

THE EFFECTS OF RENT SEEKING ACTIVITIES ON ECONOMIC GROWTH IN MIDDLE-INCOME COUNTRIES

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ABSTRACT

This study investigates the effects of rent seeking activities on economic growth in 53 middle-income countries. Our data span the period 2011 to 2020. We use the generalized method of moments estimator to examine the effects of rent-seeking activities on economic growth. Our study also includes several control variables, namely democratic accountability, public debt, human capital, foreign direct investment, capital stock, population, research and development expenditure and trade openness. The empirical results suggest that rent-seeking activities impede economic growth in middle-income countries.

Keywords: Rent-seeking; Economic growth; System generalized method of moment estimator; Middle-income trap; Middle-income countries.

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I. INTRODUCTION

This paper examines how rent seeking activities affect economic growth in Middle-Income Countries (MICs). Undoubtedly, governments all around the world tend to promote (sustainable) economic growth (Gavin and Perotti, 1997). However, questions or concerns arise that why the desired outcome has yet to be achieved, given the strong macroeconomic indicators. Why are many MICs stuck in the middle-income trap for years despite the strong macroeconomic performance? The World Bank defines middle-income trap as a situation in which middle-income countries are stuck with slow growth for a long period after reaching a middle-income level. They face difficulties moving towards a high-income status due to low effectiveness and efficiency when competing with low-wage competitors in poor countries on one hand, and due to the lack of innovative capabilities relative to high-income economies on the other. The middle-income trap has become a conspicuous issue for most MICs as only a limited number of examples (countries) have been successful in attaining a high-income status. As suggested by Rodrik (2008), in order to avert the middle-income trap and to have sustainable economic growth for climbing up to a higher ladder, high institutional quality is the key to assist MICs to achieve this goal.

In addition, the term “rent seeking” describes the use of public office for personal benefit (World Bank, 1997). Rent seekers tend to lobby the government to seek for favorable position, self-interest, and significant rents but have no intention to create new wealth (Brumm, 1999; Cole and Chawdhry, 2002; Iqbal and Daly, 2014). Therefore, rent-seeking also can be considered as an expenditure towards lobbying/bribery by interested groups to get preferential treatment from the government through public policy such as regulation, taxation, or subsidy (Krueger, 1974). This is because rent-seeking distorts productive activities of the economy by imposing social costs, misallocation of public resources (Soto, 2003) - funds are being channeled to the unproductive sector or in an extreme case, resources from productive sectors might be channeled to the unproductive ones, given poor institutional quality.

The presence of rent-seeking activities in a market indicates a lack of institutional quality which twists the true costs and economic incentives (Ugur and Dasgupta, 2011). Rent seeking activities build a cost and incentive structure that is distorted, shaping the expectations and decisions of all economic actors, and it affects economic growth both directly and indirectly by increasing the costs of production and generating social inefficiencies (Barro, 1991; Mauro, 1995; Tanzi and Davoodi, 1998; Svensson, 2005; Ugur, 2014). For example, one of the main factors causing the failure of governments is accusations of bribery especially towards eminent politicians such as presidents or prime ministers (Tanzi, 1998).

Furthermore, the existence and exemplification of social costs as the resources used for rent-seeking has a positive opportunity cost at somewhere in the economy which is appealing to positive-sum activities. Tullock (1967) explained that wasting valuable resources by destroying value and being unproductive is the characteristics of rent-seeking. These features might lead to high public debt and hampered innovation (Murphy *et al.*, 1993) which in turn, impede economic growth despite desirable macroeconomic performance. In all, rent seeking, ‘the form of social costs captured by the expenditure transfer’ (Tullock, 1967), causes

enormous waste of social resources and thus prevents economic growth (Krueger, 1974).

Given its potential impact on economic development, rent seeking activity has been an alarming issue for nations regardless of their region or income group as it affects the decisions of a government regarding the allocation of national resources, policy-making, and other areas through the influence of special interest groups. While the major concern of the World Bank and the others alike is the impact of corruption (rent seeking) on economic growth. The pioneering works of Tullock (1967), Krueger (1974) and Posner (1975) on the analysis of rent seeking behaviour, together with later extensions by numerous other researchers, has recently caused many economists and researchers to pay attention to this issue both theoretically and empirically.

Based on the traditional rent seeking theory, there are various forms of preferential seeking/treatment (among which are competitive lobbying and corruption) by public policy makers which induce private parties to try to gain from the resulting economic rents and even compete against each other by paying bribes. Rent seeking is equivalent to corruption when competition for preferential treatment is constrained to only a few insiders, along with the valuable rent seeking expenses for the recipient. According to Posner (1975), lobbying for a fixed prize - corruption is one form of rent-seeking activities. For a bidder to obtain a license outside of the action process, it will incur the transformation from real resources expansion to unproductive activities through bribe payment. As a matter of fact, in the early 1990s, rent-seeking was expressed as 'corruption'; or as the concept of 'directly unproductive activities' and 'soft budget constraints', the terms were used as synonyms, subsets, or related but different aspects of rent-seeking. Therefore, it is not extensive to conclude that corruption is a type of rent seeking activity. According to Lambsdorff (2002), corruption is a more monopolistic type of rent seeking activity, and to some extent, they can be used interchangeably.

