
			(0.0343)	(0.0271)						
L2.GPM			−0.0556***	−0.0457***						
			(0.0199)	(0.0153)						
OCR	0.0776***		0.0267***		0.0763***	0.0833***	0.0595***	0.0879***	0.0653***	0.0763***
	(0.0189)		(0.00915)		(0.0159)	(0.0152)	(0.0155)	(0.0230)	(0.0117)	(0.0158)
ATR		0.0260***		−0.0488***						
		(0.00977)		(0.00502)						
CGI	−0.138**	−0.259***	−0.108*	−0.150***						
	(0.0702)	(0.101)	(0.0571)	(0.0573)						
SIZE	0.0531***	0.0410	0.0326***	0.0128	0.0646***	0.0649***	0.0465**	0.0707***	0.0532**	0.0579***
	(0.0185)	(0.0275)	(0.0107)	(0.0145)	(0.0193)	(0.0220)	(0.0207)	(0.0211)	(0.0213)	(0.0204)
LIQ	−0.0490	−0.275	0.280***	0.259***	−0.0618	−0.116	−0.106	−0.00258	0.0292	0.107
	(0.151)	(0.193)	(0.0881)	(0.0942)	(0.156)	(0.139)	(0.150)	(0.133)	(0.139)	(0.149)
LEV	−0.0331***	−0.0321***	−0.000764	0.000538	−0.0341***	−0.0326***	−0.0323***	−0.0361***	−0.0346***	−0.0330***
	(0.00394)	(0.00497)	(0.00134)	(0.00167)	(0.00405)	(0.00429)	(0.00426)	(0.00404)	(0.00389)	(0.00404)
c.ATR#c.CGI		0.0658***		−0.0220**						
		(0.0179)		(0.00858)						
c.OCR#c.CGI	0.0268		−0.0166							
	(0.0303)		(0.0108)							
c.OCR#c.PSA					0.0117					
					(0.0124)					
c.OCR#c.RQ						0.0393				
						(0.0247)				
c.OCR#c.ROL							−0.0155			
							(0.0347)			
c.OCR#c.CC								0.0409		
								(0.0369)		
c.OCR#c.GE									0.0337	
									(0.0292)	
c.OCR#c.VA										0.0170
										(0.0184)
PSA					−0.0793**					
					(0.0352)					
RQ						−0.114***				
						(0.0426)				
ROL							−0.0464			
							(0.0588)			
CC								0.0714		
								(0.0595)		
GE									−0.0372	
									(0.0378)	
VA										0.115**
										(0.0534)
Sargan Hansen	58.050	73.223	73.157	79.611	60.099	57.319	60.597	61.910	58.094	59.071
Cragg Mac Donald	16.9**	15.8**	16.09**	15.16**	15.1**	15.06**	10.06*	10.07*	10.15*	11.08*
AR1	−4.694***	−5.1681***	.	−3.805**	−4.450***	−4.342***	−4.404***	−4.315***	−4.476***	−4.231***
AR2	−0.920	0.0353	1.6505	1.2745	−0.9871	−0.715	−0.957	−1.076	−0.808	−1.28
Observations	1,152	1,152	1,152	1,152	1,152	1,152	1,152	1,152	1,152	1,152
Number of id	144	144	144	144	144	144	144	144	144	144

This table reported Robustness Check regressions between dependent variables (ROE) with alternative proxies of variables of interests (ATR and CGI components) and control variables (SIZE, LIQ, LEV). Coefficients and standard error reported in parentheses with level of significance denoted by ***/** and * for p value of 1%, 5% and 1% respectively.

actions. With public participation, society can provide input and influence policies that may benefit a select few companies, affecting the likelihood that policies will be designed to favor specific groups.

The researchers also conducted a robustness check using country-region and country status samples (see **Table 6**). Due to the small sample size for the country-region sample in North America (NA), the authors decided to combine the robustness results of NA and South Asia (SA) into a single category, NASA. The results of the robustness check show a consistent positive influence of OCR on ROE, similar to the baseline regression results. Additionally, the negative influence of CGI on ROE remains consistent across all country regions, aligning with the baseline regression results.

4.2. Discussion

The descriptive statistics suggest that the performance of the companies in the sample is generally strong, with key financial indicators such as ROE, OCR, and CGI aligning closely with their median and average values.

Furthermore, the regression analysis reveals that cost inefficiency (OCR) positively impacts profitability (ROE) in sugar companies, supporting the hypothesis that inefficiency can lead to higher profits in rent-

Table 6. *Robustness Check*: Country Subsamples.

