

**INDUSTRY POLICY EFFECTS ON NAMIBIA'S ECONOMIC GROWTH**Emilia Landa Shikomba\*<sup>id</sup>, Elizabeth Elias\*\*, Sirorat Ruttanawijit\*\*\*

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**Abstract**

*This paper investigates a relationship between economic growth and industrial policy. The methodology employed in this work is the Autoregressive Distributed Lag (ARDL) Model. In addition, the bound cointegration test and Error Correction Model were conducted (ECM). This research estimated the economy of Namibia wherein the industrial policy is narrow and appears to be the second sector contributing to economic growth. The results indicate a significant positive relationship between industrial policy and economic growth. The government may seek to create a favorable business climate and subsidize private firms as well as to reform the labor market and use low-cost technologies to produce products and maintain sustainable economic growth. An action-designed industrial policy will strive to promote manufacturing activities and increase economic growth.*

**Keywords:** industrial policy, economic growth, Namibia

**JEL:** O11, O14

**1. Introduction**

The government's role is to implement industry-shaping policies that ensure that markets benefit the entire country. When markets are able to enhance overall capacity to produce goods and services within a country, output growth, or economic growth, emerges. According to Mazzucato *et al.* (2019, p. 427), economic growth seems to begin increasing when an industrial policy is market-shaping. Market-shaping industrial policy aims to establish regulatory organizations to evaluate markets to avert industrial development problems.

A well designed and regulated industrial policy is perceived as a tool of hope for employment, economic growth, and sustainability because it

fosters competition and a cooperative environment between government and business. Aiginger (2014, p. 9) emphasized that industrial policy should be structural, to be able to encourage developing countries to diversify their economies to stimulate exports rather than prevent imports, similarly to promote competition rather than protect unprofitable domestic firms. As a result, a well-designed industrial policy reform has a positive effect on economic growth (Aghion *et al.*, 2015, pp. 1-32). However, due to the complexity of the industrial policy system, it may be associated with failures and uncertainty (Mazzucato *et al.*, 2019, p. 433). Although different scholars have researched the impact of industrial policy on economic growth (Chen & Xie 2019; Aghion *et al.*, 2015; Farla 2014; Criscuolo *et al.*, 2012), there seems to be limited research on industrial policy's effect on economic growth in Namibia. Therefore, this study aims to analyze the relationship between industrial policy and economic growth in Namibia to address the research gap under study.

Industrial policy is an essential tool for policymakers to boost economic growth (Chen & Xie, 2019, p. 1). The concern is that industrial policy faces challenges such as high-cost commitment, technological change, and political conflicts that impact the manufacturing sector (Chang & Andreoni 2020, p. 3). On the other hand, investments in manufacturing industries have been negatively compressed by macroeconomic policies due to high interest rates when borrowing capital to invest in (Chang & Andreoni, 2020; Lee *et al.*, 2012). Aghion *et al.* (2015, p. 24) explain that industrial policy aimed at competitive industries to boost economic growth. If industrial policy aims to reduce unfair competition in the market, it can prompt an increase in government intervention, resulting in complementary market-oriented

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institutions and economic growth in the long run (Lee *et al.*, 2012, p.719). A different positive contribution of industrial policy is the ability to minimize monopoly business by allowing innovative firms to enter the markets (Aghion *et al.*, 2015, p. 24). In the process, manufacturing sectors contribute significantly to economic growth by producing intermediate goods for a wide range of industries in countries (Kathuria & Raj, 2013; Szirmai & Verspagen, 2015).

In comparison of industrial policies between developing and developed countries, the industrialized countries' industrial policies are systemic processes aligned to other policies and the entire economic structures. In contrast, developing countries' policies are not aligned with other policies and the whole economic system (Aiginger, 2014, p.11). Aiginger (2014, p. 6) explains that, based on product-cycle and trade theory, the least developed countries have a competitive advantage in manufacturing low-cost goods and services compared to developed countries. Several authors suggest that if policymakers in developing countries could build manufacturing hubs like in developed countries, increased economic growth may possibly be achieved through industrial policy (Aiginger, 2014; Chen & Xie 2019; Pianta *et al.*, 2020). Thus, governments, third parties, and the private sector can work together to enact industrial policies that improve economic growth (Mazzucato *et al.*, 2019, p. 434). This can be achieved if government subsidizes private companies to produce goods and service in a country in order to increase employment, investment, and production growth (Bernini & Pellegrini 2011; Cerqua & Pellegrini, 2014; Criscuolo *et al.*, 2019). Improvements in industrial policy set up often help low and middle-income countries upgrade their economies (Chang & Andreoni 2020, p. 2).