There has been substantial amount of research being conducted to study the economic impacts of corruption on economic growth (see: Tanzi, 1998; Rose-Arkerman, 1999; Del Monte and Papagni, 2001; Ishola Mobolaji and Omoteso, 2009; Tsaturyan and Bryson, 2009; Maiyaki, 2010; Dridi, 2013; Grabova, 2014). Most of these studies followed the estimation approaches developed by Barro (1991) and Levine and Renelt (1992) where average economic growth is considered as a function of average corruption and certain controlled variables in a cross-sectional framework. The empirical literature (Blomqvist and Mohammad, 1986; Mauro, 1995; Ugur and Dasgupta, 2011; D'Agostino *et al.*, 2016) showed that corruption tends to impede growth. Tanzi and Davoodi (1998) documents that corruption can reduce economic growth through two channels. Firstly, corruption slumps the competence of infrastructure. Secondly, corruption decreases government revenue and hence, spending on health care and education. Besides, Gupta (1998) found that rent seeking increases the gains of rich people at the cost of poor segments due to inappropriate allocation of resources.

According to Tanzi (1998) and Rose-Arkerman (1999), corruption has a negative effect on economic performance by not only reducing private investment and affecting government expenditure on health and education but also by leading to imbalanced spending and the inefficient allocation of national resources. Del

Monte and Papagni (2001) documented a similar finding and state that economic growth was affected by corruption both through the direct effect on average labour income and through an indirect effect via a decrease in private investment, which in turn successively reduced the efficiency of public investment spending.

Corruption also tends to hinder investments because it is a tax on investment. According to Business Monitor International, a London-based risk consultancy, high levels of corruption have seriously deterred investment in Indonesia's infrastructure especially from non-public sources (Quah, 2014). If corruption do not reduce the level of investment, it will still lower the efficiency of the said investments. For instance, the studies on least-developed countries by Blomqvist and Mohammad (1986) as well as Ugur and Dasgupta (2011) supported each other by reporting that corruption reduced efficiency and that the impact was especially large through the channel of human capital. The resulting inefficiency, especially in resource allocation, was due to the bias of public officers or politicians towards transactions that offered greater opportunities for bribery (rent seeking activities). This, in turn, resulted in a wastage of resources in projects that were not competitive enough (Quah, 2014).

Rent seeking activities also may affect long-term economic growth and development through its negative impact on productivity. This is because rent seeking increases the cost of doing business. World Bank analysis suggested that corruption could increase the cost of projects in Indonesia by up to 20 percent (Quah, 2014). D'Agostino *et al.* (2016) interacted corruption with government spending (military spending and investment spending) in examining the impact on growth for 106 mixed countries. Their results revealed that the interaction had substantial adverse impacts on growth, implying that government policies or expenditure may not help in promoting growth if the resources/funds were not being channeled into productive and competitive sectors. The costs of rent seeking are enormous under most political regimes to the extent that they exceed total income in many economies, including the United States (Dougan, 1991).

On the other hand, there are some studies (see Glaeser and Saks, 2006; Park, 2012; Forooq *et al.*, 2013) which investigates the rent-seeking's impact on economic growth through the channel of financial sector. Note that rent seeking tends to take place when there are numerous rules and regulations which encourage the rent seeker to pay bribes in order to evade these regulations. Undeniably, banking sector is more regulated than the other sectors, therefore, banking industry is more susceptible for rent seeking activities. For example, loan can be approved by bypassing loan reviewer process, to gain regulatory forbearance. Forooq *et al.* (2013) reveal that there is a negative and statistically significant effect of corruption on economic growth. Rent seeking activity significantly worsened the quality of bank loans by bypassing loan reviewer process, hence, it is difficult to detect the non-performing loan. The resulting increase in bad loans will lead to reduced growth of a nation's economy. This shows that the allocation of bank funds transferred from a profitable project to non-performing project could decrease the quality of private investment.

The above-mentioned studies thus far provide empirical evidence that corruption has an adverse effect on economic growth through inefficient private/public investment and the misallocation of public resources and. Other than harms,

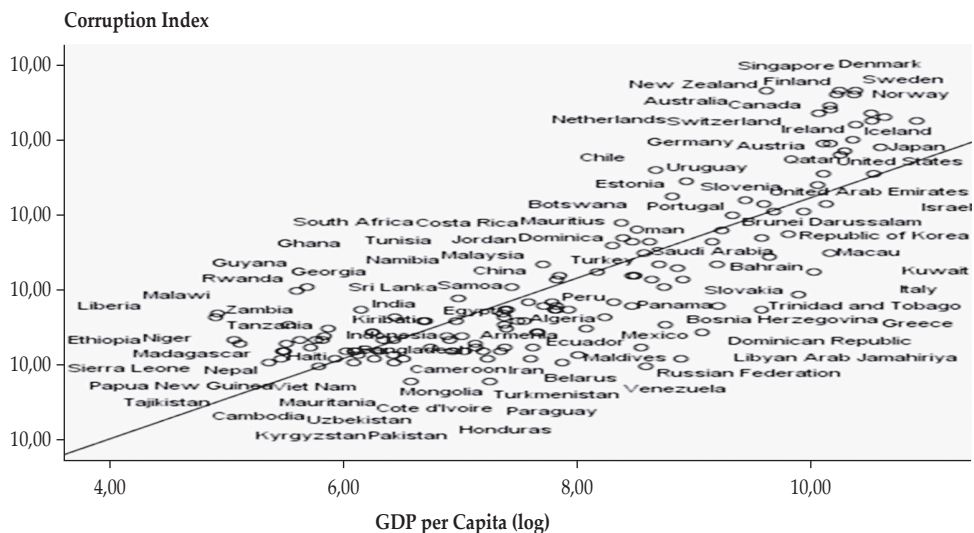
rent seeking, in contrast, also helps in stimulating economic growth. Sometimes, bribes act as a lubricant to smoothen the process of trade or facilitate production that would not happen otherwise or may assist as sign for growth opportunities. Rent seeking practice may stimulate efficiency by helping private agents to evade restrictive regulation (Leff, 1964; Moen and Weill, 2010; Huang, 2016). Lui (1996) had a consistent finding based on the queue model where firms are willing to pay bribes to the official to obtain business license, and hence, to avoid the delay of investment. The positive and significant relationship between rent seeking/corruption and economic growth was also found in a recent study (Huang, 2016). This is consistent with Wedeman (1997) findings in which the author document that the higher economic development in South Korea brought by rent seeking activity (with acceptable rate of rent seeking activities) can help in increasing the efficiency of the government officials.

