Correlation Analysis Between Production Level, National Income, Investment, Unemployment and Poverty in Indonesia

by Andi Sesu

Submission date: 19-May-2020 06:50PM (UTC+0700)
Submission ID: 1327686894
File name: PR200922.pdf (256.61K)
Word count: 4313
Character count: 23876

International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 03, 2020
ISSN: 1475-7192

Correlation Analysis Between Production Level, National Income, Investment, Unemployment and Poverty in Indonesia

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Abstract--*Economy development in Indonesia is quite prospective, especially on four variables of both macro and micro economy, such as production level, national income, investment since 2004 until 2018 can be categorized experiencing rapid growth and the level of unemployment and poverty is getting lower.However, collectively, coefficient correlation r = 0,961 demonstrates that the influence of rice, corn and soybeans production level are very strong on national income level and coefficient determination R2 = 0,924 or 92,4 % demonstrates that the amount of contribution of influence on rice, corn, and soybeans production level collectively in 92,4% upon national income level, while it gives negative influence on unemployment level which means that more increase in national income level 2,765, it makes lower unemployment level, while investment level is still give positive influence on unemployment level which means unable to influence the level of decrease upon unemployment, however, collectively, the value of coefficient correlation r = 0,940 demonstrate that the influence of national income and investment level are collectively very strong and coefficient determination is R^2 = 8,884 or 88,4 % which means the contribution of influence on national income and investment level are collectively in 88,4% and level of unemployment gives positive influence on poverty level that means more increase in unemployment also more increase in poverty that is if unemployment increase one score, poverty is also increase in 2,717 on Constanta 83266, while coefficient correlation r = 0,949 meaning the influence of unemployment level is very strong on poverty and determination in R^2 = 0,901 or 90,1 % demonstrate that the amount of contribution of the influence on unemployment level in 90,1%.*

Key Words--*Production Level, National Income, Investment, Unemployment and Poverty.*

I. INTRODUCTION

Trading development on three main staples such as rice, corn and soybean in Indonesia is quite prospective, however it still experience frequent shortage or unable to fulfill domestic needs and also unable to export based on people and government's expectation, on contrary, sometimes importing goods in order to comply domestic needs even though Indonesia is known throughout the world as a fertile and rich country in natural resources. The growth of development, especially in Indonesia's economy from old to new order until now is quite prospective compare to other countries in the world. However, current problems in Indonesia such as production level is unable to meet domestic needs so that makes high levels in import, unemployment and also poverty in Indonesia from 2004 until 2018 is relatively decreased, still in high level. Therefore, assessment and improvement are extremely needed to

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DOI: 10.37200/IJPR/V24I3/PR200922
Received: 19 Jan 2020 | Revised: 06 Feb 2020 | Accepted: 12 Feb 2020

focus on economy development to reduce and eliminate problems. Data of unemployment and poverty in Indonesia for the last 4 years from 2015 to 2018 shown decrease in amount. The decrease in poverty and unemployment level can be seen on the following table:

Table 1 Poverty and Unemployment Rate in Indonesia from 2015 to 2018

Years	Percentage (%)	
	Unemployment Rate	**Poverty Rate**
2015	6.18	11.13
2016	5.61	10.64
2017	5.50	10.12
2018	5.13	9.84

Source: Ministry of Finance 2018, Data of Central Statistic Bureau.

The decreased of unemployment and poverty level is occurred, however, still high and need a reduction strategy on variables of both macro and micro economy that reduces level of poverty and unemployment such as production enhancement, national income, improvement in investment and so forth. The increase in national income is influencing investment growth which gives considerable impact on the growth of employment opportunity and opening chances to get jobs that able to influence the decrease in poverty and unemployment level. Therefore, researcher is interested to investigate the correlation between variables of production, national income, investment, unemployment and poverty level in Indonesia. Investment in Indonesia offers high development potency because Indonesia is very rich with natural and human resource. However, human resource in Indonesia needs to be improved on its quality whether the competency and also the quality of character. In addition, Indonesia's natural resource urgently needs collective spirits to preserve and control its availability by individuals, society, corporations and also government in order to develop better economy in the future so that the level of poverty and unemployment can be reduced and also eliminated for good so that there will be no poverty and unemployment in Indonesia. Currently, the poverty and unemployment level in Indonesia is significantly decreased; however, compare to other countries in the world, Indonesia still has high level in terms of unemployment and poverty.

II. LIBRARY STUDY

Production

In production, producers demand higher quantity and quality toward their products. Production or economy process to change production factor (input) to be production result (output) or can be defined that production is a sequence process including all activities that can add and create value from goods and service. Production utilizes resources whether natural or human to create commodity or goods. The quantity and productivity of production level can be achieved if production factors are fulfilled based on the needs. Production theory states that the relationship nature between production levels will be achieved by the amount of utilized production factors. There are two production factors; variable production and permanent production. Variable production factor is a production factor depends on output. The higher level in production, the more use of variable production factor utilized including

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workforce. According to Indonesia's Science and Technology Journal, Sunartono, 2008 says that the creation of workforce is conducted by flourishing businesses through various policies such as; production, monetary, fiscal, distribution, prices and wages, export – import and the workforce itself. According to Journal (F. Wahyu), demonstrates that there is a strong correlation between grass production level and income.

National Income

The success of economy in one country is assessed by national income, national product, level of employment opportunity, price level and the position of overseas balance of payments. National income is the amount of income accepted by all family's households (FH) in a country from services of production factors owned by one country in a period usually in one year. With high income, someone able to invest stocks in a company and the money will be utilized by the company to build and develop its business and also to pay tax because it is revenue for country. In simple way, the impact of investment upon economy in one country is reflected from its national income and its investment has positive correlation with GDP. In general, it can be stated that if investment increase, GDP tends to increase too, or in contrary, if investment decrease, GDP tends to decrease too.

Investment

Investment expenditures include all domestic expenses conducted by private sector to build new buildings, new machines with its spare parts and the alteration of amount of various supplies in company. The quality of investment in the future must always in first priority. The advantage and profit from the entered investment is highly influenced by its quality in order to push the growth of real sectors that have chain reaction toward high employment absorption on various sectors such as; foods, agriculture, plantation and fishery. According to Journal from Suwarno, Agus (2009) demonstrates that there is reciprocal relationship between (I) Investment and Employment Opportunity (L) if the slow time is long.

Unemployment

Economy in one country is categorized in good condition if one of the factors that is the level of unemployment is low. Unemployment is a macro economy's problem that directly influences human and the hardest problem of all. To most of the people, losing jobs mean decrease in living standard and psychological pressure. Unemployment are the number of people classified in workforce (age 15 to 65) who don't have a job. Wahyu Aditama Putra (2018) shown that partial investment gives significant negative impact on employment, that means higher investment lowering unemployment.

Poverty

Unemployment and poverty are scourge in many countries, including super power country like the United States of America (USA). Every nation and country in the world wishes that poverty is getting lower and even permanently eliminated. Government so far always pays attention to the development program upon these two problems. The result is not yet satisfies all parties although existing social indicators demonstrate repairmen in reducing unemployment and poverty's level. Poverty is a condition or someone's inability to fulfil primary needs

DOI: 10.37200/IJPR/V24I3/PR200922
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such as foods, water, clothes, house, education and health. In other definition, poverty is a situation where someone is unable to meet his/her basic needs. Subsequently, there are secondary and tertiary needs such as gadgets, vehicles, sport cars, new edition of i-phone. Poverty can be caused by the scarce of tools of basic needs or no access to education and employment. According to a journal from Try Reza Putra (2017) demonstrates that open unemployment and poverty have two ways of causality relationship, seen that responds of open unemployment to poverty is negative, while respond of poverty to open unemployment is varied.

III. RESEARCH METHODOLOGY

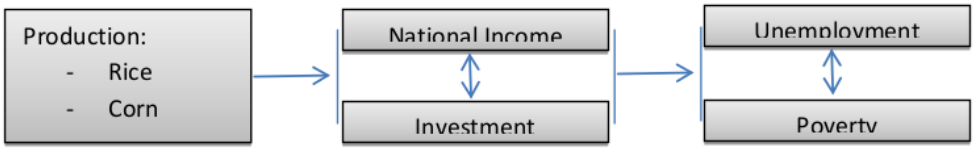
Time and Place of Research

In this research, the utilized data is data on levels of production, national income, investment, unemployment, and poverty in Indonesia. All data is placed in CSB in Jakarta, then, this research is conducted in the head office of Central Statistic Bureau Jakarta and its related agency office that is the trading and industry. The research is conducted on January 2019 until May 2019.

Population and Research Sample

This research wants to expose that by the increase levels in production, national income, and investment in Indonesia can decrease levels of unemployment and poverty in Indonesia, then it is considered that population data of whole data in Indonesia has correlation with those variables. Therefore, researcher determine research population of all data in national level related to research problems in CSB Indonesia office and in related agency. Because of researcher's limitation in time and energy, then research sample is limited to data from the last 15 years start from 2004 to 2018, data about levels of production, national income, investment, unemployment and poverty in Indonesia. **Data Analysis Method**

The framework of thought in analysis that is production level influencing national income and investment, while national income has causality relationship with investment and influencing unemployment and poverty level can be seen on the following diagram:



The framework of analysis that will be utilized is descriptive statistic able to describe general description on research and inferential statistic to test hypothesis that is distribution table of frequency in grouping, histogram graphic and polygon frequency, mean, varian, median, modus, standard deviation, workforce formula, poverty level formula, double and simple linear regressions

1. Descriptive Statistic: tableof distribution and graphic

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2. Simple and double linear regression model: $Y = a_0 + a_1 x_1 + a_2 x_2 + \ldots\ldots + a_n x_n + e$, where a_0 = Constanta, a_1, a_2,.. a_n = coefficient regression and $x_1, x_2, \ldots\ldots x_n$ = independent variable, y = dependent variable, e = error
3. Coefficient correlation and coefficient determination
4. Counting the amount unemployment rate: (A.WF – A.HJ) x 100 %, where
   A.WF = Amount of Work Force, A.HJ= Amount Have Jobs
5. Poverty Line Formula : GK = GKM + GKNM
   PL = Poverty Line
   PLF = Poverty Line Food
   PLNF =Poverty Line Non Food

- Percentage Formula of Poor Population:

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z - y_i}{z}\right)^\alpha$$

Where: $\alpha = 0$

z = poverty line

y_i = average of expenses per-capita per-month of population below poverty line

(I = 1, 2, 3, ……,q) , $y_i < z$

q = amount of population below poverty line

n = the amount of population

IV. DISCUSSION

Data of production level of rice, corn, soybeans, national income, investment, unemployment and poverty in Indonesia from 2004 until 2018 will be analyzed its correlation between those variables by utilizing simple linear and double linear regressions.

Table-1 Data of Production Level of Rice, Corn, Soybeans and Indonesia's National Income

Years	Rice (Ton)(x_1)	Corn (Ton)(x_2)	Soybeans (Ton)(x_3)	National Income (Billions Rp) (y)
2004	30410000	18840000	318929	403400
2005	30440000	12369482	335106	495200
2006	30620000	11610000	320205	638000
2007	33220000	13290000	252027	707800
2008	33060000	16320000	277281	981600
2009	37430000	17630000	974001	848800
2010	38640000	18330000	907000	995300

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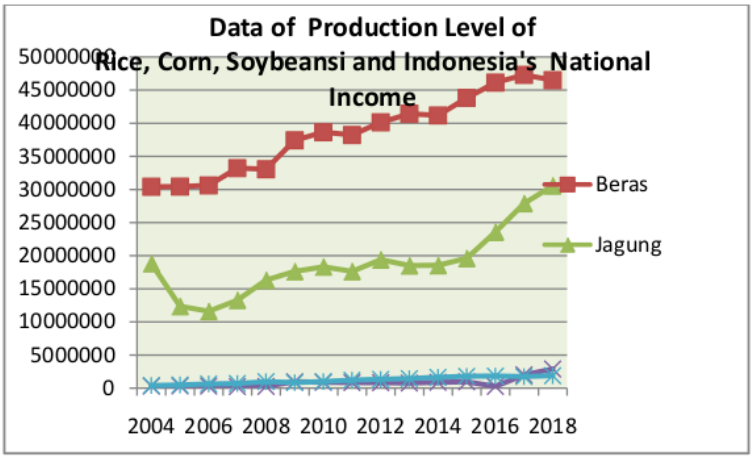
2011	38220000	17640000	851000	1210600
2012	40140000	19390000	843000	1338100
2013	41430000	18510000	780000	1438900
2014	41180000	18550000	892001	1635400
2015	43820000	19610000	963000	1793600
2016	46130000	23580000	274317	1822100
2017	47300000	27900000	2009160	1750300
2018	46500000	30560000	2900000	1894700

Source of data: CSB Jakarta

Data from table above can be drawn its graphic as follows:



Data from table and graphic above demonstrate that rice production from 2004 to 2018 is more increase, corn production from 2006 to 2018 is also more increasing, soybeans production from 2004 to 2018 in average growth and national income also from 2004 to 2008 is also more increase. From data analysis outcome, obtained regression equation $Y = -2129 + 0{,}092\ X_1 - 0{,}012\ X_2 - 0{,}012\ X_3$, X_1 = rice X_2 = Corn X_3 = Soybeans and Y = National Income, regression demonstrate that rice production level gives positive impact on national income which means every increase one score in rice production level, also more increase in national income of 0,092 in Constanta -2129, while corn and soybean production level send negative impact on national income which means that corn and soybean production unable to influence the increase of national income, however, collectively coefficient correlation r = 0.961 demonstrate that the influence of rice production levels of rice, corn and soybeans collectively very strong on national income and coefficient determination $R^2 = 0{,}924$ or 92,4 % demonstrate that the amount of contribution of impact on production levels of rice, corn, and soybeans collectively 92,4% upon national income level because source of national income from all factors owned by a country such as level of production, tax, export, investment

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and so forth. Rice production level can increase national income because the employment of Indonesians in provinces and counties mostly are farmers. They have to do paddy farming because the main staple is rice and also it becomes basic material for home and big industries. While, corn and soybeans are season plants and only become basic material for local and giant industries.