Namibia is a small, middle-income state that faces challenges of industrialization and economic growth due to its size and small economic activities. Namibia's economic growth has been a significant concern in recent years. The study of Rosendahl (2010, p. 1) indicates that the struggle of Namibia to foster new economic activities started after the financial crisis. While in recent times, the

International Monetary Fund (2019) points out in its report that the real gross domestic product (GDP) of Namibia declined in 2017 and continued to decline in 2018. Also, one of the newspapers in Namibia reported that in the second quarter of 2019, the Namibian economy shrank by 2.6 percent and performed worse for the 11th consecutive quarter without economic growth (The Namibian, 2019). There is an indication that Namibia's economic growth is struggling to pick up today. In this study, we question the relationship between economic growth and industrial policy, which is measured by manufacturing industry activity.

Namibia Ministry of Trade and Industry (2012) industrial policy asserts that the manufacturing industry in Namibia is too narrow and the production structure lacks diversity, which exposes the economy to exogenous shocks. In the case of Namibia's manufacturing industry, Aghion *et al.*, (2015, pp. 1-32) explain that the government can implement an industrial policy that includes a model that protects infant industries and also which is innovation-driven. The issue with Namibia's industrial policy is the lack of assessment of how effective the policy is at all times. This is because, in the meantime, the Namibian government has stated that it will intervene in the market as required for economic management. Since then, the government believes that the private sector is the engine of economic growth and job creation (Namibia Ministry of Trade and Industry 2012). In the study on industrial policy in Namibia by Rosendahl (2010, p. 39), it is suggested that the Namibian government should use industrial policy to promote economic growth through structural reforms to more sustainable activities that boost growth. Furthermore, the government may encourage cooperation to mass-produce low-cost consumer goods like textiles, shoes, and automotive parts.

The literature reveals that the empirical evaluations of industrial policy's effect on economic growth are limited, therefore the literature is scarce. The results of the relationship between industrial policy and economic growth have mixed results. Some authors find a positive and negative relationship between the two variables.

Several authors believe that industrial policy can promote economic growth (Aghion *et al.*, 2015; Chen & Xie, 2019; Farla, 2014; Szirmai & Verspagen, 2015). Kathuria and Raj (2013, p. 403), found a positive and negative relationship between industrial policy and economic growth. The issue found by authors when studying the variables there is data limitation or availability, and is influenced by other factors (Bernini & Pellegrini, 2011; Cerqua & Pellegrini, 2014). Moreover, there is a lack of evidence on interventions measured by previous empirical studies in developing countries' industrial policies (Lane 2020, pp. 1-26). As a result, we question if the industrial policy has an impact on economic growth. For example, when is it necessary for the government to intervene in a market to eliminate unfair competition? The relationship has not been thoroughly studied in Namibia, and our research aims to contribute to the existing literature. Hence, to assess the industrial policy and economic growth in Namibia, our study used one variable as an independent variable compared to previous quantitative studies that used multiple independent variables. This study aims to fill the gap by analyzing the effect of industrial policy on economic growth in Namibia using time series from quarter data time series in EViews 9.0 software from the period of 2008:1–2009:2.

The coefficients of a dependent and independent variable were estimated using the Autoregressive distributed lag (ARDL) model. Certainly, the short and long-run empirical findings reveal a significant positive relationship between industrial policy and economic growth. Moreover, when economic growth is a dependent variable, this study shows that the model has a long-run equilibrium relationship with industrial policy. We also analyzed the error correction model (ECM) diagnostic test, which showed that the model is stable. Finally, the findings show a significant positive relationship between Namibian industrial policy and economic development and that expanding the industry sector through industrial policy reform helps improve economic growth.

This proceeding reveals how the paper is structured: Apart from the introduction,

section two summarizes an array of industrial policies and economic growth literature. The third section covers the research methodology for the ARDL model of Namibia's data. The findings are outlined in the fourth section, and section five is the conclusion. Lastly, section seven is the list of references associated with this work.

## 2. Literature review

The ARDL model is important for forecasting as well as extracting long-run and short-run relationships. Kripfganz & Schneider (2018, p. 18), indicate that the bounds test in ARDL estimates the cointegrating relationship within the variables. In this study, we used the ARDL model to investigate the impact of industrial policy on economic growth in Namibia.