Taken together, in line with the pioneering work of Leff (1964) w the vast literature documented inconclusive findings with respect to the relationship between rent seeking activities and economic growth. Based on this drawback of this literature, this study hypothesizes that rent-seeking promotes and hinders economic growth. The hypothesis is motivated and supported by both the extensive documentation of negative relationship (and the 'putting sand on wheel hypothesis') as well as the 'greasing the wheel' hypothesis of Méon and Weill (2010) and the 'queue model' by Lui (1996). By adopting the System Generalized Method of Moments (GMM) estimators which are suitable in capturing the dynamic nature of the involved data and endogeneity problem, this study empirically examines the effects of rent seeking activities on economic growth for a panel of 53 MICs during the period 2011-2020. In line with the prior literature, our findings reveal that rent-seeking activities retard economic growth.

We have plotted corruption perception index in Figure 1 which is used to measure rent seeking activities - the horizontal axis indicates the Corruption Perception Index (CPI) for which an increase in CPI index means a stronger control of corruption in a country and vice-versa. On the other hand, the vertical axis represents the GDP per capita. While the buttons distributed on the top-right corner are referring to developed countries where they have better control of corruption and they enjoy high economic growth, the buttons distributed in the lower-left corner refer to the countries that have relatively less control over corruption and achieved relatively low economic growth - most of them are middle- and low-income countries. In all, rent-seeking is deemed to be having a negative relationship with economic growth as a higher corruption perception index (lower rent-seeking activities) is associated with higher economic growth. This relationship would be especially applicable in the MICs and this does not seem very surprising as MICs, unlike the high-income counterpart, are less endowed, both in terms of funds and expertise, making them less able to navigate through a corrupt and inefficient bureaucracy effectively (Narayan and Bui, 2021), thereby retarding economic growth. Taken together, MICs (for example, Vietnam, India, Cambodia, Sri Lanka and Nepal) are more disadvantaged by a corrupt system.

Figure 1.
Rent-Seeking Activities and Economic Growth

This figure plots the relationship between rent seeking activities and economic growth. Source: International Country Risk Guide (ICRG), World Development Indicator (WDI).



For these countries to move upward to achieve high-income status, sustain rapid growth serves as a key determinant and challenge. This is because, while Low-Income Countries (LICs) with rapid economic growth can easily graduate and become MICs, the latter group of countries will find themselves difficult to promote from middle-income status to the status of high-income, despite that their economic growth rate were found to be surpassing those of High-Income Countries (HICs). This issue refers to middle-income trap in which one of the key factors is the challenge of poor institutional quality featuring the MICs, compared to HICs. Increased rent-seeking activity is a sign of serious institutional fragility. It is also a blame for reducing investment and inappropriate expenditure, widening income inequality, then reducing foreign direct investment, distorting the market, and issue of reallocation of resources - all these changes will cause a potential loss in government's revenues in the developing countries

The contribution of this study to the literature are multiple folds. First, mixed results found in the existing literatures in regard to the relationship between rent-seeking activities and economic growth - the 'sand' and 'grease' wheels hypotheses, has created the inspiration to this study in clarifying the rent-seeking's impact on economic growth. The challenge of MICs, namely the middle-income trap has widely been studied in the framework of economic growth model¹ in which it indicated that convergence of economic growth in MICs depends on human capitals, investments, FDIs, and capital accumulations that predominantly focused

¹ See Cai (2012) indicated that the "middle-income trap" is in line with the framework of the mainstream economic growth theories, therefore it is a useful concept which we can analyse the economic growth phenomena in the specific economic growth phases

on these traditional and material manifestation aspects of economic growth. However, as far as this study is concerned, limited studies have focused on how rent-seeking activities affect economic performance from the middle-income trap perspective.