Table 2 Data of Level of National Income, Investment and Unemployment in Indonesia

Years	**National Income (Billions Rp) ($x_{1)}$**	**Investment (BillionsRp)($x_{2)}$**	**Unemployment (people) ($y_{)}$**
2004	403400	37140.4	10250000
2005	495200	50577.4	11200000
2006	638000	162767.2	10550000
2007	707800	34878.7	10010000
2008	981600	20363.4	9390000
2009	848800	37799.9	8960000
2010	995300	60626.3	8320000
2011	1210600	76000.7	8100000
2012	1338100	92182,0	7300000
2013	1438900	128150.6	7400000
2014	1635400	156126.3	7200000
2015	1793600	179465.9	7600000
2016	1822100	216238.1	7000000
2017	1750300	692800	6900000
2018	1894700	7213000	6870000

Source of data: CSB Jakarta

Data from table above can be drawn its graphic as follows:

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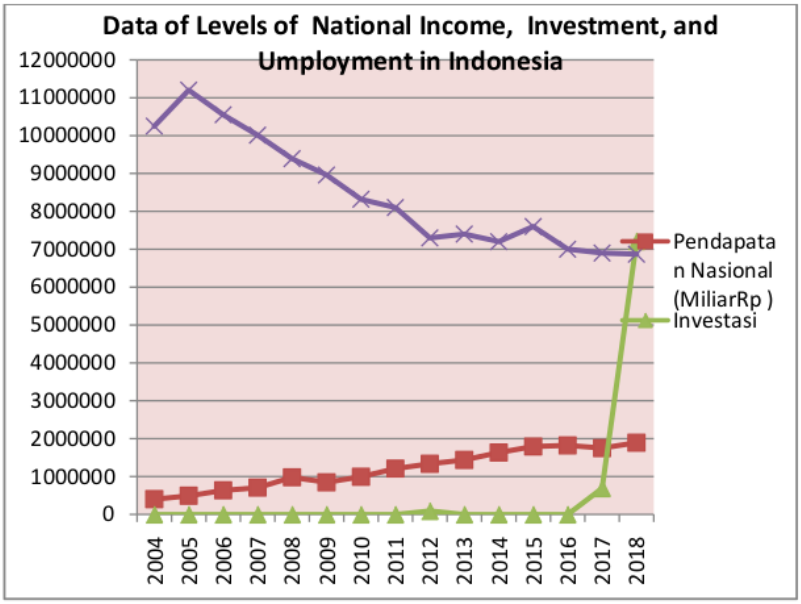

Data from table and graphic demonstrate that from 2004 to 2016 can be stated as flat and from 2016 to 2018 has very high increase, national income from 2004 to 2018 more increase, while unemployment level from 2006 to 2018 is more decrease. From analysis outcome, obtained regression equation Y = 11754 – 2,765 X_1 + 0,038 X_2, X_1 = National Income, X_2 = Investment and Y = Unemployment, demonstrate that national income level gives negative impact on unemployment level which means every increase in national income level 2,765 more decrease in unemployment level, while investment level still give positive impact on unemployment level which means unable to influence the decrease in unemployment level, however, collectively the value of coefficient correlation r = 0,940 demonstrate that the influence of levels of national income and investment collectively very strong and coefficient determination R^2 = 8,884 or 88,4 % which means contribution of influence on levels of national income and investment collectively 88,4%. Data given from the table shown that national income and investment are quite high compare to other counties in the world and level of unemployment is also decrease, however, the unemployment is still high caused by high fertility rate that push growth in workforce. Other factor is the big number of foreign investments that employ their own workforce influencing the displacement of local workforce become unemployment. The effect of unemployment can be classified into poverty because still lot of employees in Indonesia who received minimum wages is just enough to fulfil basic needs and have no spare to save and when they got fired or unemployment they automatically become poor.

Table 3 Data of Unemployment and Poverty Level in Indonesia

Years	**Unemployment (people) ($x_)$**	**Poverty (people) ($Y_)$**
2004	10250000	36150000
2005	11200000	35100000

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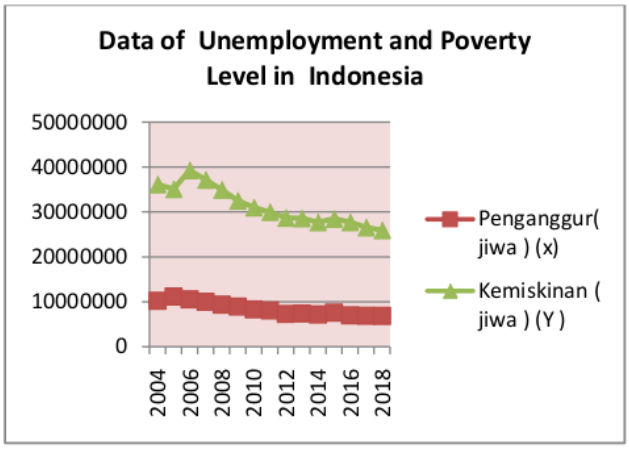
2006	10550000	39300000
2007	10010000	37170000
2008	9390000	34960000
2009	8960000	32530000
2010	8320000	31020000
2011	8100000	30010000
2012	7300000	28710000
2013	7400000	28600000
2014	7200000	27730000
2015	7600000	28510000
2016	7000000	27760000
2017	6900000	26580000
2018	6870000	25950000

Source of data: CSB Jakarta

Data from table above can be drawn it's graphic as follows:



Data taken from the above table and graphic exposed that from 2006 to 2018, the rate of unemployment and poverty is experiencing a decrease in big number. From analysis outcome, obtained regression equation Y = 83266 + 2,717 X , where X = unemployment, Y = poverty shown that unemployment gives positive impact on poverty level which means more increase in unemployment makes more increase in poverty that is if unemployment increases one score, poverty also increases 2,717 on Constanta 83266, while coefficient correlation r = 0,949 which means the impact of unemployment level is very strong on poverty level and coefficient determination R^2 = 0,901 or 90,1 % demonstrate that the amount of contribution on the impact of unemployment level is 90,1 or 90,1% shown that the amount of contribution on the impact of unemployment level is 90,1% on poverty level. From interview outcome toward employees who said that if they got fired or terminated from work, they automatically

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categorized as the group of poor. They directly unable to fulfil basic needs because during their work, they have no spare money to save because their minimum wages are not enough to meet basic needs so that not enough money to be saved. Population data shown that there is no balance between work opportunity and workforce and it causing unemployment rate is still high and as a result also makes poverty high.

V. CONCLUSION AND SUGGESTIONS

Conclusion

From the analysis outcome of double regression shown that rice production level gives positive impact on national income which means that every increase one score in rice production level also increases in national income 0,092 on Constanta 2129, while level of corn and soybean production gives negative influence on national income level which means that corn and soybean production are unable to influence the increase of national income, but collectively coefficient correlation r = 0,961 shown that the influence of production level of rice, corn and soybeans collectively is very strong on national income level and coefficient determination R^2 = 0,924 or 92,4 % shown that the amount of contribution of influence on production level of rice, corn and soybeans collectively 92,4% on national income, while national income level gives negative impact toward unemployment which means every increase in national income 2,765 makes more decrease on unemployment level, while investment level still send positive influence toward unemployment which means unable to influence the decrease of unemployment level, however, collectively the value of coefficient correlation r = 0,940 shown that the influence of levels of national income and investment collectively is very strong and coefficient determination R^2 = 8,884 or 88,4 % which means contribution of influence of levels national income and investment collectively 88,4% and unemployment level gives positive influence on poverty level which means more increase in unemployment also more increase in poverty that is if unemployment increase one score, poverty also increases 2,717 on Constanta 83266, while coefficient correlation r = 0,949 which means the influence of unemployment level is very strong on poverty level and coefficient determination R^2 = 0,901 or 90,1 % shown that the amount of contribution of influence of unemployment level is 90,1%.

Suggestions

1. Suggestion to government to minimize import on rice, and eliminate it immediately beacsue Indonesia has massive rice field and the level of fertile land is very good and has huge potency to improve its rice production.
2. Government's policy is extremely needed because problems that commonly encountered by farmers are harvest loss because of flood or drought. Regions that hit by flood can be built canal of water disposal and region that frequently experienced harvest loss can be built dam or irrigation by the government so that the paddy production from farmers has more increase or better so that Indonesia becomes one of world's rice exporter.
3. Corn and soybean farmers can be given workshops and community in order to be continuous corn and soybean farmers' guidance annually in all over provinces or counties in Indonesia because lands in Indonesia are very compatible with corns and soybeans throughout Indonesia.
4. It is expected to people, individual, organizations and government to design strategy to decrease the levels of unemployment and poverty, for example, people have more awareness in efforts to decrease the fertility rates or

DOI: 10.37200/IJPR/V24I3/PR200922
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birth rates by family planning program. Government also has policy to motivate farmers by limiting import and increasing export on those three commodities and its policy to support farmers by providing fertilizers, technology, low tax, and so forth.

5. Government is encouraged to regulate infrastructure investment on areas that difficult reach by transportation during rainy seasons. There are several counties and villages in Indonesia experienced successful harvest and sometimes unsuccessful harvest that make big loss to farmers and their got broken products because they don't sale those agricultural products to the cities, especially products that can't last for long.
6. It is encouraged to create entrepreneurship trainings to produce foods from rice, corn and soybeans for both home industries and the big ones that create opportunity to export their products and creating employment opportunity that can reduce levels of unemployment and poverty in Indonesia.

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DOI: 10.37200/IJPR/V24I3/PR200922
Received: 19 Jan 2020 | Revised: 06 Feb 2020 | Accepted: 12 Feb 2020

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Exploring the Nexus between Foreign Aid, Corruption and Economic Growth in ASEAN Countries

by Andi Sesu

Submission date: 19-May-2020 06:48PM (UTC+0700)
Submission ID: 1327686272
File name: 11204_Yakub_2020_E_R_sesu.pdf (535.54K)
Word count: 8340
Character count: 44187

International Journal of Innovation, Creativity and Change. www.ijicc.net
Volume 11, Issue 2, 2020

Exploring the Nexus between Foreign Aid, Corruption and Economic Growth in ASEAN Countries

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The prime objective of the research is to explore the nexus between foreign aid, corruption and economic growth in ASEAN countries. The present research begins by providing background information about corruption as well as its current situation in ASEAN. Afterwards, the previous models used in previous research will be explored, followed by the discussion of data and estimation techniques. Moreover, the next section involves a discussion about the theoretical foundation of corruption models, and present estimation equations, data sources and mathematical derivations. In addition, the current study may also facilitate in spreading awareness regarding corruption and possible policy options for the policy makers to combat corruption in ASEAN. The study has employed a robust statistical analysis on the data covering period from 1985 to 2018. The fixed effect and Granger causality test are used to examine the relationship between foreign aid, corruption and economic growth. Finally, this paper aims to present a summary of the obtained empirical findings, policy implications, concluding remarks and future research direction. The study aims to particularly emphasise corruption's indirect and direct effects on government expenditure, capital accumulation, economic growth and foreign aid.

Key words: *Corruption, economic growth, Foreign Aid.*

Introduction

Corruption is a strong constraint and a serious threat to a country's economic development. Corruption tends to decline the efficiency of private and public sectors, allowing people to presume power not through ability rather through patronage. Those productive resources which generally obtain greater returns are kept idle or used for less productive businesses. The literature of the impact of corruption lacks empirical and theoretical support, therefore, current literature tries to incorporate and investigate the potential effects of corruption on the national output, by influencing it's impact on economic growth and production function. Till now, several studies (Ali, Khan, Sohail, & Puah, 2019; Leung, 2018; Shan, Le, Chan, & Hu, 2020; Сучок, 2016) have analysed the hypothesised impact of corruption only separately, however, no research examined the potential impact of corruption at the aggregate level. Thus, a neo-classical economic growth model was developed in this study which tried to capture direct and indirect corruption and human capital accumulation effects on economic growth (Kodongo & Ojah, 2016). This model was empirically tested by employing time series data for analysing the corruptive behaviour in ASEAN.

During a preliminary analysis, it was found that corruption is a complex phenomenon, which is largely recognised as a consequence of various embedded issues arising from institutional incentives, governance, and policy distortion. According to the economics' literature, corruption is considered as a growth inhibitive. However, a view has been put forward in 1960 that corruption may improve the process of economic growth. For instance, Huang (2016) argued that political regimes and bureaucrats wish to be part of the political offices and they conceive politics with the same thinking and become economically inefficient. In another study, corruption is suggested as a modernisation consequence, asserting that corruption acts as a diversion from inefficient and unproductive policies. This pro-efficient corruption argument has been disproved by Mbaku (2019), suggesting that since bribery is illegal, bureaucrats try to regulate the bidding process only for the ones they trust. Trust does not serve as a proxy variable for efficiency; therefore, the highest bidder will not necessarily be the most efficient one. A similar conclusion was obtained by Lučić, Radišić, and Dobromirov (2016) who also suggested that corruption works under the theory of second best.

Contrarily, the existing theoretical and empirical research (Ali et al., 2019; Leung, 2018; Shan et al., 2020; Сучок, 2016) has shown that the problem of corruption has considerably grown in the past few years. The corruption became part of the economics literature under the microeconomic perspective. A study Auerbach and Azariadis (2015) attempted to analyse the effects of rent-seeking on the economic growth and demonstrated the potential of three equilibria in the economy. Ogun (2018) employed a three-sector approach to develop a production model indicating two-stable equilibria, where the first one is established under

uncontrolled corruption and lack of honest agents. The other equilibrium is established when the economy achieves highest output without the involvement of any corrupt agents. Basu, Basu, and Cordella (2016) also reported two equilibria, where one is unstable and the other is a stable equilibrium in a corrupt economy. The researcher has fully recognised the importance of initial conditions and suggested that if the economy begins at average corruption levels then the economy will tend to move towards stable equilibrium with even higher levels of corruption, whereas, if there is low average levels of corruption, then it will return back to its honest economy. Thus, Leff's analysis only holds considering the perspective of Hall, Levendis, and Scarcioffolo (2019) who stated that corruption is a consequence of inefficient public policy. If the government's main priority is to achieve high levels of economic development then there will be uncontrolled corruption, and vice versa.

Figure 1. Corruption perception Index ASEAN (0 : least corrupt)

	Rank 2016	Rank 2017
Singapore	7	6
Brunei	41	32
Malaysia	55	62
Indonesia	90	96
Thailand	101	96
Philippines	101	111
Vietnam	113	107
Laos	123	155
Myanmar	136	130
Cambodia	156	161

The tax and tariff context was also considered, to analyse the trends of corruption. Aidt (2016) suggested that rent seeking is particularly more costly as compared to the tariff. The findings of this study suggest that for a given level of import restriction, the rent-seekers have a Pareto-inferior competition against a tariff-equivalent restriction. The findings obtained by Aidt (2016) are consistent with the findings of Hall et al. (2019) study, which have found that there is a difference between taxes and bribes, where bribing is an illegal act. However, this rent-seeking model by Aidt (2016) can only be applicable for the case of developing economies, with income inequality prevailing among non-government and government workers. Besides corruption as one type of rent-seeking, various other forms of corruption also exist. Bertrand, Betschinger, and Laamanen (2019) also tried to analyse corruption within different firms' contexts; for this purpose the study used the principal-agent model to assess the corruption's impact on development. Another noticeable fact is that majority of

microeconomic models use the corruption variable for predicting the economic development. However, these microeconomic models only consider corruption's effects without considering its larger aggregate effects on output (Iamsiraroj & Ulubaşoğlu, 2015). Thus, ignoring such potential effects may infuse priori bias in the model. Therefore, such microeconomic models could not quantify the trade-off among indirect and direct effects to prevent corruption.