This study examines the literature on the relationship between economic growth and industrial policy, although many authors focus on high-income countries. However, there is a limited empirical study on the relationship between economic growth and industrial policy in Namibia. For instance, Chen and Xie (2019, pp. 1-19) examine the impact of industrial policy on economic growth in China during the 2003 to 2015 period. This study utilized regression analysis on panel data from different cities. They investigated and empirically tested the hypothesis, which suggested that industrial policy positively impacts economic growth. Empirical findings show that industrial policy has a positive significant impact on China's economic growth. Another study by Farla (2014, pp. 257–282) examines the relationship between industrial policy and economic growth in 56 different countries using time series from 1995 to 2009. The study discovered that industrial policy has a significant positive relationship with economic growth in middle-income countries. However, industrial policy does not affect economic growth performance in free-market countries.

Based on the literature, industrial policy is expected to be positive, and profound industrial policies are expected to be effective, because there is a theoretical relationship between economic growth and industrial policy.

In the case of China, Aghion *et al.* (2015, p. 3) use the Ordinal Least Squares approach to investigate the impact of industrial policy and competition on economic growth. For example, the Lerner Index was used to investigate industrial policy (Aghion *et al.*, 2015, p. 3). The authors found that industrial policies positively significantly impact productivity growth, particularly in competitive sectors. The authors suggest that government assistance can foster economic growth to a larger degree when it focuses more on competitive sectors and diversifies firms that benefit from the state fund, rather than only certain firms that benefit. While a study conducted in the United Kingdom by Criscuolo *et al.* (2012, pp. 26-27) evaluated the relationship between industrial policy and total factor productivity, the authors conclude that industrial policy has no significant impact on total factor productivity (Criscuolo *et al.*, 2012, pp. 26-27).

Bai & Wu (2018, pp. 223-232) study investigated how hollowing exacerbates uncertainty in the implementation of industrial policy in China. The augmented Dickey-Fuller (ADF) test, diagnostic tests, and the ECM examined the relationship between industrial hollowing and Shanghai's economic growth from the period January 2003 to February 2017. The study's findings show that imports and Shanghai's industrial Hollowing Index factors positively correlate with economic growth. However, land costs, labor costs, and fixed asset investment have a negative impact on Shanghai's economic growth. The authors suggest that developing countries establish new manufacturing industries with comparable capacity to developed countries, to increase competitiveness, capital return, and GDP. The study also argues that expanding the national economy is required for manufacturing firms to obtain lower interest rate loans to develop or purchase new technology (Bai & Wu 2018, p. 231). Another study, by Pianta *et al.* (2020), focuses on changes in manufacturing production in Europe following the 2008 financial crisis. The study assessed the possibility of finding a new European industrial novel approach that is able to achieve economic recovery in the region through effective innovation. The authors noted that when the European Union gets involved in industrial policy actions and

decisions, the effectiveness of industrial policy is reduced and is unable to stimulate economic growth in Europe.

When investigating industrial policy interventions, Lane (2020, p.20) emphasized that measuring industrial policy interventions is more accessible and more important than focusing on policy evaluation issues. Thus, intense government policy interventions are more likely to improve economic growth (Lee *et al.*, 2012, p. 720). Also, if developing countries' governments consider establishing regulatory institutions to oversee and reduce uncertainty in production inputs, and if governments reduce unfair competition practices, establish dependable financial services, invest in human-related technical skills, and create sufficient industrial infrastructure, they can boost economic growth (Lee *et al.*, 2012, p. 723). In addition, the intervention of the government in industrial policy might promote collaboration with private sectors to reduce tensions and improve the economy's industry structure (Lee *et al.*, 2012, p. 728).

Based on these studies, we can assume that the relationship between economic growth and industrial policy can be either positive or negative, with the impact remaining unclear. The literature supports the notion that developing countries have a competitive advantage in industrial policy utilization. In Namibia, industrial policy has a positive effect on economic growth.

### 3. Research methodology

#### 3.1 Data

The ARDL model was used in this study to examine the effect of industrial policy on economic growth. The dependent variable in this study is real GDP growth, whereas the independent variable is industrial policy (IP). Real GDP growth is a proxy for economic growth, whereas industrial policy is a proxy for manufacturing industry activity. The Namibia Statistics Agency time series was used to forecast the relationship between the variables: GDP figures for the second quarter of 2019. Namibia's economic time series were utilized in this study and span the years 2008:1

to 2009:2. The data in this time series is at constant 2010 Namibia million-dollar exchange rates. GDP data was transformed to natural logarithmic form (LGDP) and raw data was utilized in the IP model. Table 1 summarizes the descriptive statistical results for the study's variables. IP has a smaller mean and variance than GDP.