Furthermore, the existing empirical studies have generally covered different countries or only focused on a single country (see: Dougan, 1991; Kimenyi and Mbaku, 1993; Mauro, 1995; Lambsdorff, 2002; Lash, 2004; Ugur and Dasgupta, 2011; Hill, 2012; Kis-Katos and Schulze, 2013; D'Agostino *et al.*, 2016;). For instance, Saha and Ali (2017) generally investigated LICs, MICs as well as HICs. However, relatively limited research (as far as we are concerned) has been carried out specifically on MICs (Blomqvist and Mohammad, 1986). In fact, the linkage from the perspective of MICs is especially unneglectable (Owusu-Nantwi and Erickson, 2016; Lopez and Nahon, 2017). The focus on MICs is due to the fact that they are classically under a process of development but still in the transition phase; rent-seeking activities are described as heterogeneous (Iqbal and Daly, 2014), owing to the lack of institutional quality in these countries. When the institutional quality is underdeveloped, rent-seekers will have the 'opportunity' to develop their own unique interest, resources will be redirected, and money will be redistributed by breaking restrictions. According to Spinesi (2009), the presence of rent-seeking activity is more common in MICs when compared to HICs. Although efforts to control rent seeking have been made, the problem of rent seeking still exists in these countries and it might be a significant obstacle to the development of these countries and may prevent them from moving forward to the high-income category.

Finally, this study provides alternative measurements to close the research gap of CPI on pre-2012 observation². Notably, these observations were published before 2012 by Transparency International and it consists of data for different components and time periods to measure the rent-seeking activities across the continents. Therefore, to provide a robust empirical evidence, this study adopts two different proxies from two sources to measure the rent-seeking activities namely the World Governance Indicator (WGI) and Transparency International (TI), over the period 2011 - 2020. The main objective of this paper is to provide an explanation to policymakers in MICs as to why middle-income trap exists for such a long time, economic growth is hard to be stimulated and sustained, despite the EXTENSIVE initiatives have been rolled-out by the government to attract more FDI, and capital accumulation.

The remaining paper is organized as follows. Section II explains the theoretical framework while Section III explains the methodology. Section IV discusses the main empirical results and finally Section V concludes the study.

² Grundler and Potrafke (2019) argued that the CPI for pre-2012 was not comparable over time. Transparency International emphasised: "Following a rigorous review process, some important changes have been made to the methodology in 2012. The method we use to aggregate different data sources has been simplified and also now includes just one year's data from each data source. Crucially, this method will allow us to compare scores over time, which was not methodologically possible previously. Given the changes to the methodology, it must be emphasized that country scores of the CPI 2012 cannot be compared against those of 2011 or previous editions. Year to year comparisons will be possible from 2012 onwards" (Transparency International, 2012, p.1)

II. THEORETICAL FRAMEWORK

This study's theoretical framework is originated from the model of Barro (1991) and Mauro (1995). Generally, the growth mechanism in production function is expressed as follow:

$$Y = tf(K, L) \quad (1)$$

where total output level is denoted by Y , total factor production is denoted by T , the notations K and L stand for capital and labour, respectively.

The total differentiation of Y is given as follows:

$$dY = f dT + T(f_K dK + f_L dL) \quad (2)$$

Dividing Equation (1) by Y yields into a decomposition similar to Solow (1956) which takes the following form:

$$\frac{dY}{Y} = \frac{dT}{T} + T f_K \frac{dK}{Y} + \frac{f_L}{f} \frac{dL}{L}. \quad (3)$$

Equation (3) shows the Schumpeterian growth theory of economic development by Aghion, Akcigit and Howitt (2015) which differentiates two different effects on the progress of an economy. The first effect indicates the changes in factor availability in the growth component which is related to the growth rate in capital and labour. The second effect focuses on the impact of social and technological changes in the development component which is related to the forces influencing the production function's total productivity growth (Schumpeter, 1961). The main components of growth model are characterized as follows:

$$GR = F[\gamma, IY, dLL] \quad (4)$$

where GR refers to the growth rate of the real GDP, γ is the total factor productivity, the investment output ratio is denoted by IY while dLL is the growth rate of labour. F_γ is equal to 1, The marginal production of capital is F_{KY} and F_{dLL} which represents the elasticity of the output of labour. Besides, the main components that been highlighted by Levine and Renelt (1992) in examining growth rate are referring to share of investment in the GDP, population, the real GDP per capita and human capital. Apart from these, other five control variables are included in this study namely democratic accountability, public debt, foreign direct investment, research and development (RandD) expenditure, and trade openness. While the traditional growth theories focus on the material manifestation components of economic growth like labour, human capital, capital and technology, institutional factors are also important in explaining the growth as they are directly influencing the incentive framework of an economy. Thus, the economic growth equation can be re-written as follows:

$$\gamma = \gamma(\text{Rent seeking}, Y, HC) \quad (5)$$

Rent-seeking is the main variable for this study which is proxied by the Corruption Perception Index (CPI). The theoretical ground of incorporating rent-seeking into the growth analysis lies mainly on the rent-seeking hypothesis, 'sanding and greasing wheel' hypothesis. On one hand, corruption serves as an impediment to economic growth through the distortion to incentive framework, generation and exemplification of social costs, and misallocation of resources. The paper of Narayan and Bui (2021) completely reflects how the poor institutional quality, characterized by corruption and bribery harm the import and export and hence the international trade. In turn, the lack of simplicity, transparency, consistency of regulations and policies relating to trade in Vietnam support traditionally endemic corruption behavior. On the other hand, corruption also serves as a driver of growth through the ease of business as a result of lower bureaucracy and red-taped due to payment (Meon and Sekkat, 2005). Also, through the streamlined process of applying for copyrights and patents by the potential innovators, corruption promotes innovation activities and hence promotes sustainable economic growth. In this study, rent-seeking is used to illustrate the 'sand' and 'grease' wheels hypotheses in order to clarify the rent-seeking's impact on economic growth in the case of MICs.