Literature Review

The literature of economics is full of microeconomic and principal-agent models, but there is no such richness in macroeconomic literature. To examine the effects of corruption on the macroeconomic variables of the economy, various economic growth models were being employed in previous research (Ali et al., 2019; Leung, 2018; Shan et al., 2020; Сучок, 2016). The author also stated that corruption acts as an obstacle in achieving economic growth and also diminishes the effectiveness of investment. Another study has reported that corruption minimises the level of human capital and the share of investment. In addition, a significant negative impact of corruption on the level of investment and insignificant impact on growth has been reported, with the Luas growth model (Crescenzi, Cataldo, & Rodríguez-Pose, 2016). On the contrary, it has been argued that the intention of gaining corruption benefits can easily restrict the access to key social services. Therefore, the study concluded that corruption poses negative impacts on human development. Furthermore, the government officials feel enticed by corruption and tend to allocate less public resources to social welfare to gain exporting bribe opportunities. Agostino, Dunne, and Pieroni (2016) suggested the potential effects of corruption and mentioned that it lowers the quality of public services and infrastructure projects, resulting in the reduction in investment, economic growth and negative effects on human development.

Mazllami (2019) designed and demonstrated a Keynesian model to exhibit the negative effects of corruption on the production, employment level, consumption, government spending, money market, domestic investment and net exports of a developing country. Another study revealed a negative relation among corruption and a balanced growth path, by employing an endogenous growth model (Ugwuanyi & Ugwunta, 2017). In a balanced growth model, the level of growth declines with an increase in bribe payments. Therefore, it is presumed that the magnitude of investment reduces with the increase in corruption, resulting in the reduction of economic growth level (Haque & Kneller, 2015). Contrarily, while considering an infinite horizon growth model, the researcher presumed that entrepreneurs tend to put in more human capital resources and time to deal with bureaucratic obstacles, particularly in the presence of bureaucracy. As the longer it takes to deal with bureaucracy issues, the greater will be the bribe payments. In the view of the scholar,

requiring more time to handle government officials tends to increase the demand for higher bribe payments, thereby wasting potential human capital and time.

According to Agostino et al. (2016), corruption alters the government spending composition, discourages investment, and restricts the level of economic growth. He attempted to analyse corruption's effects on various public spending, and incorporated ethno-linguistic fractionalisation as an instrument variable (Cooray, Dzhumashev, & Schneider, 2017). A two-stage least square method was used in this study and the findings suggest that corruption reduces economic growth level by reducing the rate of investment. Although, Bertrand et al. (2019) suggested that those bureaucrats which are involved in corruption try to make investment in larger projects making bribery less easily identifiable. The empirical findings of Mauro has directed the attention towards another controversial topic. However, Mauro's work also has several shortcomings. On the other hand, Van den Berg (2016) used a neoclassical growth model and added corruption, assuming that economic growth is negatively affected by corruption. Their model suggests that government officials can decide whether they want to take bribe or not. However, the study used similar methodology as used for criminal activities in previous studies. However, the assumptions have failed to satisfy two points:

Firstly, Goedhuys, Mohnen, and Taha (2016) advocated corruption as a persistent phenomenon and the decision of whether to engage or not in corrupt activities does not solely depend on the chances of being caught. On the other hand, there is a second group which prevents individual behaviour. This suggests that the predecessor's reputation directly influenced the individual's behaviour of becoming corrupt or not. Although, all the aforementioned models must also consider the potential endogeneity bias. However, the endogeneity bias usually arises when the results of subjective surveys are used as a proxy variable for the level of corruption and which can be avoided by employing appropriate estimation techniques (Kim & Kang, 2014). The results obtained from these may seem to be less powerful because of higher sensitivity towards the corruption index and sample size employed in the data. This approach also offers some important implications that can be considered while conducting future studies by using those models which are less sensitive in terms of indexes, sample size and proxies. Furthermore, the aforementioned models separately test the effects of corruption, without considering its aggregate impact on production factors and on the long term growth implications (Webb & Martin, 2017). Thus, there is still no theoretical framework available in the existing literature which examines the corruption's potential effects on output by influencing the production function, economic growth and development. Therefore, a neoclassical economic growth model is developed in this study involving human capital accumulation and indirect and direct effects on economic growth by corruption. While developing a theoretical model for economic growth, the study also takes into account the possibility of economic growth in ASEAN to be influenced by

corruption through affecting foreign aid, investment, and government spending (Hakimi & Hamdi, 2017).

The Theoretical Model

For developing a theoretical model, the present study used Mankiw, Romer, and Weil (1992) work. The findings suggest that adding human capital into the production function has significantly improved the explanatory power of the Solow growth model. This paper is the extension of the Solow model, aiming to incorporate corruption as a government spending determinant. Hence, this study defines corruption as 'using public office power to obtain private benefits'. In order to clarify, we assume that the economy under study is a good producing economy, where output is produced by incorporating well-behaved production function having strict and positive physical capital with diminishing marginal productivity (Matar, 2016). The Inada conditions assume that for both labour and capital, the marginal productivity will reach to infinity when its value reaches to zero, and when the value reaches to infinity, the marginal productivity will be equal to zero. Thus, the functional form of Cobb-Douglas production function is as follows:

$$\boldsymbol{Y_t} = PK_t^{\alpha} HK_t^{\beta} [Gov_t(\theta) Lab_t] \ldots\ldots\ldots (1)$$

Here Y_t represents an aggregate of real income level, PK_t^{α} represents the physical capital, HC_t^{β} represents the human capital level, Lab_t represents the total number of labour employed, Gt represents government spending, and ρ shows a country's level of corruption, where $Gov_t(\theta) <$. Suppose that $0 < \alpha < 1$, $0 < \beta < 1$ and $\alpha + \beta < 1$. Such conditions confirm that for each point, the production function displays constant or diminishing returns to scale. Time (t) is taken as a continuous variable. By omitting corruption, the standard neo-classical results will be obtained, i.e. for each worker, growth rate increases by increasing the physical capital investments and decreasing capital depreciation rate, decreasing output per worker at initial level and the population growth. Thus, the equations are stated as follows:

$$\frac{dPK}{dt} = S_{PK} Y_t - \partial_{PK} PK_t \ldots\ldots\ldots\ldots (2)$$

$$\frac{dHK}{dt} = S_{HK} Y_t - \partial_{HK} HK_t \ldots\ldots\ldots\ldots (3)$$

Here, $S_{PK}, S_{HK}, \partial_{PK}$ and ∂_{HK} shows the parameters for this model, representing income shares for capital and human investment, and physical and human capital's depreciation rate. Moreover, population growth is taken to be constant over time, which is defined and determined exogenously $Lab_t = Lab_0 e^{nt}$. Whereas, the full employment assumption

suggests that 'n' also specifies the labour force growth rate($\frac{\frac{dLab}{dt}}{Lab_t} = n$). Thus, the steady state reduced equation is stated as follows:

$$\ln\left(\frac{Y_t}{Lab_t}\right) = \ln(Gov_0) + \emptyset t + [\alpha/(1-\alpha-\beta)]\ln\left[\frac{S_{PK}}{(n+\partial_{PK}+\emptyset)}\right] + [\beta/(1-\alpha-\beta]\ln\left[\frac{S_{HK}}{(n+\partial_{HK}+\emptyset)}\right] \ldots\ldots (4)$$

In the equation (4), it is revealed that this reduced equation for a steady state is an increasing function of human and physical capital savings, growth rate of initial government spending level, and government spending at output per worker. The output growth per worker can be expressed through making differentiation in terms of time, to obtain a steady state level:

$$\ln Y_t - \ln Y_0 = (1-e^{\gamma t})\{\ln(Gov_0)\ln(Gov_0) + \emptyset t - \left[\frac{\alpha+\beta}{1-\alpha-\beta}\right](\ln[n+\partial_{PK}+\emptyset] + \left[\frac{\alpha}{1-\alpha-\beta}\right]\ln(S_{PK}) + Gov_t(\theta)\} - (1-e^{\gamma t})\ln Y_0 \ldots\ldots \textbf{(5)}$$

The change in the effectiveness of government spending gives an inverse relationship of upward moving corruption with output growth per worker, although, standard neoclassical results are obtained by omitting the corruption term (see equation 5). This implies that output growth rate per worker increases by increasing the human and physical capital investments and decreasing the depreciation rate of capital, population growth and output per worker at the initial level. In an attempt of modelling corruption effects on the multifactor productivity, the present study assumed a structural form for that factor. The corruption has a non-linear effect on the economy and is bounded by a subsistent level and corrupt-free output. In an economy, all government agents will not depart from the production sector, therefore, some output is expected to be generated. Thus, to assess the relation of corruption in government spending function, we suppose that:

$$Gov_t(\theta) = \widehat{Gov_t}e^{\gamma\theta} \ldots\ldots (6)$$

Where $0 \leq \theta \leq 1$, and

$$\widehat{Gov_t} = Gov_t e^{\emptyset t} \ldots\ldots (7)$$

θ is the parameter which shows the corruption index to be used and γ represents the magnitude of corruption effects on government spending. The traditional government spending expands at the rate 'Ø' and is exogenous. Therefore, Equation (6) explains the state when there is no corruption in the economy. It also holds for $\widehat{Gov_t} = Gov_t$. Corruption influences every production function in a different way; the effects of corruption increases

when γ exhibits a higher value. Ceteris paribus, when γ=0, the corruption function equals the point of unity and maximises total output. Thus, the equations 1, 2, 3 can also be stated in an intensive form:

$$\ddot{y}_t = e^{-9} P\ddot{K}_t^{\alpha} H\ddot{K}_t^{\beta} \ldots\ldots (8)$$

$$\frac{dP\ddot{K}}{dt} = S_{PK}\ddot{y}_t - (n + \partial_{PK} + \emptyset)P\ddot{K}_t \ldots\ldots\ldots\ldots (9)$$

$$\frac{dH\ddot{K}}{dt} = S_{HK}\ddot{y}_t - (n + \partial_{PK} + \emptyset)H\ddot{K}_t \ldots\ldots\ldots\ldots (10)$$

Here, $\ddot{y}_t$=Y/L, $P\ddot{K}_t^{\alpha}$=PK/Lab, $H\ddot{K}_t^{\beta}$=HK/Lab, $\ddot{y}_t = y/y_t Gov_t$ represents each worker's output per government spending, $P\ddot{K}_t^{\alpha}$=PK/Gov_t shows human capital for each worker per government spending and $H\ddot{K}_t^{\beta}$=HK/Gov_t shows physical capital per worker per government spending. Thus, at the steady state, equation 9 and equation 10 equals to 0. Setting these equations to zero offers a three equation system with three unknowns. Thus, following are the state levels of human and physical capital:

$$P\ddot{K}_t = \left[\left(\frac{S_{PK}}{(n+\partial_{PK}+\emptyset)}\right)^{\left(\frac{1-\beta}{1-\alpha-\beta}\right)}\right] * \left[\left(\frac{S_{HK}}{(n+\partial_{HK}+\emptyset)}\right)^{\left(\frac{\beta}{1-\alpha-\beta}\right)}\right] * e^{-\emptyset t} \ldots\ldots\ldots (11)$$

$$P\ddot{K}_t = \left[\left(\frac{S_{PK}}{(n+\partial_{PK}+\emptyset)}\right)^{\left(\frac{\alpha}{1-\alpha-\beta}\right)}\right] * \left[\left(\frac{S_{HK}}{(n+\partial_{HK}+\emptyset)}\right)^{\left(\frac{1-\alpha}{1-\alpha-\beta}\right)}\right] * e^{-\emptyset t} \ldots\ldots\ldots (12)$$

Replacing Equations 11 and 12 to the equation 8 results, we obtain:

$$\ddot{y}_t = \left[\left(\frac{S_{PK}}{(n+\partial_{PK}+\emptyset)}\right)^{\left(\frac{\alpha}{1-\alpha-\beta}\right)}\right] * \left[\left(\frac{S_{HK}}{(n+\partial_{HK}+\emptyset)}\right)^{\left(\frac{\beta}{1-\alpha-\beta}\right)}\right] * e^{-\emptyset t} \ldots\ldots\ldots (13)$$

Since $y\ \ddot{y}_t = Y_t/(\ddot{G}_t L_t)$ Thus, substituting it into the obtained (13), and then multiplying it with $\ddot{G}_t$, followed by taking the natural log, we obtain:

$$\ln\left(\frac{Y_t}{Lab_t}\right) = \ln(Gov_0) + \emptyset t + [\alpha/(1-\alpha-\beta)]\ln\left[\frac{S_{PK}}{(n+\partial_{PK}+\emptyset)}\right] + \left[\frac{\beta}{1-\alpha-\beta}\right]\ln\left[\frac{S_{HK}}{(n+\partial_{HK}+\emptyset)}\right] - \emptyset t \ldots\ldots (14)$$

In order to clarify, assume that the depreciation rate for physical and human capital is the same. Therefore, we obtain:

$$\ln\left(\frac{Y_t}{Lab_t}\right) = \ln(Gov_0) + \emptyset t - [\alpha + \beta/(1-\alpha-\beta)]\ln[n + \partial_{PK} + \emptyset] + [\frac{1-\alpha}{1-\alpha-\beta}]\ln[S_{PK}] + [\frac{\beta}{1-\alpha-\beta}]\ln[S_{HK}] - \emptyset t \ldots\ldots (15)$$

Now, the equation (15) explains that the output per worker in a steady state is increasing at an initial multifactor productivity level, capital and physical rates of investment and growth rate Bonga, Sithole, and Shenje (2015) of initial multifactor productivity. For each worker, the steady state output increases with higher multifactor productivity levels, and the greater the multifactor growth rate the higher will be the steady output per worker. The investment rate automatically works through Equations (11) and (12). Obtaining higher rates of investment tends to increase per worker's human and physical capital, which in turn increases the level of output for each worker, using equation (8). However, output per worker may decrease by depreciation $[n + \partial_{PK} + \emptyset]$ in capital and corruption. The value for γ determines the effects of corruption. If the value for γ is positive, it indicates that corruption is weakening the level of output, while, if the value for γ is negative, it indicates that corruption is enhancing the output and if γ=0, then the equation for a steady state output level equals to MRW. It shows the corruption effects on the economic growth and steady state level of a country. Capital productivity reduces with the increase in corruption by shifting the production function to right (Borja, 2017). Thus, at point A, it is impossible to maintain the initial capital stock per worker (k0), and moving the economy towards lower per capita stock per worker (k1). Thus, moving from k0-k1, negative economic growth will be witnessed along with reduction in output per worker.