VARIABLES	BASELINE	EAP	ECA	LAC	MENA	NASA	SSA	DEVELOPED	DEVELOPING
L.ROE	0.233***	−0.0140	−0.218	−0.128	−0.0652	0.151***	2.036**	−0.0790***	0.220***
	(0.0266)	(0.0130)	(0.279)	(0.136)	(0.262)	(0.00819)	(0.870)	(0.0115)	(0.0251)
L2.ROE	−0.142***	−0.201***	−0.755**	−0.274*	−0.504*	−0.258***	1.141	−0.243***	−0.154***
	(0.0142)	(0.00811)	(0.307)	(0.155)	(0.261)	(0.00496)	(0.906)	(0.0196)	(0.0147)
OCR	0.0776***	0.105***	0.0742**	0.0781***	0.101	0.075***	0.544	−0.0549***	0.123***
	(0.0189)	(0.00348)	(0.0313)	(0.0166)	(0.166)	−0.00543	(0.556)	(0.00492)	(0.0208)
CGI	−0.138**	−0.199***	−1.683**	−0.0772	−0.589	−0.299***	−3.508	−0.115***	−0.282***
	(0.0702)	(0.0502)	(0.674)	(0.193)	(0.728)	(0.0323)	(2.385)	(0.0414)	(0.0781)
c.OCR#c.CGI	0.0268	−0.0696***	0.267*	0.0606	0.0305	−0.0922***	3.533*	0.206***	0.0952***
	(0.0303)	(0.00770)	(0.153)	(0.0841)	(0.176)	(0.00568)	(1.823)	(0.00475)	(0.0318)
SIZE	0.0531***	0.0203*	0.555	−0.0372	0.0430	0.231***	−2.279	0.219***	0.0457**
	(0.0185)	(0.0112)	(0.374)	(0.0651)	(0.0402)	(0.0116)	(1.493)	(0.0132)	(0.0180)
LIQ	−0.0490	0.316***	−1.153	−0.137	−0.707	−0.0148		0.353**	−0.0993
	(0.151)	(0.0372)	(0.770)	(0.213)	(0.562)	(0.0609)		(0.146)	(0.143)
LEV	−0.0331***	−0.0202***	−0.0598	−0.00921	0.0123	−0.0390***	0.0605	−0.103***	−0.0333***
	(0.00394)	(0.00270)	(0.0412)	(0.0328)	(0.0223)	(0.00196)	(0.0545)	(0.00311)	(0.00383)
Sargan Hansen	58.050	33.000	11.000	14.000	14.000	32.416	7.000	23.000	59.128
Cragg Mac Donald	16.9**	15.01*	14.81*	14.81*	14.82*	5.95	6.01	17.053***	0.880*
AR1	−4.694***	−3.0298**	−4.630***	−1.334***	−7.603***	−7.041***	−4.845***	−3.224**	−4.503***
AR2	−0.920	−1.119	2.919	1.694	0.433	−0.464	−0.322	−0.794	−0.536
Observations	1,152	264	88	112	112	520	56	184	968
Number of id	144	33	11	14	14	65	7	23	121

This table reported Robustness check regressions results between dependent variables (ROE) with variables of interests (OCR and CGI) and control variables (SIZE, LIQ, LEV). Robustness check carried out using sub sample sets categorized based on *country-region* (*East Asia & Pacific* - EAP, *Europe & Central Asia* - ECA, *Latin America & Caribbean* - LAC, *Middle East & North Africa* - MENA, *North America* - NA, *South Asia* - SA, dan *Sub Saharan Africa* - SSA) and CTY_status (*developed* and *developing*). Coefficients and standard error reported in parentheses with level of significance denoted by ***/** and * for p value of 1%, 5% and 1% respectively.

seeking industries. However, the Country Governance Index (CGI) has a significant negative effect on ROE, suggesting that stricter regulations reduce profitability, as companies in such industries require more flexible governance for higher profits. The interaction between cost inefficiency and poor governance further enhances profitability, though it may also contribute to stagnation in the long term. Additionally, firm size is positively correlated with profitability, while liquidity and leverage have negative effects, aligning with several prior studies. These findings highlight the complex relationship between inefficiency of company, inefficiency of governance, and profitability in rent- seeking industries like the sugar sector.