To ensure that the estimated coefficient captures the rent-seeking's impact, it is important to exert control on the other growth determinants. In general, much research has been carried out on the determinants of economic growth. However, there have been less study focused on rent-seeking and economic growth in MICs. According to Murphy *et al.*, (1993), one of the important determinants of rent-seeking is the share of government expenditure. Talented people will be discouraged from becoming entrepreneurs when there is a large share of government expenditure financed by a higher tax rate in the taxes system, hence, reducing investment spending and leading to lower economic growth. Therefore, rent-seeking in countries with higher government spending tends to lead to a lower growth rate.

III. METHODOLOGY AND DATA

A. Methodology

A structural and empirical approach is employed in this study using panel data. In particular, due to the panel nature of the data and the presence of a lagged dependent variable, the GMM estimator was used to analyse the effects of rent-seeking activities on the economic growth in MICs. The technique was introduced by Arellano-Bond (1991) as well as by Arellano and Bover (1995). System GMM was the preferred estimator because it allows the model to eliminate any country-specific time-invariant effects. Standard pooled Ordinary Least Squares (OLS) and random effects models were less appropriate for this study due to the presence of a lagged dependent variable, correlating with the error term, and which thus would lead to an upward bias and inconsistency when using the OLS method. On the other hand, with respect to the fixed effects estimator, during the transformation,

the country-specific effect error term will be removed. However, $\bar{\varepsilon}_l = \frac{1}{T} \sum_{t=1}^T \varepsilon_{it}$ is the correction between the transformed error term and the transformed lagged dependent variable is a function of $1/T$, indicating that the correlation will only be negligible when T is large. Otherwise, the standard fixed effects estimator will be biased downward.

Considering the dynamic log-linear equation for economic growth (which includes a lagged dependent variable), our empirical model can be specified as follows:

$$\begin{aligned} \ln RGDP_{it} = & \beta_0 + \beta_1 \ln RGDP_{it-1} + \beta_2 \ln RS_{it} + \beta_3 \ln Demo_{it} + \beta_4 \ln PD_{it} + \beta_5 \ln HC_{it} \\ & + \beta_6 \ln FDI_{it} + \beta_7 \ln CP_{it} + \beta_8 \ln POP_{it} + \beta_9 \ln RD_{it} + \beta_{10} \ln TO_{it} + u_{it} \end{aligned} \quad (6)$$

where $\ln RGDP$ represents economic growth, $\ln RS$ refers to rent-seeking activities which are proxied using the corruption index, $\ln Demo$ is the democracy accountability, $\ln PD$ represents public debt, $\ln HC$ denotes human capital, $\ln FDI$ represents foreign direct investment, $\ln CP$ represents capital stock, $\ln POP$ represents population, and $\ln RD$ and $\ln TO$ are represented by RandD expenditure and trade openness, respectively. All variables are expressed in natural logarithmic form.

The instruments are derived from the number of lag dependent variable, number of explanatory variables, constant term, and time dummies. The greater the number of explanatory variables and time dummies, the greater the number of instruments. Besides, the greater the lag for the dependent variable (subject to the length of time periods), the number of instruments is higher.

Equation (6) presumes that economic growth is affected by rent-seeking activities and a set of control variables. The control variables include: the history of economic performance, summarized by the lagged dependent variable; the voice of concern by government, captured by democratic accountability; the government debt level, proxied by public debt (percentage of GDP); Human Capital (HC) is proxied by life expectancy (in total years); net flow of foreign direct investment, is captured by the percentage of net inflow in GDP; capital stock refer to investment over GDP; population is proxied by total population for the country; RandD expenditure refers to the expenditure in percentage of gross domestic product; and trade openness refers to the sum of exports and import of goods and services measured as a share of gross domestic product.

The rent-seeking activities hypothesis - higher rent-seeking activities reduce economic growth - is satisfied if both derivations are negative. An increase in rent seeking activities would then result in lower economic growth, therefore β_2 is expected to have a negative sign. Besides, β_3 - the coefficient of democracy accountability is to have a negative sign because an increase in democracy might give an opportunity to corrupt official. The politician had been elected by the majority in the election will have access to government budget. The politician who has high personal interest might use this opportunity to influence the government policy that favors themselves or a group of special interest person, hence it leads to misallocation of resources. While for the public debt hypothesis - higher public debts reduces economic growth, and the expected sign for β_4 is negative. The

HC in β_5 is expected to have a positive sign since HC is the source of knowledge accumulation that assist for higher level of innovation to improve technological status for the nation. In addition, β_6 and β_7 are expected to have a positive influence on economic growth as a higher index of FDI and higher capital accumulation will promote the nation's economic growth. β_8 is expected to have a positive sign toward economic growth as an increase in population leads to higher investment in human capital and hence promote economic growth. The RandD expenditure captured by β_9 is expected to have a positive effect on economic growth, as the expenditure in RandD leads to more technology advancement hence leading to higher economic growth. Finally, β_{10} is expected to carry a positive sign. The increase in total of exports and imports in goods and services will lead to higher economy output level.