Convergence to a Steady State

Keeping with MRW, the speed of convergence can be derived by reaching closer to the steady output level. We represented the speed of convergence using first order linear differential equation:

$$\frac{dlny_t}{dt} = \vartheta(lny^{ss} - lny_t) \ldots\ldots (16)$$

Here, $\vartheta = [n + \partial_{PK} + \emptyset] * 1 - \alpha - \beta$, This can be rewritten as $e^{-\vartheta t}\left[\frac{dy_t}{dt}\right] + \vartheta lny_t = e^{-\vartheta t}(\ln y^{ss})$ *to get the solution for Equation 16, thus we obtain:*

$$lny_t = (1 - e^{-\vartheta t})(\ln y^{ss}) - (1 - e^{-\vartheta t})\ln y_0 \ldots.. (17)$$

Here, y0 shows the economy's output at initial level. The right and left sides of Equation (17) is subtracted by ln yss with (15), we obtain the convergence equation:

$$ln\boldsymbol{Y}_t - ln\boldsymbol{Lab}_t = (1 - e^{-\vartheta t}) * \{\ln(Gov_0) + \emptyset t - \left[\frac{\alpha + \beta}{(1 - \alpha - \beta)}\right](\ln[n + \partial_{PK} + \emptyset]) + \left[\frac{1 - \alpha}{1 - \alpha - \beta}\right]\ln[S_{PK}] + \left[\frac{\beta}{1 - \alpha - \beta}\right]\ln[S_{HK}] - \emptyset\gamma\} - (1 - e^{-\vartheta t})\ln y_0 \ldots..(18)$$

Given a constant speed of convergence (ϑ), equation (18) is an economic growth function of initial multifactor productivity level and its growth rate, human and physical capital investment rates, population growth rate, initial output level and corruption level. Previously, the trivial factors indicate positive associations among initial levels of technology and time trends. Furthermore, this model also presents the traditional Solow neoclassical results. Exogenous parameters, e.g. depreciation rate and population growth, cause negative effects on the economy. However, the conditional convergence for this model is determined through the negative association among the economic growth level and initial output level.

Corruption minimises human and physical capital effectiveness which in turn affects the level of output per worker. Moreover, lower output per worker involves lower investments, therefore, keeping investment rates fixed. This would give rise to lower investment levels which further brings reduction in the level of output. Thus, it will result in negative impact on the rate of output growth per worker. Considering equation (15), it is the positive or negative sign of gamma which determines the direction of corruption, i.e. whether it is output debilitating or output enhancing. If the value of gamma is positive then it indicates that multifactor productivity has negative effects, on the other hand, if the value of gamma is negative, then it indicates results that are output-enhancing. To maintain uniformity, it must be noted that if gamma is zero then the equation (18) is reduced to the MRW. Equations (15) and (18) inherently contribute in a way that these equations can be tested directly by using ordinary least square (OLS). Therefore, the study must assume assumptions such as normality and other about the data.

Model Extensions

The above model is formulated to analyse the corruption effects on the economic growth through integrating a multifactor productivity and corruption in a Cobb-Douglas production function. This model will help to assess the government officials' corruptive behaviour in government resource allocation. Although, these government officials may have no control on the government spending, but they try to obstruct the resource allocation process, which comes from external sources like the United Nations, World Bank, and International Monetary Fund, non-government organisations, and foreign governments. Therefore, modification can be made in the above-mentioned model to analyse the slowing down of

economic growth through the corruption level, which occurs by affecting the level of foreign aid and government spending. Thus, we can reproduce equation (1) as:

$$Y_t = PK_t^{\alpha} HK_t^{\beta} [F_t(\theta) Lab_t]^{1-\alpha-\beta} \ldots\ldots (19)$$

Reconsidering and replacing G (government spending) in the equation (6) with F (foreign aid), we obtain:

$$F_t(\theta) = \ddot{F}_t e^{-\gamma\theta\vartheta} \ldots\ldots\ldots\ldots\ldots\ldots (20)$$

Here, γf represents the magnitude of the corruption's effect on the foreign aid. Thus, assuming conventional foreign aid (Ft) to be exogenous, it grows with rate $\ddot{F}_t e^{-\gamma\theta\vartheta}$keeping dFt =0. Thus, the data for the foreign aid will be used to estimate the following equation, by employing the same mathematical arrangement as used in the developing equation (15).

$$\ln\left(\frac{Y_t}{Lab_t}\right) = \ln(F_0) + ft - [\alpha + \beta/(1-\alpha-\beta)]\ln[n + \partial_{PK} + \emptyset] + [\frac{1-\alpha}{1-\alpha-\beta}]\ln[S_{PK}] + [\frac{\beta}{1-\alpha-\beta}]\ln[S_{HK}] - \gamma f\vartheta \ldots\ldots (21)$$

Data and Estimation

To perform a thorough statistical analysis, obtaining quality data is a prerequisite for a broad sample, such as in the case of emerging markets. The theoretical models involve certain parameters for physical capital investment rate, corruption, human capital saving rate, depreciation rate, multifactor productivity (such as, foreign aid, government spending) and population growth. Several sources were used for these variables. The economic data was obtained primarily from IMF, World Penn Tables, World Bank, Lebanese Ministry of Finance, and Bank of ASEAN. Whereas, for the corruption index, several information sources were used having merits and demerits for each one. Since there is no perfect corruption index, the one with longest time series was chosen for ASEAN. This corruption index is obtained from International Country Risk Guide (ICRG) of Political Risk Services International. The ICRR index involves enough information, as compared to the ones of their competitors, based on its correlation along with other corruption indices (Knack, 2001). Thus, the current data base was extensively utilised to carry out corruption related research, as appeared in the recent works (Tanzi & Davoodi, 2000; Knack & Keefer, 1995; Everhart & Sumlinski, 2001; Rajkumar & Swaroop, 2002; Abdiweli & Hodan, 2003; Seldadyo & Haan, 2006). As with other corruption indices, ICRG also suffers from expert's biasness risk i.e. biased opinions of experts. ICRG tries to determine the level of corruption through analysing special payments that the government officials demand and whether such payments are also demanded by lower level government officials. Such payments are generally made as bribes

and are associated with exchange controls, police protection, import-export licenses, loan, or tax assessment. A numeric measure is provided by ICRG which ranges from 0-6, where 0 represents most corrupt and vice versa. This data base issue ratings every month for more than 100 countries, starting from 1984. In Equation (1) the corruption index was represented by ρ. Thus, the raw data for corruption (ςt) will be converted into an index having a range between 0-1, i.e. the closer the value to 1 the higher will be the average level of corruption. This function is used because *CRPT* ()ςt turns output into a negative corruption function. For testing corruption's linearity, the corruption function would then be added both non-linearly and linearly into the production function. Accepting various limitations of corruption measures is often difficult. The operational definition presented in this study for corruption states that corruption is 'using public official power to obtain private benefits'. It is evident that varying degrees of abuse are available and separating low-cost and annoying corruption from the Mobutu-style or grand corruption is clearly not possible. Even if it is possible to measure the corruption's immediate impact, how can we still capture its subsequent impact, since investors often tend to avoid situations of out of control corruption?

The base model of the study without corruption used to estimate the impact of human and physical capital by static panel is as follows :

$$RGDP_{it} = \alpha_0 + \alpha_1 Gov_{it} + \alpha_2(\delta + PopG_{it}) + \alpha_3 Inv_{it} + \alpha_4 Edu_{it} + \varepsilon_{it} \dots\dots (22)$$

Adding the element of corruption in equation 22

$$RGDP_{it} = \alpha_0 + \alpha_1 Gov_{it} + \alpha_2(\delta + PopG_{it}) + \alpha_3 Inv_{it} + \alpha_4 Edu_{it} + \alpha_5 Corup_{it} + \varepsilon_{it} \dots\dots (23)$$

Adding the element of foreign aid in equation 23

$$RGDP_{it} = \alpha_0 + \alpha_1 Gov_{it} + \alpha_2(\delta + PopG_{it}) + \alpha_3 Inv - GDP_{it} + \alpha_4 Edu_{it} + \alpha_5 Corup_{it} + \alpha_6 FAid_{it} + \varepsilon_{it} \dots\dots (24)$$

Thus, this model has following limitations:

1) It only takes into account the government corruption;
2) The corruption index (ICRG) employed in this study is a poll of polls which is presumed to assist in cleansing surveyor-specific bias involved in the analysis. ICRG like other corruption indices tries to capture the perceptions of business people, risk analysts and academics about the degree of corruption. One of the major drawbacks of using this database is that it involves a short time series, is developed on the basis of subjective surveys and does not involve any methodology changing trouble from time to time.

The data inconsistency with respect to time gives rise to another unknown bias. Thus, in order to appropriately utilise and affect the shape of this database, it is important to acknowledge the limitations of corruption data. Some basic qualities also exist which make the corruption indicator most useful. Generally, for good measure, it must be trustworthy to capture the level of corruption. The credibility of an indicator declines when it is developed on the basis of one or few person's personal opinions, and thus becomes less useful. In addition, there must also be a valid measurement. Such as, if one aims to only capture the studying aspects of corruption, then measuring corruption convictions may only reflect the judiciary institutions' effectiveness. Other key factors include precision and accuracy. The greater susceptibility of the index to make measurement errors turns it into a less useful index. However, a standard deviation must be used to assess the level of accuracy. Contrarily, a quantity exhibits precision when there is general agreement on what it measures, whereas, it is ambiguous or imprecise when different opinions exist regarding a particular number. Survey precision can be achieved by inquiring those questions which are unrelated to individual standards. Moreover, government spending is used as a multifactor productivity measure in this model, without considering other factors, such as technology's impact on the growth (Sakamoto, 2018).

The estimation of the regression pair is entailed by Granger causality test.

$$RGDP_{it} = \sum_{t=1}^{n} \beta_i Gov_{it-1} + \sum_{t=1}^{n} \beta_j RGDP_{it-1} + \varepsilon_{1it} \ldots\ldots\ldots\ldots (25)$$

$$Gov_{it} = \sum_{t=1}^{n} \beta_i RGDP_{it-1} + \sum_{t=1}^{n} \beta_j Gov_{it-1} + \varepsilon_{2it} \ldots\ldots\ldots\ldots (26)$$

$$PopG_{it} = \sum_{t=1}^{n} \beta_i RGDP_{it-1} + \sum_{t=1}^{n} \beta_j PopG_{it-1} + \varepsilon_{3it} \ldots\ldots\ldots\ldots (27)$$

$$Edu_{it} = \sum_{t=1}^{n} \beta_i RGDP_{it-1} + \sum_{t=1}^{n} \beta_j Edu_{it-1} + \varepsilon_{4it} \ldots\ldots\ldots\ldots (28)$$

$$Corup_{it} = \sum_{t=1}^{n} \beta_i RGDP_{it-1} + \sum_{t=1}^{n} \beta_j Corup_{it-1} + \varepsilon_{5it} \ldots\ldots\ldots\ldots (29)$$

$$FAid_{it} = \sum_{t=1}^{n} \beta_i RGDP_{it-1} + \sum_{t=1}^{n} \beta_j FAid_{it-1} + \varepsilon_{6it} \ldots\ldots\ldots\ldots (30)$$

$$Inv_{it} = \sum_{t=1}^{n} \beta_i RGDP_{it-1} + \sum_{t=1}^{n} \beta_j Inv_{it-1} + \varepsilon_{6it} \ldots\ldots\ldots\ldots (31)$$

Results

Correlation analysis is used to determine the direction and strength of the relationship between latent variables. As illustrated in Table 1, the results show that all variables, have a positive relationship with ECN.

Table 1: Correlation Analysis

	1	2	3	4	5	6	7
RGDP	1.00						
	--						
Gov	0.15	1.00					
	(0.41)	--					
Pop	0.20	0.13	1.00				
	(0.27)	(0.48)	--				
Inv	0.26	-0.13	0.41	1.00			
	(0.15)	(0.46)	(0.02)	--			
Edu	0.03	-0.12	0.43	0.03	1.00		
	(0.87)	(0.52)	(0.01)	(0.88)	--		
Corup	0.311	0.03	-0.23	0.31	0.13	1.00	
	(0.01)	(0.87)	(0.52)	(0.01)	(0.88)	--	
Faid	0.411	0.543	-0.762	0.052	0.362	0.234	1.00
	(0.01)	(0.627)	(0.52)	(0.01)	(0.88)	(0.62)	--

Econometric theory requires that all variables must be stationary conditions. If non-stationary variables are used in the regression, the results will be misleading because of spurious regression. Therefore, it is a preliminary condition to test for the unit root before proceeding to other econometric analysis. In this study, the LLC test was employed to perform the panel unit root test.

Table 2: LLC test

Test	Constant	Constant+Trend
Panel v-Statistics	-1.926	-2.8731
Panel ρ -Statistics	0.07231	0.7632
Panel t -Statistics (non-parametric)	-6.6752***	-8.843***
Panel t -Statistics (parametric)	-4.327***	-6.674***
Group ρ -Statistics	2.732	2.923
Group t -Statistics (non-parametric)	-7.762***	-10.253***
Group t -Statistics (parametric)	-3.877***	-4.324***

The null hypothesis is rejected at 5 percent significance level by the ADF, and in the panel and group t statistics, even the conditions are constant or constant plus trend. Therefore, the null hypothesis rejection is supported by most of the statistics, which reflects that there exists a long-term association between the variables with reference to the ASEAN countries. In the conditions of constant or constant plus trend, the parametric (ADF-statistics) and non-parametric (t-statistics) are considered reliable (Pedroni, 1999). In this regard, Table 3 shows

the results, which lead to the conclusion that there is a long term association between the variables.