Table 1. *Descriptive statistical analysis*

Variables	GDP	IP
Maximum	28302.12	3027.12
Mean	23979.66	2608.43
Minimum	17990.22	2231.43
Std. Dev.	3182.171	187.07
Observations	46	46

Source: Authors' calculation

### 3.2 Unit root test

Time series are fundamental in forecasting and economic research. As a result, time series employ a random process to extract data meaning from past, present, and future values. When testing time series, the mean, variance, and covariance of the dependent variable and regressor remain constant over time. As a result, they are classified as stationary, which is critical for the variables being studied. Wu *et al.* (2016, p.2) point out that non-stationary time series result in spurious regression, which results in inaccurate forecasts and erroneous conclusions. The unit root obviates time series that move in tandem due to equilibrium factors, despite the fact that they have unit roots or trends (Kripfganz & Schneider, 2018, p.65). Shrestha and Bhatta (2018) indicate that the initial step in data processing while examining unit root in data is to display the graph to assess stationarity. The second stage is to verify stationarity using unit root tests, and the third step is to allow statistical tests to make accurate modeling decisions.

#### 3.2.1 The Augmented Dickey Fuller test (ADF)

The ADF is a widely used unit root testing tool. The ADF test concept is based on the Ordinary Least Squares (OLS) approach for calculating T statistic test critical values. ADF is based on a lag term and an uncorrelated random term. The null and alternative hypothesis tests are used to evaluate the data. Stationary time series models are those that reject the null hypothesis

(Shrestha and Bhatta, 2018, p. 74). By comparison, nonstationary models are those that do not reject the null hypothesis. The approach for nonstationary time series is distinct from the methodology for stationary time series. By utilizing initial differences in nonstationary variables, ordinary least squares or vector autoregressive models can offer unbiased stationary estimates. However, differentiating method disrupts the long-run relationship of variables (Shrestha & Bhatta, 2018, p. 75).

### 3.3. Cointegration test

Economically significant cointegration connections exist because they can identify the presence of long-run equilibrium between variables. Cointegration is a technique that can be used to solve nonstationary problems. Cointegration is a statistical technique that is based on the null and alternative hypotheses. When performing Johansen test on variables integrated of order one and I (1), the Johansen test is invalid and insignificant compare to using bound test therefore the Johansen test should be avoided and, the bound test should be used (Nkoro & Uko 2016; Shrestha & Bhatta 2018). The ARDL's bound test establishes variables' long-run connections that incorporate initial differences and levels using bound F-statistics. Variables in the model might be endogenous or exogenous. Thus, the bound test results contain two crucial values. If the F-statistics is larger than the crucial value for upper bound 1(I), cointegration exists. There is no cointegration in the equation if the F-statistics are smaller than the lower bound 1(0) critical value. Inconclusive F-statistics values are ones that fall between the crucial value's upper and lower limits. The ARDL method is more precise than the Johansen method as indicated by Nkoro and Uko (2016, p. 87).

### 3.4 Autoregressive distributed lag model

The regressor can forecast the dependent variable in a time series regression model. An ARDL model is distributed for a single predictor variable and incorporates lags for the dependent variable. Additionally, including additional regressors enhances the model and eliminates false regression (Nkoro & Uko,

2016; Wu *et al.*, 2016). Estimates for the ARDL model are calculated using ordinary least squares (OLS) (Shrestha & Bhatta, 2018, p. 79). A basic ARDL model can be written as follows:

$$Y_t = \alpha + \beta x_t + \partial z_t + e_t \quad (1)$$

### 3.5 Error correction model (ECM)

The model's equilibrium has economic implications, changes in X influence changes in Y and the occurrence of disequilibrium in the past. The term "error correction" can be either negative or positive. ECM employs both long and short-run dynamics. Because of stationarity, ordinary least square methods estimate the error correction term. T- test determines the difference between the terms in the model (Shrestha & Bhatta, 2018, p. 78).

### 3.6 Diagnostics tests

The standard OLS model stability tests are normality, serial correlation, and heteroskedasticity for estimated model robust and bias. The OLS estimation white noise process is stationary in the model (Shrestha & Bhatta 2018, p. 80).

This study examined the link between industrial policy and economic growth in Namibia using an ARDL approach. Economic growth is measured by comparing actual gross domestic product (GDP) from one era to the next. GDP is a monetary measure of the value of the goods and services produced in each country.

The model includes two explanatory variables: industrial policy and the regression model's error term. While a variety of factors contribute to economic growth, we focused on industrial policy in this study. Manufacturing industry activities assess industrial policy by measuring all finished goods and services produced in Namibia's manufacturing industries over a specific period.

Assume Namibian manufacturing industries produce more finished goods and services instead of importing producible goods and services. In that case, the industries' profits will rise, increasing GDP.

The establishment of new manufacturing industries boosts competitiveness, capital return, and GDP (Bai & Wu, 2018, p. 231).