B. Data

This study employed a panel data of 53 MICs covering the period 2011 - 2020. The MICs were selected based on the World Bank's criteria. The variables used in this study include economic growth (proxied by the real GDP per capita, $RGDP$) and the Corruption Index (CI) as a proxy for rent-seeking activities (sourced from World Governance Indicator and Transparency International). Democratic accountability ($Demo$) measures how responsive government is to its people where the data was obtained from the International Country Risk Guide (ICRG); and data for public debt (public debt as a percentage of GDP, PD) was obtained from the World Development Indicator (WDI). Human capital (HC) is represented by life expectancy in total years and the net inflow of foreign direct investment is a measure of foreign direct investment (FDI) - obtained from the WDI. Capital stock (CP), also known as capital accumulation, refers to real investment in tangible means production. Besides, population (POP) is in total population for the country. RandD expenditure (RD) is the total spending in RandD in percentage of GDP. Trade openness (TO) is the sum of exports and import of goods and services measured as a share of GDP. The data for the Corruption Index is published by the Transparency International (TI) has been widely used in related research as a measure of rent-seeking/corruption (Ullah and Ahmad, 2016; Saha and Ali, 2017), where a higher score indicates better control of corruption and vice versa. Democratic accountability, public debt, HC , foreign direct investment, capital stock, population, RandD expenditure, and trade openness represent control variables in this study.

We report descriptive statistics of all variables used in this study in Table 1. The maximum value for $RGDP$ is 559.0 while the minimum value is 2.06. On average, the $RGDP$ for MICs is 4431.55 and the standard deviation is 1488.06. The highest value of FDI is equal to 55.07 whereas the minimum value is -37.15 which indicates the percentage decrease in net inflow of FDI . Mean and standard deviation for FDI is 3.07 and 4.34, respectively.

Additionally, Table 2 depicts the pairwise correlation between rent-seeking activities and economic growth. Notably, it shows that RD (0.47) have the strongest correlation with economic growth followed by HC (0.21), POP (0.16), CP (0.13), and democratic accountability (0.05). Moreover, rent-seeking activities WGI (-0.16

), *TI* (-0.18) and *PD* (-0.009), *FDI* (-0.18), and *TO* (-0.49) are negatively correlated with the dependent variable-economic growth.

Table 1.
Summary Statistics

Notes: This table reports descriptive statistics of data used in this study. *RGDP* is real economic growth, *RS (WGI)* is rent-seeking activities from World Governance Indicator, *RS (TI)* is rent-seeking activities from Transparency International, *Demo* is democratic accountability, *PD* is public debt, *HC* is human capital, *FDI* represents foreign direct investment, *CP* is capital stock, *POP* denotes population, *RD* represents research and development expenditure, and *TO* denotes trade openness.

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>RGDP</i>	2310	4431.55	1488.07	2.06E+07	559.04
<i>RS(WGI)</i>	1407	39.09	19.61	0.47	9.23
<i>RS(TI)</i>	716	3.66	0.95	1.40	6.80
<i>DEMO</i>	1407	3.64	1.28	0.72	6.00
<i>PD</i>	569	53.24	34.25	3.67	277.5
<i>HC</i>	2392	65.74	7.68	43.17	79.61
<i>FDI</i>	2216	3.08	4.34	-37.15	55.07
<i>CP</i>	2747	41.14	22.72	11.50	59.60
<i>POP</i>	2747	7.77	5.31	1.16	15.60
<i>RD</i>	707	0.42	0.36	0.0054	2.19
<i>TO</i>	2307	73.28	36.26	0.17	274.97

Table 2.
Correlation

Notes: This table reports pairwise correlation coefficient between variables considered in this study. All variables are defined in Table 1 The "ln" before a variable notation denotes that variable is taken in its natural logarithm form.

	<i>lnRGDP</i>	<i>lnRS (WGI)</i>	<i>lnRS (TI)</i>	<i>lnDEMO</i>	<i>lnPD</i>	<i>lnHC</i>	<i>lnFDI</i>	<i>lnCP</i>	<i>lnPOP</i>	<i>lnRD</i>	<i>lnTO</i>
<i>lnRGDP</i>	1.00										
<i>lnRS (WGI)</i>	-0.16	1.00	-								
<i>lnRS (TI)</i>	-0.18	-	1.00								
<i>lnDEMO</i>	0.05	0.16	0.39	1.00							
<i>lnPD</i>	-0.009	0.14	0.28	0.29	1.00						
<i>lnHC</i>	0.21	-0.40	0.19	-0.13	-0.13	1.00					
<i>lnFDI</i>	-0.18	-0.17	-0.01	-0.16	-0.18	0.17	1.00				
<i>lnCP</i>	0.13	-0.37	0.19	-0.12	-0.01	0.72	0.16	1.00			
<i>lnPOP</i>	0.16	-0.47	0.18	-0.14	-0.04	0.72	0.18	0.97	1.00		
<i>lnRD</i>	0.47	-0.08	0.32	0.03	0.22	0.04	-0.02	0.10	0.11	1.00	
<i>lnTO</i>	-0.49	-0.05	0.17	-0.19	-0.17	-0.07	0.15	0.11	0.11	0.007	1.00

IV. EMPIRICAL FINDINGS

Table 3 reports results obtained from estimating Equation (6) using a GMM model. Models 1 and 2 represent the GMM two-step system and the GMM two-step system robust, respectively, while Models 3 and 4 are meant for the robustness check. The

second order autocorrelation [AR(2)] coefficients indicate that there is no evidence of statistically significant second order autocorrelation. Finally, the coefficient of the lagged dependent variable was found to be statistically significant at the one percent significance level which indicates that the model is dynamic in nature. Both, Sargan and Hansen test for Models 1, 2, 3, and 4 failed to reject the null hypothesis, which indicates that the overidentifying restriction are valid.