During the estimation exercise, we conducted a number of tests that included the Redundant Fixed Effects test and Hausman test. For instance, the Redundant Fixed Effects test was conducted to test the hypothesis that time-specific effects are present in the time series and cross section data. This test enables us to determine if the pooled Ordinary Least Squares (OLS) estimation is appropriate or not and whether one should use the FE/RE estimation. Similarly, the Hausman test was performed to determine if the RE estimates are correct and preferred to the FE and GMM estimates. The data of ASEAN countries over the period of 32 years from 1982 to 2017 is gathered from the official forums The fixed effect regression results of the model 2-8 are explained in the table 2 and table 3. The findings of the study are showing consistency with the prior finds. The government expenses and inflation appeared in a negative but significant relationship with the saving of ASEAN countries.

Table 3: Regression results of fixed effect estimates (equation 22-24)

Dependent Variable:*GDP*	**Model 22**	**Model 23**	**Model 24**
Gov	0.177***	0.135**	0.089**
Pop	0.198**	0.154**	0.170**
Inv	0.254**	0.0238**	0.243*
Edu	0.222	0.313*	0.284*
Corup		-0.231**	-0.239**
FAid			-0.234*
***R*^2**	**0.740**	**0.518**	**0.616**

Table 4 represents the results of causality direction between the variables of interest examined through Granger causality test. This study performed the Granger causality test to assess the causal relation between economic growth and corruption. For this test, same data set for real per capita GDP and corruption was used and was obtained from IMF and ICRG, respectively. The question that whether x variable Granger causes y variable, i.e. how much of the past y values explain the current y value, and if there is any improvement in explanation by adding variable x lagged values. It is said that x Granger caused y, if x contributes to predict y, or similarly when lagged coefficients turned out to be statistically significant. A case which frequently occurs is a two-way causation i.e. x Granger causes y and y Granger causes x. However, it must be noted that the Granger cause statement does not indicate that y is the result of x. The Granger causality test measures information content and precedence, however it does not measure causality as the term says. The statistical findings give F-statistics obtained by performing Wald test to analyse the joint hypothesis. In the first hypothesis, it is tested that there is no causal relationship running from x to y, and the other

null hypothesis states that a causal relationship runs from y to x. The value of F-statistic was found to be statistically significant which rejects the null hypothesis.

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Table 4: Granger causality test

Equation 25			
Excluded	**Chi-sq**	**df**	**Prob.**
RGDP	34.651	2	0.000
L-RGDP	20.219	2	0.000
Gov	78.236	2	0.000
All	**133.106**	**6**	**0.000**
Equation 26			
RGDP	31.721	2	0.000
L-Gov	17.182	2	0.000
Gov	53.236	2	0.000
All	**102.39**	6	**0.000**
Equation 27			
RGDP	14.613	2	0.000
Pop	10.222	2	0.000
L-Pop	21.236	2	0.000
All	**46.071**	**6**	**0.000**
Equation 28			
RGDP	32.231	2	0.000
Edu	12.762	2	0.000
L-Edu	28.236	2	0.000
All	**73.229**	**6**	**0.000**
Equation 29			
RGDP	21.651	2	0.000
Corup	17.219	2	0.000
L-Corup	21.236	2	0.000
All	**60.521**	6	**0.000**
Equation 30			
RGDP	21.023	2	0.000
FAid	2.321	2	0.000
L-FAid	8.091	2	0.000
All	**31.435**	6	**0.000**
Equation 31			
RGDP	34.231	2	0.000
Inv	20.219	2	0.000
L-Inv	11.226	2	0.000

All	**65.676**	**6**	**0.000**

Thus, another causality test was performed to check the causal relation among corruption and economic growth. In the first hypothesis, it is proposed a causal relation runs from corruption to economic growth, and in the second null hypothesis, it is proposed that no causality exists from economic growth to corruption. Table 3 shows that due to insignificant F-statistic, the first null-hypothesis cannot be rejected, which implies that it confirms that corruption does not cause economic growth. This finding is inconsistent with the literature. Contrarily, the F-statistics for the second hypothesis turned out to be significant at 5% significance level, which indicates the rejection of the second hypothesis. The rejection of the second hypothesis implies that a causal relation exists between economic growth and corruption. A few countries while experiencing economic growth tend to make necessary structural adjustments, through replacing corrupt practices, policies, and institutions, with the good strategies to make it look less crucial, which may empower the elite class and encourage corrupt activities (Franko, 2018). Such as, after the Second World War, the rapid growth period of the former Soviet Union has aggravated the corruption level without improving institutions and introducing new policies. In late 1990s, the Asian crisis has shown that experiencing rapid economic growth in the absence of proper institutional structures may encourage corruption and is more exposed to crises (Chang & Grabel, 2014).

Conclusion

It has been argued that foreign aid encourages corruption (Belgibayeva & Plekhanov, 2019). In an effort to improve foreign aid accountability, although costly, it has become a common practice, since spending on corrupt governments has abandoned those institutions which are critical for the country's economic growth and that establish corrupt elites. Thus, a causality test was performed to test the causal relationship between corruption and foreign aid (Abu, Karim, & Zaini, 2015). In the first hypothesis, it is proposed that there is no causal relation running from corruption to foreign aid, whereas, in the second hypothesis, it is proposed that there is no causal relation running from foreign aid to corruption. This has shown that we cannot reject both the first and second null hypotheses, as F-statistics obtained for both hypotheses are insignificant. It implies that corruption does not cause foreign aid and foreign aid also does not cause corruption. A noteworthy fact highlighted by Heywood (2015) is that during 1960-2005, a foreign aid of above US$450 billion has been received by Africa, despite the worsening condition of corruption in Africa during the past few years.

Furthermore, the findings suggest that the effects of government spending on output is reduced by corruption. Putting it differently, corruption infuses inefficiency in the factors of production, such as, the corrupt officials tend to approve higher cost public projects to obtain personal benefits (Chayes, 2015). Incompetent and inefficient firms offer bribe payments to

capture government licenses and contracts to obtain benefits through the corrupt officials, by creating additional cost and risk to the government. The findings obtained in this study are found to be consistent with the findings from Kobayashi (2017), who suggested that public investment increases and it's effectiveness decreases with corruption, and the findings from Tanzi and Davoodi (2015), which indicated that public investment increases, and infrastructure quality and operation maintenance decreases with the increase in political corruption. Moreover, results also explained that the education expenditure effects on output also reduces with corruption. Agostino et al. (2016) reported that negative association exists among corruption and, because it offers limited rent-seeking opportunities compared to what other items offer. In our study, the variable of education spending shows human capital. Thus, it is concluded that human capital productivity declines with corruption. Another study found empirical evidence that human capital productivity is negatively affected by corruption. Moreover, Agostino et al. (2016) suggested that corrupt officials put in substantial efforts and time to accumulate political capital, which consequently may reduce the productivity of democracies and governments.

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Word count: 3261
Character count: 17385

Advances in Social Sciences Research Journal – Vol.6, No.1
Publication Date: Jan. 25, 2019
DoI:10.14738/assrj.61.5964.
Sessu, A. (2019). The effect of tax revenue, investment and foreign debt on poverty level. *Advances in Social Sciences Research Journal*, 6*(1)* 181-187

The effect of tax revenue, investment and foreign debt on poverty level

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ABSTRACT

Indonesia economic development, especially in the three macro-economic variables, namely tax revenues, foreign debt and developments of investment from 2002 to 2017 can be categorized as increasing and the number of poor people can also be categorized as decreasing. The results of multiple regression analysis show that tax receipts and investment developments have not been able to reduce poverty levels, because with high tax revenues originating from high individual and corporate taxes can affect the level of prices by itself demand decreases, as a result companies also reduce production and investment activities affect the decline in employment opportunities that can give birth to unemployment and poverty, one of which is also the reason for the receipt of taxes in part by corruption by certain people and the entry of high foreign workers. The foreign debt can reduce the poverty level, because the greater the foreign debt the more developing development activities that can absorb labor that affect the decline in unemployment and poverty rates. Multiple correlation coefficient (r) of 0.947 means that there is a very strong relationship between all three variables studied, while the coefficient of determination (R^2)= 0.896 or 89,6% of the number of poor can be affected by variables of tax revenue, loans overseas and investment development. The remaining 10.4% is influenced by other factors. The results of this study explain the importance of government policies to always suppress foreign labor and imports as well as increase the quality of human resources both character quality and human resource competencies. Preservation of natural resources is very important to be done through sustainable efforts, both those carried out by the community, companies and the government so that the national economy will increase in the future.

Keywords: Investment, foreign debt, tax revenue, poverty level

INTRODUCTION

The national development, especially in the Indonesian economy since the old order up to the new order, has been quite encouraging, compared to several other countries in the world. However, the problem of unemployment, poverty and corruption is still very high compared to several other countries in the world. Data shows that Indonesia's poverty and unemployment rates from 2014 to 2018 are declining, so it is very important to do an in-depth analysis of national economic developments so that these problems can be minimized even if it is possible to immediately eliminate them. Data on unemployment and poverty in Indonesia in the last 4 years, from 2015 to 2018, the lower the poverty rate and unemployment rate can be shown in following the table:

Table 1: Unemployment and Poverty level in Indonesia from 2015 - 2018

Years	Percentage (%)	
	Unemployment	Poverty level
2015	6.18	11.13
2016	5.61	10.64
2017	5.50	10.12
2018	5.13	9.84

Source: Ministry of Finance Indonesia (2018)

Based on macro and micro conditions of tax revenues, foreign debt and development of investment shows that the three variables have a very large influence towards increasing national income and can automatically increase investment and open opportunities for employment opportunities so that it can affect the decline in unemployment and poverty levels. This reality is the reason for researchers to examine the relationship between variables of tax revenue, foreign debt, development of investment with poverty levels in Indonesia.

Investment in Indonesia has the potential to increase its development,because Indonesia is very rich in natural resources and human resources, except that the quality of human resources needs to be improved in terms of both quality and quality of character and natural resources. For this purpose, awareness is needed to preserve and control, which can be done by society, companies and the government, so that the national economy is getting better which then impacts on the low levels of unemployment and poverty in Indonesia. Because at this time Indonesia is still one of the countries with relatively higher levels of poverty and unemployment compared to some other countries in the world.

LITERATURE REVIEW

Foreign debt

Foreign loans or foreign debt are a portion of a country's total debt obtained from creditors from outside the country, this form of debt can be in the form of money obtained from private banks, governments of other countries, or international financial institutions such as the IMF and the World Bank, or a number of funds borrowed and obtained from other countries (bilateral). The results of previous studies provide evidence that there is a significant influence between economic growth and foreign debt and foreign investment, the contribution of economic growth to foreign debt of 57.40% (Purwanto & Mangeswuri, 2011).

Development of Investment

Investment or commonly referred to as investor is a term with several definitions related to economics and finance. The term relates to the accumulation of a form of asset with an expectation to gain profit in the future. Investment expenditure or what is referred to as an aggregate economic variable is gross domestic domestic investment. This economic variable includes all domestic expenditures carried out by the private sector to establish new buildings, new machinery and equipment and changes in the number of various types of company inventory. The results show that gross domestic product and interest rate have a significant positive effect on direct investment in Indonesia while the exchange rate has a negative effect on direct investment in Indonesia (Malisa & Fakhruddin, 2017).

Tax revenue

Receipt of tax is a contribution of the people paid to the state based on the law, so that it can be forced, by not receiving direct remuneration. In the other part of the tax or tax is the money or purchasing power that is surrendered by the public to the government where the money is

given (purchasing power), the government does not provide direct remuneration. Submission of public money to the government can be done in the form of income tax, wealth tax, inheritance tax, sales tax, or all of which are referred to as taxes. The results of previous studies provide evidence that taxpayer compliance and disbursement of tax arrears have a significant effect on tax revenues. The results of the study provide recommendations that increasing taxpayer compliance can be done through counseling so as to create public awareness to pay taxes, as well as to disburse tax arrears so that tax revenues are more optimal and can be increased in the future (Molle et al., 2014).

Poverty level

The problem of poverty is a classic problem that has become a global issue. Poverty is a situation where there is an inability to fulfill basic needs such as food, clothing, shelter, education, and health. Poverty can be caused by scarcity of tools to fulfill basic needs, or the difficulty of access to education and employment. Some people understand this term subjectively and comparatively, while others see it from a moral and evaluative point of view, and others understand it from an established scientific perspective, and so on. The work achieved by The National Team for the Acceleration of Poverty Reduction (National Team for the Acceleration of Poverty Reduction or TNP2K) showed in 2011 that the higher the level of education at the head of the household will further reduce the likelihood of the household falling into poverty.

The President Susilo Bambang Yudoyono and Boediono era, the poverty rate in Indonesia was targeted to only reach 8% to 10%. To achieve this target, the Government implemented a poverty reduction program grouped in 3 clusters. The first cluster is a family-based poverty reduction program, such as health assistance, education and also a family hope program (PKH); The second cluster is a community empowerment-based poverty reduction program such as the Indonesian National Community Empowerment Program or PNPM-Mandiri (National Program for Community Empowerment); and the third cluster, is a micro and small business based poverty reduction program. High economic growth correlates with the continuing decline in poverty (The National Team for the Acceleration of Poverty Reduction (National Team for the Acceleration of Poverty Reduction or TNP2K), 2011). Empirical facts show that the decline in the unemployment rate does not have a significant effect on poverty, because the number of poor people living in the regions is greater than those living in cities. Statistically, gross regional domestic product (gross regional domestic product or GDP) and other variables such as public expenditure have a significant effect on poverty while the unemployment variable does not significantly influence poverty (Rusdarti & Sebayang, 2013).

METHODS

This research was carried out at the Central Agency on Statistics (Indonesia-Jakarta) and the offices of related agencies, namely the ministry of trade and industry. The sample used in the study is the overall national data related to tax revenues, foreign debt, increasing investment and poverty levels in Indonesia since the last 15 years, starting from 2002 to 2017. The design of the analysis used includes descriptive statistics to provide an overview general in research and inferential statistics to test hypotheses, which are then followed by multiple linear regression analysis.

RESULTS

Most of the studies have used income to identify poor households. We have two problems with this procedure. First, the official poverty line in Indonesia is consumption expenditure. Secondly, data is obtained from household expenditure surveys. We therefore compare a person 's consumption expenditure with the poverty line to determine its poverty status. This

agrees with the idea that poverty is the inability to attain a critical minimum amount of consumption. The level of aggregation, from the individual, or household, microeconomic level to the macroeconomic, or countrywide, level. Mechanisms of underlying poverty traps at different levels of aggregation are similar, as suggested by Barrett & Swallow (2006). We refer interested readers to recent surveys of this literature in Barrett & Carter (2013), who consider mainly microeconomic aspects, and discuss the available evidence at the aggregate level. Hausmann et al. (2005) admitted that escapes from the poverty trap might, at the aggregate level, be responsible for some of the observed growth accelerations. However, the researchers did not follow this route, they were just the result of a change in the long run, with either reforms, external shocks, or political shocks.