The robustness check confirms the consistency of the study's findings across alternative variables and components of the Country Governance Index (CGI). Replacing the OCR proxy with ATR still shows a significant positive relationship between asset inefficiency and profitability, which aligns with rent-seeking industries where inefficiency often correlates with higher profits. Additionally, replacing ROE with GPM yields similar results, indicating that both measures reflect profitability. The CGI components—Political Stability, Regulatory Quality, and Voice and Accountability—were found to significantly influence profitability, particularly in rent-seeking industries where political stability and favorable regulations drive profits. Overall, the robustness checks validate the study's main findings across different proxies and country-region samples.

This study found that cost inefficiency (in this case, using OCR as a proxy) is positively associated with profitability (ROE) in sugar companies. This finding confirms that in rent- seeking industries, inefficiency does not always reduce profitability; instead, it can enhance profits. This contradicts with other studies that suggest inefficiency is generally linked to a decline in company performance (as found by Handoyo et al.[22]). Moreover, this study reveals that the Country Governance Index (CGI) significantly negatively impacts profitability, suggesting that stricter regulations decrease profits in rent-seeking industries, where companies typically depend on more flexible governance to enhance earnings. While other studies have examined the link between governance and profitability, this research focuses on the interaction between cost inefficiency and weak governance, providing fresh insights into their combined effect on profitability in rent-seeking sectors. The interaction between cost inefficiency and poor governance can also enhance profitability in the short term, although it may lead to long-term stagnation. It highlights that while companies can exploit inefficiency and lack of regulation for short-term gains, this can hinder growth and innovation in the long run. This concept offers new insights into how the combination of these two factors can impact company performance in rent-seeking industries.

5. Conclusions

This study aims to investigate the relationship between cost inefficiency and governance on the profitability of sugar companies on a global scale, using the Two-Step Difference GMM model. The main finding of this research is the positive correlation between inefficiency (company and country level) and profitability. The finding is robust under an array of checking.

Based on these findings, it can be observed that rent-seeking practices are often found in the sugar industry. If sugar companies continue to engage in rent-seeking, it will have negative long-term effects, such as hindering economic growth and causing economic instability. One approach that companies can take to avoid rent-seeking practices is to focus on innovation and productivity, thereby redirecting their activities away from rent-seeking. Additionally, companies can enhance transparency in their business practices and implement a strong code of ethics to avoid corrupt practices. From a political perspective, the government needs to strengthen regulations and oversight in the sugar sector involved in rent-seeking. This approach will encourage companies to operate more efficiently and shift their focus away from unproductive practices. Furthermore, the government should consider implementing incentives that support cost efficiency and better resource utilization within companies. In the long term, this will not only increase the profitability of companies but also contribute to sustainable economic growth and the improvement of community welfare. Policymakers should prioritize enhancing political stability and ensuring transparent, effective regulations. Political stability helps businesses plan strategically, reduces uncertainty, and increases confidence in the market. Meanwhile, high-quality regulations can create a level playing field, enabling fair competition and fostering economic efficiency. Then, policymakers can create a more efficient and profitable environment for companies in rent-seeking industries, encouraging sustainable growth while minimizing inefficiencies and harmful practices

For further development, future research could investigate the differences in the impact of inefficiency and state governance on profitability across various sub sectors of the sugar industry, such as refined sugar and consumer sugar, to gain broader insights. Additionally, concerning rent-seeking, future researchers could explore how companies allocate costs for engaging in rent-seeking practices, as companies involved in rent-seeking typically set aside funds for the protection of these activities. Moreover, future studies could identify how inefficiencies can create profitability and the reasons behind variations among countries. Furthermore, researchers could expand the range of indicators by incorporating additional relevant variables, such as the level of innovation and external factors influencing profitability. Finally, case studies could be conducted in other sectors across different countries to provide a comprehensive understanding of the effects of inefficiency, state governance, and profitability in various contexts.

Author Contributions

Conceptualization, V.S. and M.D.A.; methodology, V.S. and M.D.A.; software, V.S. and M.D.A.; validation, V.S.; formal analysis, V.S. and M.D.A.; investigation, V.S. and M.D.A.; resources, V.S.; data curation, V.S.; writing-original draft preparation, V.S.; writing-review and editing, V.S. and M.D.A.; visualization, V.S.; supervision, V.S. and M.D.A. All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement

All data can be obtained through OSIRIS and World Data Bank (https://databank.worldbank.org/source/worldwide-governance-indicators).

Conflicts of Interest

The authors declare no conflict of interest.

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