Besides, Table 3 presents the results and robustness check for the analysis of how rent-seeking activities affect economic growth in MICs. This study investigates the rent-seeking's impact on economic growth using different measures of rentseeking in an extension of the proxy variables from the World Governance Indicator (WGI). Moreover, system GMM estimator will be used for robustness checks while control variables are the same. In Table 3, Model 1 and Model 2 show the results for System GMM Two-step and Two-step Robust respectively for rentseeking's proxy obtained from WGI; while Model 3 and Model 4 are the results of robustness check for System GMM Two-step and Two-step Robust respectively for rent-seeking's proxy under Transparency International (TI). The individual results obtained using the 2 different proxies of rent-seeking, reinforce each other in which rent-seeking negatively affects economic growth in MICs.

The negative sign of rent-seeking coefficient in Model 1, as expected, suggest the existence of a negative relationship between rent-seeking activities and economic growth. Additionally, it can be concluded that rent-seeking has a long-term negative impact on economic growth. More specifically, one percent increase in rent-seeking activities reduces economic growth by 0.172 percent. Our robustness check results based on Model 3 where we use the corruption perception index (obtained from different source, namely the Transparency International) are also consistent with our prior findings. Overall, our findings are also consistent with prior literature, see for instance, Paul (2010), Adenike (2013), Dridi (2013), and Farooq *et al.* (2013).

Based on the existing literature, corruption reduces economic growth via decreasing the competence of infrastructure and public investment (see Tanzi and Davoodi, 1998). Thus, this will generate lower productivity in the country.

The sand-in-the-wheels hypothesis in the MICs context is further evidenced in the study of Narayan and Bui (2021) who documented a negative relationship between corruption and economic growth. The authors also found that perception of corruption in Vietnam itself and its middle-income trading partners is more important and robust in impacting long-term trade flows, compared to the one of its high-income trading partners. The rationale behind this is that MICs, unlike HICs, are possessing relatively low endowment, both in terms of funds and expertise, making them less capable to overcome a corrupt and inefficient bureaucracy effectively and to seek quick turnarounds of their import contracts. In short, due to the feature of more disadvantaged by a corrupt system, MICs would have larger adverse effect of corruption on economic growth.

While a negative relationship between rent-seeking and economic growth is found in the case of MICs, it is also applicable in the context of LICs (Wong, Chen and Yiew, 2021; Saha and Ali, 2017) in which a high level of corruption creates a big problem. However, if these countries (including some of the middle eastern and North African (MENA) countries), characterized by diverse ethnic groups as

well as instable politics, is given a chance to have higher political freedom and minimum ethnic tension, corruption could be reduced, hence promoting economic development (Saha and Ali, 2017).

On the other hand, the results based on Model 1 indicates a positive relationship between *PD* and economic growth. We further note that one percent increase in *PD* resulted in a 0.012 percent increase in economic growth. However, the results obtained from Model 3 are found to be statistically insignificant. These results support the findings of Saifuddin (2016) who examined the relationship between *PD* and economic growth by using the investment model and growth model and documented that *PD* is positively related to both investment and economic growth. Hence, *PD* has an indirect positive effect on economic growth through the positive influence on investment instead of crowding out the effect of investment.

Education is widely known as the main ingredient of human capital, which in turn, is the source of economic growth. The results obtained from Model 1 shows a positive and statistically significant impact of *HC* on economic growth in MICs. Our robustness check results (based on Model 3) are consistent with our main findings. Additionally, we have also noted that a one percent increase in *HC* will lead to a 1.78 percent increase in economic growth. Based on the endogenous growth theory, *HC* is the key component of economic development that leads to higher growth rate (Lucas, 1988; Romer, 1990). Majority of the studies reviewed support that *HC* positively influent economic growth, employability of the person, behavior of society to facilitate a gracious social, as well as the political and economic environment that encourage domestic and foreign investment to the nation. Hence, higher educated workforce provides more monetary rewards and stable employment foreground, which in turn improve the living standard of the citizens (Fernandez and Mauro, 2000; Gylfason and Zoega, 2003; Abbas and Peck, 2008; Hassan and Ahmed, 2011).

In addition, the results for *FDI* showed a positive effect on economic growth. Additionally, a one percent increase in *FDI* leads to an increase of 0.036 percent in economic growth (see Model 3). However, the *FDI* is found to be statistically insignificant in the case of Model 1. Our findings are consistent with prior literature (see for example, Baharumshah and Thanoon, 2006; Upadhyaya *et al.*, 2007; Lechman and Kaur, 2015). According to the prior literature, *FDI* may stimulate economic growth through the channel of technological diffusion, creating job opportunity, and increasing capital (Borensztein *et al.*, 1998; De Gregorio, 2003; De Mello, 1997). Thus, this study supports the *FDI*-led growth hypothesis.

Additionally, we found that *CP* has a positive and statistically significant effect on economic growth. We have also noted that one percent rise in *CP* will lead to a 1.04 percent increase in economic growth (see Model 1). The robustness check based on Model 3 also provides similar findings. This outcome backs up Solow's (1957) theory which states that capital accumulation has a considerable impact on the level of productivity. In accordance with the present results, previous studies have interpreted that to have a higher economic growth pattern, government plays a vital role in enhancing capital (Chen, 2006). Besides, the study from Ahlerup, Olsson and Yanagizawa (2009) which analyzed the effects of capital stock in Canada and Nigeria demonstrate that in a weakly institutionalized economy like Nigeria, a rise in capital stock has significantly increase the growth rate in the

nation and the percentage growth in a Nigeria is greater than the growth rate obtained in Canada.