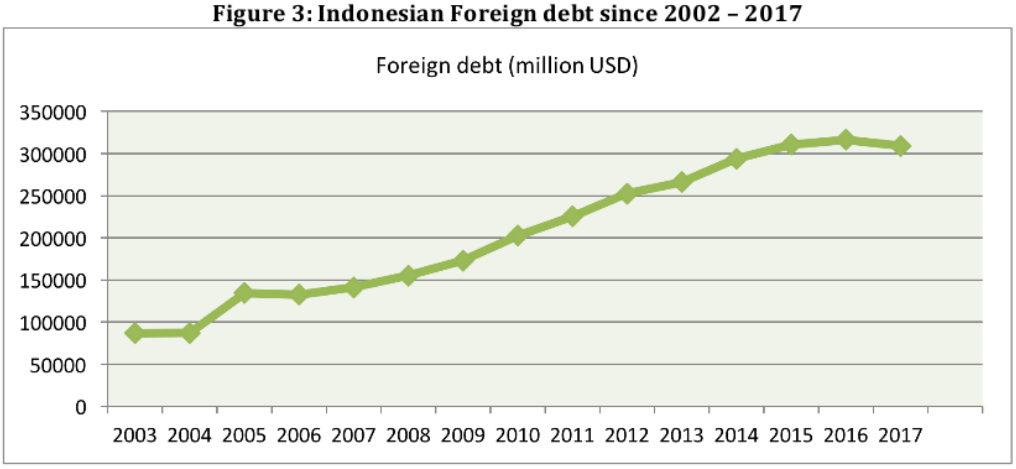
Figure 1: Indonesian Poor householders since 2002 – 2017

The number of poor people in Indonesia from 2002 - 2017 shows that with economic development can reduce the number of poverty from 2002 to 2005 decreased, only in 2006 increased and again declined again in the year 2007 to 2017. The policy can be considered as a country to sustain and strengthen its economic growth and global competitiveness. It provides countries with stable and predictable fiscal environment; thus, enabling them to accumulate funds to their finance social and physical infrastructure needs. Combined with economic growth, effective tax policies reduce long-term reliance on aid and ensure good governance by promoting the accountability of governments to their citizens. Although the exact impact of taxation on economic growth, the nature of the causal links between these two macroeconomic variables is equally crucial. If there is a causal flow from taxation to economic growth, this will suggest that the policymakers can count on fiscal policy tools to influence economic activities. Indeed, this is the policy implication of Keynesian theories. However, there is no causal flow between taxation and economic growth - which is implied policy implication of the long run - then tax policy as a fiscal policy will be effective.

Figure 2: Indonesian Tax revenue since 2002 - 2017

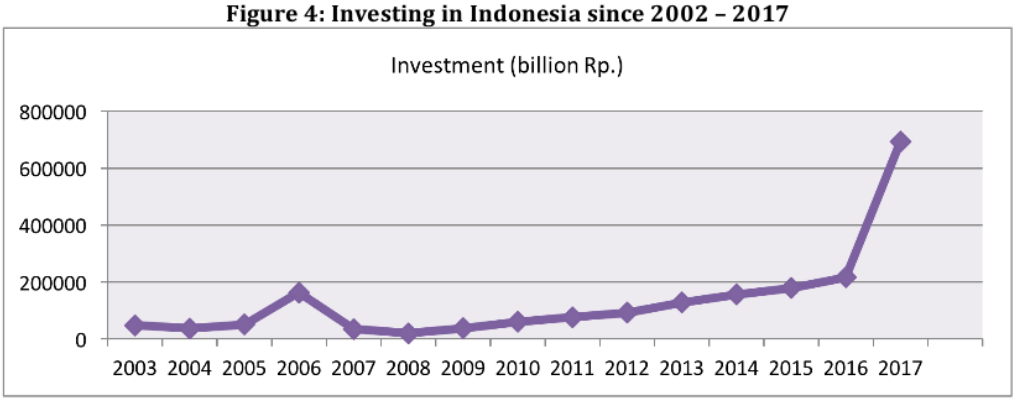
Indonesian tax revenues from 2002 - 2017 shows that tax revenues increased in 2003, in 2004 decreased, in 2005 to 2008 increased, in 2009 decreased, in 2010 increased until 2013, in 2014 it fell, increasing again until 2016 fell again in 2017. It can be concluded that tax revenues from 2002 to 2017 generally increased. A bad country economy has an impact on economic development that cannot run smoothly. Economic development is one of the efforts of the Indonesian government to improve the welfare of the community and improve the standard of living of the people so that they are far from the poverty line.

Figure 3: Indonesian Foreign debt since 2002 – 2017



Indonesia's foreign debt from 2002 - 2017 shows that from 2002 it increased until 2005, declined in 2006, then continued to increase until 2016 and decreased in 2017, but it can be concluded that foreign debt from 2002 to 2017 generally increased. Reducing the number of poor people in Indonesia, desperately needs investment as a source of economic development, modernization, income growth, employment. Investment is an important component in national income and economic growth. Investment plays an important role in economic growth, it is important to determine investment strategies that will balance economic growth and sustainable development. Investment is a commitment of funds, directly or indirectly, to one or more assets in the hope of increasing future wealth.

Figure 4: Investing in Indonesia since 2002 – 2017



The data on the development of Indonesian investment from 2002 to 2017 shows that it increased in 2003, decreased in 2004, increased until 2006, declined again until 2008, then in 2009 it increased to in 2017, it can be established in general the development of Indonesian investment from 2002 to 2017 experienced a positive increase in the results of the development of regression analysis and the relationship between variables of tax revenue, foreign debt, development of investment and the poverty levels in Indonesia from 2002 – 2017. The multiple regression equation Y = 42313600,962 + 0.840 (tax revenue) - 53,563 (foreign debt) + 0,794 (Investing) shows that the amount of tax revenue and investment development has a positive effect on the amount of poverty which means that each increase in 1 score increases also the number of poverty of 0.840 and 53,563 in constant 42313600,96, medium foreign debt have a negative effect on the amount of poverty, meaning that each increase in 1 score of foreign debt decreases the amount of poverty by 0.794 in the constant 42313600.96. While the results of the analysis of multiple correlation coefficients (r) of 0.947 means that there is a relationship together is very strong among the four variables studied and the coefficient of determination (R2)= 0.896. Which means that 89.6% of the number of poor people can be influenced by variable tax revenues, foreign debt and the development of investment together, the remaining 10.4% is influenced by other factors.

CONCLUSION

The results of the regression analysis and the relationship between the variables of tax revenue, foreign debt, development of investment and the poverty level from 2002 - 2017, indicate that tax revenues and investment levels have a positive effect or can be said to be unable to reduce poverty level, variable foreign debt have a negative effect or can be said to reduce poverty. While the results of the analysis of multiple correlation coefficients (r) in the can of 0.947 means that there is a very strong together between the four variables studied and the coefficient of determination (R^2)= 0.896. Which means that as much as 89.6% of the number of poor people can be influenced by variables of tax revenues, foreign debt and developments of investment, the remaining 10.4% is influenced by other factors. Tax revenue and developments of investment have not been able to reduce poverty level, because with a high tax rate can affect the price level to increase by itself demand decreases as a result companies also reduce production and investment activities affect the decline in employment opportunities that can give birth to unemployment and poverty, one of them some are corrupted by certain people. Foreign debt can reduce poverty level, because the greater foreign debt are development activities that can absorb labor, thus affecting the decline in unemployment and the Indonesian poverty level. From the results of the study there needs to be an effort to suppress foreign labor and imports, improve the quality of human resources, both quality and character quality and preserved natural resources, control both individual

communities, companies and governments, in order to be able to develop an increasingly better economy forwards.

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APPENDIX 1: TAX REVENUE, FOREIGN DEBT, DEVELOPMENT OF INVESTMENT AND POVERTY LEVEL IN INDONESIA

Years	Poor Population (householder in million Rp.)	Tax (billion Rp.)	Foreign debt (million USD)	Investment (billion Rp.)
2002	38,390,000	219627	77818	25307.6
2003	37,340,000	364140	86650	48484.8
2004	36,150,000	272175	87036	37140.4
2005	35,100,000	297844	134504	50577.4
2006	39,300,000	416313	132633	162767.2
2007	37,170,000	509462	141180	34878.7
2008	34,960,000	658701	155080	20363.4
2009	32,530,000	619922	172871	37799.9
2010	31,020,000	742738	202413	60626.3
2011	30,010,000	850255	225375	76000.7
2012	28,710,000	1032570	252364	92182
2013	28,600,000	1192994	266109	128150.6
2014	27,730,000	1146866	293770	156126.3
2015	28,510,000	1379992	310730	179465.9
2016	27,760,000	1546665	316407	216238.1
2017	26,580,000	1498871	309067	692800

The effect of tax revenue, investment and foreign debt on poverty level

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The Moderating Effect 0f Supply Chain Dynamic Capabilities on the Relationship of Sustainable Supply Chain Management Practices, Supply Chain Integration and Business Performance

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Submission date: 27-May-2020 09:15PM (UTC+0700)
Submission ID: 1332810973
File name: 758-Article_Text-1332-1-10-20200525.pdf (471.45K)
Word count: 7628
Character count: 44214

Talent Development & Excellence
Vol.12, No.1, 2020, 1339-1353

The Moderating Effect 0f Supply Chain Dynamic Capabilities on the Relationship of Sustainable Supply Chain Management Practices, Supply Chain Integration and Business Performance

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Abstract

The aim of the current study is to examined the moderating effect of supply chain dynamic capabilities (SCDC) on the relationship of sustainable supply chain management (SSCM) practices, supply chain integration (SCI) and business performance (BP) in the restaurant industry of Indonesia. For this purpose, the self-administered questionnaires were distributed among 269 supply chain managers which yield a 78% response rate. The Structural Equation Modeling (SEM) has shown that both the exogenous variable namely, SSCM practices and SCI have a positive and significant direct effect on the BP of restaurant industry of Indonesia. Moreover, the indirect effect also shown that SCDC is positively and significantly moderates among the relationship of SSCM practices, SCI and BP. In this regards, these findings indicate that SCDC is an important moderating variable which could help to take improvement in the SSCM practices and SCI improve the BP. These findings could add a body of literature in the empirical perspective which could help to increase the area of research in future.

Keywords: supply chain dynamic capabilities, sustainable supply chain management, supply chain integration, business performance.

Introduction

In the current age of life, Globalization was run by improvement in the field of transportation and communication (De Vass, Shee, & Miah, 2018). The reason of globalization is that the needs and requirements of the customers are rapidly changed. At the reasonable price, high quality, in the reasonable time, and right place the customers want suitable goods and services. On the other hand, if a firm want to enter in a new market place, it is necessary for they must correspond with the demands of beforehand customers (Huang, Yen, & Liu, 2014; van Donk & van Doorne, 2016). For the purpose of achieving the customer's satisfaction at this stage a firm must improve all their strategies and activities. Supply Chain Management (SCM) is a background that improves all the processes accomplished in the firms (Childs, 2016). Moreover, SCM work as a complicated operation which is consist on all the vendors' supportive movements, suppliers to service of after sales. To have an ability to sustain and develop any firm needs and requirements to identify its re-enforces on the conditions and qualities and deficiencies (Wong et al., 2010). Representing SCM could be a basis of competitive benefits (Huo, 2012) that is principal towards significant performance by as well as overall the firm performance (FP) (Huo, Qi, Wang, & Zhao, 2014).

The cooperation inside of supply chain and sustainable supply chain management (SSCM) consider as a significant job for improving business performance (BP) and enhancing competitive advantages.

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

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At the most extreme level of performance it utilized supply chain (SC), it is essential for the firms to incorporate together of their practices and objectives (Kumar et al., 2017; W. Yu, 2015). That is necessary for Partners of SC to pay more attention on many appliances for assurance of competitive advantages: efforts of financial collaboration to support an innovative design of product design (Childs, 2016; C. W. Wong, Wong, & Boon-itt, 2013). The SCM is consist of integration and SSCM as well as synchronized for obtaining and reacting towards changes in customers' request (Rajeev, Pati, Padhi, & Govindan, 2017; J. Yu et al., 2013). There are the study revealed that the Supply Chain of Integration (SCI) have influences on FP (Huo et al., 2014; Kumar et al., 2017; Lu, Ding, Asian, & Paul, 2018) while other indicates that SCCM has an influence on BP (Crum, Poist, Carter, & Easton, 2011; Das, 2018; Golicic & Smith, 2013). Similarly, it seems that the value should be reflected towards influences of SCI practices, SCCM and procedures on the BP. In this way, this research discovers the SCI and SSCM influences on BP at the of Indonesia industry.

The restaurant industry has been contributing significantly towards extension of the entrepreneurial activities by enhancement in organization. In this way restaurant industry in Indonesia are increasing their area across of over economy parts, and contrary range of services and products are delivered for meeting markets requests (Palandeng, Kindangen, Timbel, & Massie, 2018). Therefore, the performance restaurant industry will influence on nation's economy. This studies also disclose that restaurant industry in Indonesia remain confronting many obstacles and difficulties therefore that effected the overall these business performance (BP) (Huo et al., 2014; Ralston, Blackhurst, Cantor, & Crum, 2015). Generally, restaurant industry in Indonesia are worried about achieving independently their all objectives and goals and continuous changing requirements and needs of customers due to extreme competitions between the firms. As a result, that leads to the challenges in incorporating SC processes and activities that delay in supplying services and products towards customers in a reasonable time and at suitable place and loss the competitive advantages (Huo, Ye, Zhao, & Shou, 2016).

The basic purpose of this study is to investigate influences of SCI and sustainable supply chain management (SSCM) on the BP in Indonesia. On the other hand, this research also provides significant recommendations to the restaurants in Indonesia, as well as also for further industries. Lastly, this study contributes in scientific field. At the current stage, pay more attention on SCI, SSCM and BP is become progressively more significance due to its influence on firms' steadiness, progress, and existence. Hence, reviewing the influences of SCI and SSCM on the BP remain very necessary subject for the academicians and organizations.

Literature Review and Hypothesis Development

There are by utilizing different means many literatures categorized supply chain performance (SCP) and supply chain of integration (SCI) and all definition remained custom fitted that revealed by the indicated research, study, and business objectives. The SCI about coordination and cooperation as well as collaboration among different SC players that are enhance the FP. These supplementary segment will motivate and handle the SCI ideas and SCP, and also make an association between them.

Supply Chain Integration and firm performance

According to study, SCI is considered as a collaboration procedure into the players of SC which are supervise internal and external activities of a firm for the purpose of achieving effective flow of information, products and services that must provide at maximum extreme value towards the customers on reasonable cost and in accurate place (Nurmilaakso, 2008; J. Yu et al., 2013; Zolait, Ibrahim, Chandran, & Sundram, 2010). For the purpose of improving comprehension of SCI there are

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SCM are characterized in three dimensions (Chang, Ellinger, Kim, & Franke, 2016; Kim, 2009; Leuschner, Rogers, & Charvet, 2013). Therefore, suppliers are think about the key sources of input and information which essential for firms' objectives, consequently they have a necessary job in assembling products as well as service continuation to meet the requirements of customers (Flynn, Huo, & Zhao, 2010; C. Y. Wong, Boon-Itt, & Wong, 2011). At the current stage, there are manufacturing firms tend towards form a constant association between their suppliers that deal with customers' demands variance and reducing the time of production cycle and time of delivery which is defined by customers and firms (Liu, Ke, Wei, & Hua, 2013; Nurmilaakso, 2008; W. Yu, 2015). At that time suppliers are positively and progressively connected with manufacturing products and promote production towards remaining customers in neighboring (Lii & Kuo, 2016; Saleh & Roslin, 2015). Thus, an investigation categorized supplier's integration (SI) in the way of cooperation procedure between firms and partners that also encourage sharing of data, services, materials and experience. The exact things that redirect the objectives of relationship, partnership, and further applicable matters between firms and suppliers that are assessed by SI.

By recognized the objectives of link, internal integration (II) and coordination are the principal gravity point for both customers and suppliers, as well as it's viewed in the way of essence that make high consistency and stability towards all parties of SC (Ataseven & Nair, 2017; Liu et al., 2013; Qi, Huo, Wang, & Yeung, 2017; Santoso, 2020). Constructing the accurate procedure SC is depends on shared objectives and clear presence, that is originally be come from acceptance of entire functional divisions the objectives of a firm (Chang et al., 2016; Thai & Jie, 2018; W. Yu, 2015; Zolait et al., 2010; Santoso et al., 2019). In addition, the dual customers' sorts all division is think about it (Chang et al., 2016; Lii & Kuo, 2016; Yusuf & Shehu, 2017). Therefore, primitive customers remain preeminent client that a firm aims towards render by finished goods and services, on the other hand there is different division for secondary customer and human resources at this stage depends on different outcomes for achieving their goals as well as in this way the firms can obtaining their objectives (Ataseven, Nair, & Ferguson, 2018; Huo et al., 2014; Tavana, Shabani, & Singh, 2019; Maryanti, 2019). According to this study, the II is defined in the way to keeping up collaboration and participation of cross-functional in the firms that is means to obtain strategic goals of an organizations. It remained estimated with indicators group which is cooperation in several departments.

The firms are considering that customers as a source of the life, therefore forth firms provides either services and goods, as well as it's viewed in the way of natural air which is necessary for a firm to improved having capability for withstand inside of presence of a substantial or extreme competition level (Chang et al., 2016; Leuschner et al., 2013). Requirements and demands of customers remain changed continuously, therefore what remained viewed as an important in previous maybe in the future become complementary (Flynn et al., 2010; Sabet, Yazdani, & De Leeuw, 2017). In view of that, it is very necessary for an organization to observe outer environments. Besides, for the preforming of customers' needs it must carry on the proactively moreover not reactively to well excess of competitors (Danese & Bortolotti, 2014; Huo, 2012). In addition, in the present study, CI is categorized as a way to keeping up and building a significant association and partnership between customers. In this way it incorporates service, recommendations, outputs, and sharing information with customers. The present research is addresses SCI that incorporates suppliers and internal as well as CI.

Business performance

It is indicated that an additionally extensive conceptualization as well as increasingly capable to performance measure must incorporate the operational performance indicators, and also those performances on financial basis (Mao, Zhang, & Li, 2017; Ralston et al., 2015). Accordingly, these are

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primarily the reason is that measures of non-financial can be overcome the boundaries of that only using measures of financial performance. It is indicated that in this study several advantages are provide for measures of non-financial, consists on the facts that measures of non-financial remain appropriate then the financial ones. Measures of financial performance are progressively quantifiable, as well as they remain predictable with firms' strategies and objectives (Leuschner et al., 2013; Van der Vaart & van Donk, 2008).

On the other hand, measures of non-financial are differ and it can be change later some time when needs of market change and manage to be this flexible in future (Huo et al., 2014). Although measures of financial performance are assured to reflect valuation of an organization with outside components of an organization's limits, and inside a firm operational measures point out about more directly effectiveness of objectives and responsibilities (Leuschner et al., 2013; C. Y. Wong et al., 2011). In the specific SC area these categorization of performance is reflecting the competencies, including cost, reliability, customer's satisfaction, and consistent quality and transportation speed. In this way measures of FP provides a significant suggestion about the efforts of SC extents. For the purpose of perceiving the importance of non-financial and financial performance there is SC firms should incorporate with both measurements. Therefore, following hypotheses are developing for this purpose:

H_1: SCI practices has a significant relationship with the financial performance of restaurant industry of Indonesia.

H_2: SCI practices has a significant relationship with the non-financial performance of restaurant industry of Indonesia.

The Relationship between SSCM Practices and Organizational Sustainable Performance

Various studies have been conducted who investigated that how the SSCM practices could increase the organizational sustainable performance (OSP). A study conducted on the manufacturing firms by the Zailani, Jeyaraman, Vengadasan, and Premkumar (2012) who found that SSCM practices have positive and significant association with the sustainable performance, especially from the social perspective and economic perspective. In the same vein, a further study Hasan (2013) that was conducted on the five different firms also the positive effect of SSCM on the sustainable performance. Huatuco et al. (2013) confirmed that firms SSCM activities has significant and positive association with the sustainable performance. Towers, Perry, and Chen (2013) further used the explorative method to found the positive effect of SSCM on the brand of firms as well as also on the performance within the industry of the Scottish cashmere. Similarly, it is also found in the other studies that SSCM has a positive association with the sustainable performance (Luthra & Haleem, 2015). Thus after seeking this associate association it is hypothesized that:

H_3: SSCM practices has a significant relationship with the financial performance of restaurant industry of Indonesia.

H_4: SSCM practices has a significant relationship with the non-financial performance of restaurant industry of Indonesia.

The Relationship between Sustainable Supply Chain Management Practices, Supply Chain Dynamic Capabilities and business Performance

Previous researches on the dynamic capabilities has shown that it has a positive and significant effect on the business performance. It is further investigated by Eriksson (2014) that dynamic capabilities has the abilities to gain the competitive advantage and hence also provide help to gain the performance of the industry. Similar findings have been shown by the various other studies of (Menguc & Barker, 2005), As, currently the dynamic capabilities are relatively considered to be a new concept, and there is also a limited researches how it could effect to sustainable performance. A study explored by Brun,

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Caniato, Moretto, and Caridi (2013) on the luxury industry and found the positive impact of supply chain dynamic capabilities on the sustainable performance and on the new products of firms. On the other hand, various other researchers also analyzed this relationship through the various specific dimensions and found that strategic cooperation ability could help to increase the sustainable advantage of firm.

The SSCM would provide help to achieve the competitive advantage which are short term, which in the turn could be boost with the further development of the dynamic capabilities (Brun et al., 2013). The combination of both of SSCM and dynamic capability is limited with respective to empirical research. All kind of information in is provided by the customer orientation and participation in the SSCM practices (Dangol & Kos, 2014), and to some of the extent encourage the dynamic capabilities and improve the sustainable performance. In addition, Ernst and Kim (2002) further explored that cultivation and spillover of the firm's capability in global supply chain has shown that firms are able to gain the knowledge and resource's from various chain members and therefore has improved their capability (Leuschner et al., 2013). Moreover, Prieto, Revilla, and Rodríguez-Prado (2009) also elaborate that trust of the supply chain partner is considered to be a vital in dynamic capabilities of the firms.

It is proposed by Hazen, Cegielski, and Hanna (2011) that SSCM practices might not be considered as the source of competitive advantage. In addition, (Dubey et al., 2017) further argued that SSCM could impact on the competitiveness of the enterprise through the moderating linkage. With respective to the resource base view, dynamic capabilities could be often moderate the sustainable resources to improve the performance (Lin, Chow, Madu, Kuei, & Yu, 2005). Guiffrida, Datta, Lyn, and Min (2011) further investigated that dynamic learning capability could be more effectively moderate the impact of the SSCM practices on the performance. On the other hand, various other scholars also explored the relationship among the sustainable supply chain management , dynamic capabilities and business performance (Kannan & Tan, 2005; Sroufe & Curkovic, 2008). The researcher has started their work from the dynamic and proposed that the relationship of the supplier has a positive effect on the flexibility of the production and optimization of the product, hence improve the sustainable performance. They further also confirmed the combined effect of dynamic capabilities within the supplier and firm efficiency relationship. Thus based on the previous discussions, it is hypothesized that:

H5: SCDC significantly moderates in the relationship of SCI and financial performance of restaurant industry of Indonesia.

H_6: SCDC significantly moderates in the relationship of SCI and non-financial performance of restaurant industry of Indonesia.

H7: SCDC significantly moderates in the relationship of SSCM practices and financial performance of restaurant industry of Indonesia.

H_8: SCDC significantly moderates in the relationship of SSCM practices and non-financial performance of restaurant industry of Indonesia.

The above discussion has become the foundation of the current study framework.

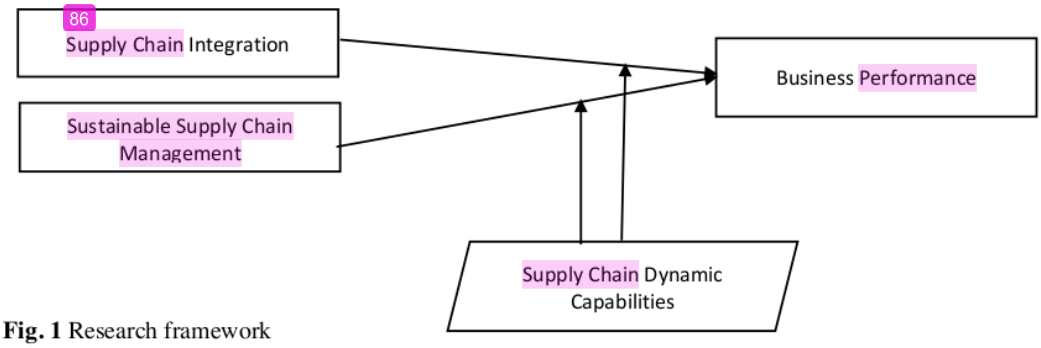

Fig. 1 Research framework

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Research Methodology

The present study is cross sectional and correlational in nature because the data has been collected on time. A quantitative approach through using the self-administered questionnaire was used to investigate the relationship between the exogenous, moderator and endogenous variable in the restaurant industry of Indonesia. The primary data for the current study has been collected by using the five point Likert Scale from strongly agree=1 to strongly disagree=5. For measure all the variable the questionnaires were taken from the extant literature or studies. Five items for the SSCM practices has been adopted from the various studies (Hammervoll, Jensen, & Beske, 2012; Pagell & Wu, 2009; Reefke & Sundaram, 2017; Reuter, Foerstl, Hartmann, & Blome, 2010). Similarly, five items have been adopted for the supply chain dynamic capabilities (Dangol & Kos, 2014; Jiangtao, Yibin, & Minqiu, 2017; Klassen & Vereecke, 2012). In addition, the supply chain integration was measured by three dimension. Each dimension was measured by ten items which were adopted from the study of (Abdullah, Abdullah, & Saleh, 2017). In addition, two type of performance indicators were used like financial and non-financial performance that was consists of four items. Among the four items two following items, sales growth and net profit were used for the financial performance, while two items, lead time and customer satisfaction were used for the measurement of non-financial performance. Moreover, for the data collection, questionnaire translated both in the English and Indonesia language. At the time of study, there were almost 900 supply chain managers were working in Indonesia five star hotels. The samples size 269 supply chain managers for the current study was selected by using the (Krejcie & Morgan, 1970) table which were working in the five star hotels in the Indonesia by using a simple random sample technique. There two sampling techniques which has been used in the methodology. One is probability and other is non probability. In the probability sampling, each element has an equal chance of occurrence while non-probability not equal chance of occurrence of the elements. The generalizability of the probability sampling is more as compare to non-probability sampling. Therefore, for the current study a simple random technique has been used so that the generalizability of findings could be increased (Sekran & Bougie, 2013). In this regards, total 269 self-administered questionnaires were distributed among the supply managers of five star hotels in the Indonesia. The total of 210 questionnaires were returned back from the hotels which is 78% response rate of the total. As a result, 210 responses were included for the analysis.

Data Analysis

Several prior studies adopted partial least square – structural equation modelling (PLS-SEM) approach in testing the direct and indirect relationship of variables (Buil, Martínez, & Matute, 2018; Lim & Loosemore, 2017; Singjai, Winata, & Kummer, 2018). Therefore, the research hypotheses of present research were assessed through PLS-SEM. The measurement and structural model of the study were assessed by using Smart PLS 3 software. PLS-SEM approach is appropriate in case of non-normal data or small sample size (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014).

Measurement Model of Study

To test the model, we used the structural equation modelling (SEM) technique through using the partial least squares (PLS) with Smart PLS 3.0 (Hair Jr, Hult, Ringle, & Sarstedt, 2016) software. This software is called a second generation software that could be used to test the complex model along with the latent variables. Table 1 has been showing the results which were obtain through the measurement of model. Before assessing the model, the construct reliability and validity must be established (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). In this regards, in the first process of SEM analysis the convergent and discriminant validity of the construct was being assessed. All of the measurement model results have been depicted the Table 1. The minimum recommended value for the factor loading is 0.5, for Cronbach's alpha > 0.70, for average variance extracted (AVE) > 0.5 and lastly for composite reliability (CR) is >0.70 (Hair, Hult, Ringle, & Sarstedt, 2014). The Table 1 has shown that construct has fulfilled the criteria of the following measurement for the assessment of the measurement model. In addition, for the measurement of the discriminant validity, there are three following criteria's, cross loadings, fornell and larcker criterion that should be greater than diagonal value, and HTMT in which

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

all the values should not exceed from 0.85 (Hair, Hult, Ringle, & Sarstedt, 2017). All of the discriminant values results are depicted the following Table 2 and Table 3.