Furthermore, we find that POP has a positive effect on economic growth irrespective of models used. We have also noted that a one percent increase in POP will increase economic growth by a 3.19 percent. According to Becker, Glaeser and Murphy (1999), compared to the traditional diminishing marginal return in intensive use of land and other natural resources, the bigger population inspires greater specialization and increases investment in human capital. Hence, the effect of the latter on economic growth is stronger than the effects of the former (diminishing returns in resources-constrained sectors). These findings are consistent with earlier studies (see Kuznet, 1967; Kelley and McGreevey, 1994; Kelley 1998).

Additionally, we also document that *TO* has a positive and statistically significant effect on economic growth. We found that a one percent increase in *TO* will increase economic growth by 0.023 percent. Once again, our results are consistent with previous findings. *TO* plays a vital role in stimulating economic growth, the superiority of outward-oriented policy and the increases of foreign reserves owing to increased exports are the effects of *TO* which led to an expansion of market and further increase in productivity in the host country's economy (Keho, 2017; Çevik *et al.*, 2019; Intisar *et al.*, 2020).

Table 3.
The Impact of Rent-seeking Activities on Economic Growth

Notes: This table reports results obtained from estimating Equation (6). The corruption index has been multiplied by -1 so that a higher value of the index indicates higher level of rent-seeking. Figures reported in parentheses (.) are *t*-statistics. ***, ** and * indicate statistically significant at the 1%, 5%, and 10% level, respectively.

	System GMM	System GMM	System GMM	System GMM
	Two-step Model 1	Two-step Robust Model 2	Two-step Model 3	Two-step Robust Model 4
<i>lnRGDP_{it-1}</i>	1.015*** (192.35)	1.015*** (87.49)	1.006*** (80.77)	1.006*** (95.03)
<i>lnRS (WGI)</i>	-0.172*** (-4.96)	-0.172** (-1.98)		
<i>lnRS (TI)</i>			-0.082** (-1.65)	-0.082** (-1.65)
<i>lnDemo</i>	0.0009 (0.28)	0.0009 (0.14)	0.029 (0.91)	0.029 (1.18)
<i>lnPD</i>	0.012*** (4.18)	0.012 (4.18)	-0.013 (-0.70)	-0.013 (-0.37)
<i>lnHC</i>	1.780*** (4.25)	1.780** (1.97)	8.030*** (2.79)	8.030* (1.84)
<i>lnFDI</i>	-0.002 (-1.40)	-0.002 (-0.32)	0.036*** (4.52)	0.036** (2.25)
<i>lnCP</i>	1.036*** (5.15)	1.036** (2.01)	6.683*** (2.81)	6.683* (1.83)

Table 3.
The Impact of Rent-seeking Activities on Economic Growth (Continued)

	System GMM	System GMM	System GMM	System GMM
	Two-step Model 1	Two-step Robust Model 2	Two-step Model 3	Two-step Robust Model 4
<i>lnPOP</i>	3.188*** (7.60)	3.188*** (3.53)	0.029*** (4.67)	0.029*** (2.90)
<i>lnRD</i>	-0.004 (-0.75)	-0.004 (-0.29)	-0.010 (-0.55)	-0.010 (-0.31)
<i>lnTO</i>	0.023* (1.88)	0.023* (0.79)	0.005 (0.22)	0.005 (0.09)
<i>CONS</i>	-4.454*** (-2.52)	-4.454 (-0.98)	66.62** (2.78)	66.62* (1.83)
<i>AR(1)</i>	-1.80* (-1.80)	-1.73* (-1.73)	-2.11** (-2.11)	-2.18** (-2.18)
<i>AR(2)</i>	-0.21 (-0.21)	-0.12 (-0.12)	-1.19 (-1.19)	1.34 (1.34)
<i>Sargan</i>	29.17	29.17	20.29	20.29
<i>Hansen</i>	11.07	11.07	7.63	7.63

V. CONCLUSION

The issue of rent-seeking is prevalent and has attracted international attention, along with the middle-income trap that has seen most of the middle-income nations fail to reach high-income status. These issues have attracted the attention of various policymakers and researchers around the world. One of the most frequently asked questions is whether rent-seeking behaviours have a detrimental impact on growth.

The main results reveal that the impact of rent-seeking on economic growth is statistically significant and negative for all MICs. Overall, our findings corroborate the traditional notion that rent-seeking is a barrier to economic progress, particularly for MICs, meaning that efforts to maintain and uphold institutional quality, particularly in developing nations, are critical in moving them from MIC to HIC status. In other words, rent-seeking practices should be properly and efficiently curtailed in MICs. In this case, extensive implementation of anti-corruption policies can be the means to promote rapid and sustainable economic growth especially in the MICs. However, it is also important to note that one of the limitation of our study is the failure to comprehensively distinguish between rent-seeking and corruption. According to Lambsdorff (2002), corruption is less harmful since rent-seeking encompasses the wastage of resources in the competition for preferential treatment i.e. corruption. In other words, corruption involves a narrower range of interest than competitive lobbying (rent-seeking). This limitation opens an extended scope (such as comparing the individual effects of corruption and rent-seeking respectively) of study for future researchers on this subject matter.

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