Table 1: *Measurement Model of the study*

Measurement Scale	Items	Loadings	Cronbach's Alpha	AVE	CR
Sustainable supply chain management	SSCM1	0.707	**0.72**	**0.57**	**0.80**
	SSCM 2	0.826			
	SSCM 3	0.725			
	SSCM4	0.791	**0.73**	**0.52**	**0.76**
	SSCM5	0.542			
SC Dynamic Capabilities	SCDC1	0.729	**0.79**	**0.54**	**0.86**
	SCDC2	0.702			
	SCDC3	0.792			
	SCDC4	0.759			
	SCDC5	0.695			
Supplier integration	SI1	0.758	**0.75**	**0.50**	**0.83**
	SI2	0.748			
	SI3	0.697			
	SI4	0.747			
	SI5	0.578			
	SI6	0.890			
	SI7	0.780			
	SI8	0.830			
	SI9	0.902			
Internal integration	II1	0.745	**0.71**	**0.52**	**0.76**
	II2	0.723			
	II3	0.699			
	II4	0.892			
	II5	0.723			
	II6	0.673			
	II7	0.893			
	II8	0.652			
	II9	0.726			
	II10	0.786			
Customer integration	CI1	0.890	**0.810**	**0.830**	**0.705**
	CI2	0.672			

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	CI3	0.780			
	CI4	0.872			
	CI5	0.560			
	CI6	0.712			
	CI7	0.701			
	CI8	0.732			
	CI9	0.784			
	CI10	0.894			
Financial performance	FP1	0.891	**0.901**	**0.921**	**0.703**
	FP2	0.672			
Non-financial performance	NFP1	0.789	**0.892**	**0.905**	**0.801**
	NFP2	0.909			

Note: SSCM- Sustainable supply chain management, SCDC- SC Dynamic Capabilities, SI- Supplier integration, II- Internal integration, CI- Customer integration, FP-financial performance, NFP-non financial performance.

Table 2: *Fornell and Larcker Criterion for Discriminant Validity*

	SSCM	SCDC	SI	II	CI	FP	NFP
SSCM	**0.755**						
SCDC	0.436	**0.722**					
SI	0.522	0.437	**0.736**				
II	0.434	0.51	0.563	**0.709**			
CI	0.353	0.686	0.407	0.472	**0.890**		
FP	0.230	0.453	0.530	0.630	0.510	**0.921**	
NFP	0.520	0.201	0.431	0.341	0.231	0.206	**0.892**

Note: SSCM- Sustainable supply chain management, SCDC- SC Dynamic Capabilities, SI- Supplier integration, II- Internal integration, CI- Customer integration, FP-financial performance, NFP-non financial performance.

Table 3: *HTMT Analysis for Discriminant Validity*

	SSCM	SCDC	SI	II	CI	FP	NFP
SSCM							
SCDC	0.536						
SI	0.422	0.337					
II	0.634	0.601	0.632				
CI	0.353	0.486	0.307	0.572			
FP	0.230	0.553	0.430	0.630	0.510		
NFP	0.520	0.201	0.231	0.341	0.231	0.206	

Note: SSCM- Sustainable supply chain management, SCDC- SC Dynamic Capabilities, SI- Supplier integration, II- Internal integration, CI- Customer integration, FP-financial performance, NFP-non financial performance.

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Direct Effect

After the assessment of the measurement model, the researchers have applied the PLS-SEM analysis has applied for testing the hypothesis. The model is consisting of two dependent variables i.e. financial performance, non-financial performance (dependent variable) having R^2 0.30, 25 and Q^2 0.15, and 12 respectively (see Table 6) that establish the substantiality of the Model. Table 4 presents the results of PLS bootstrap algorithms that confirms the significant direct relationship of sustainable supply chain management (SSCM) on financial performance (FP) ($\beta = 0.205$, t value = 3.18, p value = 0.002), and on non-financial performance (NFP) is ($\beta = 0.385$, t value = 6.41, p value = 0.000). In addition, the supply chain integration also has positive and significant impact on financial performance (FP) ($\beta = 0.357$, t value = 5.57, p value = 0.000). Moreover, the direct also shown that SCI also has positive and significant impact on non-financial performance (NFP) restaurant industry of Indonesia. Thus, considering direct relationship, all the hypotheses are supported in this study. These results are consistent with studies of (Hasan, 2013; Huatuco et al., 2013), who found the SSCMP as a significant predictor of performance in various countries. Particularly in Indonesia, SSCM practices will help to avoid purchasing of products that can result in environmental degradation (Ching & Moreira, 2014). Consequently, it enables the organizations to improve their financial performance (Kannan & Tan, 2005) by improving profits and sales through sustainability activities (Paulraj, Lado, & Chen, 2008).

Table 4: *Direct Effect*

Hypothesis	Beta	S.E	T Value	P Value	Decision
SSCMP-> FP	0.205	0.065	3.179	0.002	Supported
SSCMP -> NFP	0.385	0.060	6.403	0.000	Supported
SCI -> FP	0.357	0.064	5.571	0.000	Supported
SCI->NFP	0.347	0.060	5.562	0.001	Supported

Note: SSCM- Sustainable supply chain management, SCI- Supply chain integration, FP-financial performance, NFP-non financial performance* Significance level = 0.05

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

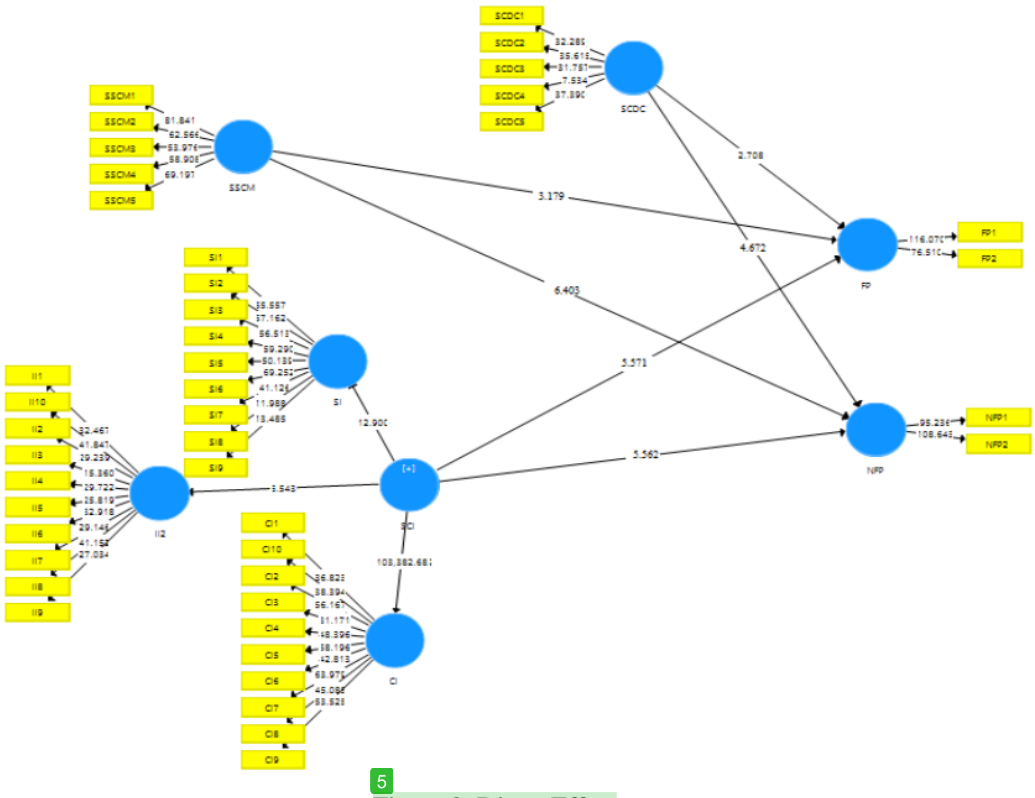

Figure 2. Direct Effect

Testing Indirect Moderating Effect

The research model hypothesized that supply chain dynamic capabilities moderates on the relationship of sustainable supply chain management (SSCM), supply chain integration (SCI) and business performance (BP) of the restaurant industry of Indonesia. The moderation test was employed by using the product indicator calculation approach. This approach was employed as per the suggestion of the Hair, Hult, Ringle, and Sarstedt (2017), who recommended that when the objective of study is whether is that moderating variable significantly moderates in the relationship of exogenous and endogenous variable. For this purpose, to test the moderation hypotheses, this study has used (Baron & Kenny, 1986) criteria to determine whether the moderation condition is exist.

The findings of the moderation (see Table 5) inferred that SC dynamic capabilities moderates the relationship of SSCMP with FP (β = 0.230, t value = 5.19, p value = 0.000), non-financial performance (NFP) (β = 0.125, t value = 3.10, p value = 0.002). In addition, the supply chain dynamic capabilities (SCDC) also significantly moderates on the relationship of SCI and both perspective of performance which is financial (β = 0.115, t value = 2.86, p value = 0.004 and non-financial performance (β = 0.117, t value = 2.89, p value = 0.003). This shows that higher level of SCDC in the business is considered to be more significant in the relationship of SSCM practices, supply chain integration (SCI) and business performance (BP) of the Indonesia restaurant industry. These results replicate the findings of several prior studies (Clifford Defee & Fugate, 2010; Paulraj et al., 2008); who found the significant indirect role of SC dynamic capabilities in enhancing organization's performance through SSCM activities. These findings not only provide the mechanism for enhancing organization's performance, but will also

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

motivate the managers to adopt the SSCM practices to enhance their competitive strength and overall business performance.

Table 5: ***Indirect Effect***

Hypothesis	Beta	S.E	T Values	P Values	Decision
SCDC*SSCMP-> FP	0.230	0.044	5.191	0.000	Supported
SCDC*SSCMP -> NFP	0.125	0.040	3.10	0.002	Supported
SCDC*SCI -> FP	0.115	0.040	2.859	0.004	Supported
SCDC*SCI->NFP	0.117	0.050	2.890	0.003	supported

Note: SSCM- Sustainable supply chain management, SCDC- SC Dynamic Capabilities, SCI- Supply chain integration, FP-financial performance, NFP-non financial performance* Significance level = 0.05

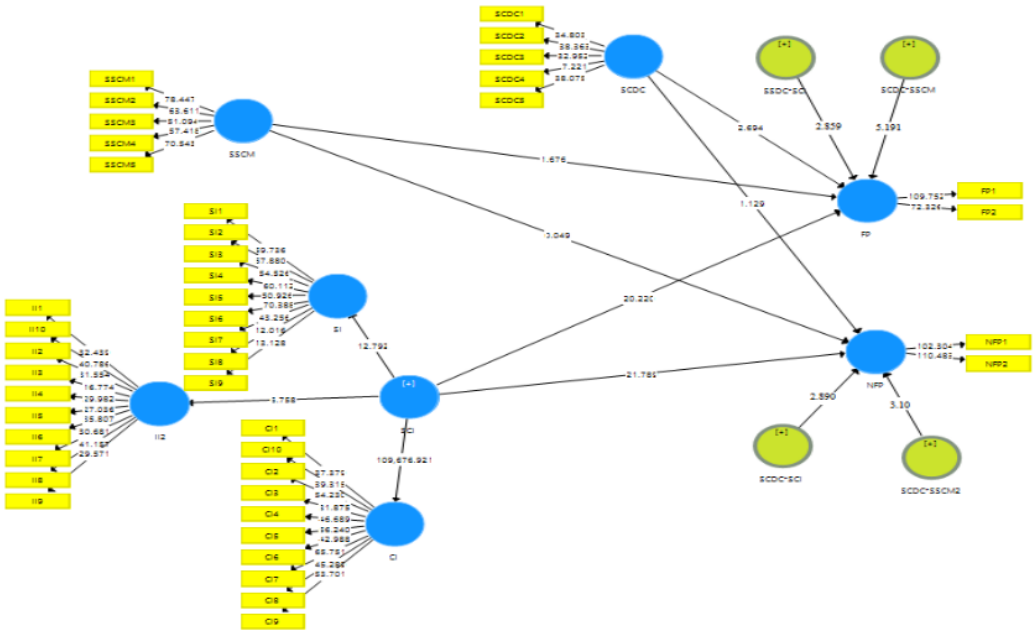

Figure.3 Moderating Effect

Table 6 Predictive Relevance and R^2 of the Model

Endogenous variables	R^2	Q^2
Financial performance	0.30	0.15
Non-financial performance	0.25	0.12

Conclusion

ISSN 1869-0459 (print)/ ISSN 1869-2885 (online)

The presents study contributes to the existing literature in several ways. First, it provides the empirical evidence of the relationship among the sustainable supply chain management (SSCM), supply chain integration (SCI) and business performance (BP) of Indonesia restaurant industry that strengthen the findings of prior studies (Hoejmose & Adrien-Kirby, 2012; Saenz, Koufteros, Touboulic, & Walker, 2015). Second, this study is amongst the few that explore the SSCM practices and SCI relationship with organization's performance in developing countries specifically Indonesia. It also extends the literature and provide generalizability to the findings of prior studies that focused on developed countries (Silvestre, 2015). Finally, our findings provide empirical support to indirect effect of SC dynamic capabilities in the association of SSCM, SCI along with the business performance and adds knowledge to the existing literature.

The present research provides considerable implications to the practitioners specifically related to restaurant industry. First it provides the mechanism of enhancing BP through the SSCM practices and SCI. Second, it encourages the managers to adopt SSCM by establishing it link with overall business performance from past studies. This will motivate them and enhance their confidence in implementing sustainability activities in their existing SCM system. Finally, this research will help the restaurant managers in enhancing their competitive advantage through taking a proper initiative on the sustainable supply chain management (SSCM), supply chain integration (SCI) and business performance (BP). This research has some limitations since it has a cross-sectional design and the data obtained make inferences about the responses at one time only. However, a longitudinal study is preferred to assess change in responses at different point of time and to establish the causal relationships among variables. Furthermore, the data was collected from Indonesia restaurant SC managers. Thus, future research should enlarge the sample and balance the number of purchasing and other managers, to conduct a comparative analysis between two groups of managers. Moreover, this study uses parcel sum of squares or multidimensional construct using in this study to draw the overall conclusion about latent variables. Therefore, it is recommended that the prior studies should analyze the whole model by focusing on each dimension of the construct.

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The Moderating Effect 0f Supply Chain Dynamic Capabilities on the Relationship of Sustainable Supply Chain Management Practices, Supply Chain Integration and Business Performance

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