## 4. Results

### 4.1 Unit root

ADF was used to test for unit roots in each time series in this study. Table 2 summarizes the test findings. After the initial difference, the GDP variable is converted into a natural logarithm. IP is stationary at this level.

Table 2. Unit Root Test

Variable	ADF results
	Null: Unit root (Non-stationary) Alternative: No unit root (Stationary)
LGDP	Non-Stationary at Level 1 <sup>st</sup> Difference Is Stationary
LIP	Stationary at Level

Source: Compiled by the authors using EViews 9.0 software

### 4.2 Cointegration test

Table 3. ARDL Model: Bound test using constant model

Variable	F-statistic value	Critical value I0 Bound /I1 Bound	Cointegration	Test
LGDP	1.15	4.49 (I0)	No	ARDL
IP	10.10	5.73(I1)	Yes	ECM

Source: Compiled by the authors

As shown in Table 3 above, there is no cointegration in the equation when LGDP is the dependent variable.

The bound test F-statistic (1.15), which is smaller than the crucial value of the (4.49) lower limit 1(0), shows that the equation is non cointegrated.

When industrial policy is used as a dependent variable in an equation, cointegration occurs because the F-statistic (10.10) is larger than the crucial value of the (5.73) upper bound (1).

Table 4. *ARDL: Short run model regression results*

Variable	Coefficient	SE	p-value
LGDP(-1)	0.865	0.059	0.00***
IP	8.05E-05	4.39E-05	0.07*
C	1.149	0.552	0.04**
R-squared	0.883		
Adjusted R-squared	0.877		
F-statistic	158.75		0.00
Sample period	2008Q1-2019Q2		
Durbin-Watson stat	2.54		

Source: Compiled by the author using EViews 9.0 software

Table 5. *ARDL: Long run model regression results*

Variable	Coefficient	SE	p-value
IP(-1)	0.247	0.151	0.10*
LGDP	580.760	201.900	0.00***
C	-3885.010	1863.278	0.04**
R-squared	0.338		
Adjusted R-squared	0.306		
F-statistic	10.742		0.00
Sample period	2008Q1-2019Q2		
Durbin-Watson stat	1.90		

Notes: \*\*\*, \*\*, and \* respectively significant at 1%, 5%, and 10% levels.

Source: Compiled by the author using EViews 9.0 software

The results are robust because R2 is smaller than Durbin Watson statistics indicating the regression is not spurious. This result indicates that industrial policy evaluation coefficients are positively significant in the model, which is consistent with the result (Chen & Xie, 2019; Farla, 2014).

R2 demonstrates that an industrial policy explains 88.3 percent of the variation in economic growth in the short run. External factors account for the remaining 11.7 percent of the variation in economic growth.

The model's adjusted R2 and F-statistic probability value indicate that it is a good fit for Namibia. This implied that the independent variables were important enough to explain economic growth.

When industrial policy is a dependent variable in the model, the long-run relationships among variables are estimated. We can see from the table that there is a long-run relationship between industrial policy and economic growth.

Our results also show that the economic growth coefficient in the model is positive and significant. R2 indicates that independent variables explain 33.8 percent of the variation in the dependent variable in the model in the long run. External variables, on the other hand, explain industrial policy with 66.2 percent. If economic growth increases by 1%, industrial policy increases by 580.78 percent in the long run, when other factors remain constant.

Serial correlation Lagrange multiplier (LM), normality test and a heteroskedasticity test performed on all models. With significance higher than 5%, all the results satisfy the basic assumptions of the classical linear regression model.

Table 6. *ARDL: ECM results*

Variable	Coefficient	SE	p-value
C	9.77	24.911	0.69
DIP(-1)	0.136	0.220	0.53
DGDP(-1)	-89.814	527.228	0.86
ECM(-1)	-0.886	0.279	0.00***
R-squared	0.338		
Adjusted R-squared	0.288		
F-statistic	6.811		0.00
Sample period	2008Q1-2019Q2		
Durbin-Watson stat	1.95		

Notes: \*\*\*, \*\*, and \* respectively significant at 1%, 5%, and 10% levels.

Source: Compiled by the author using EViews 9.0 software

To obtain the residues in Table 6, we used a long-run model using IP as the dependent variable, and we estimated the ECM. Furthermore, we utilized unconstrained VAR to identify the optimal lag selection; in this study, the model used one lag of the Akaike info criterion.

As a result, the ECM consequence is both negative and significant. ECM suggests that in the long run, the entire system can return to equilibrium at 88.6 percent, within the 5%

significance lines, the cumulative sum of recursive residuals.

The ECM model diagnostic test confirms that the Normality test is normally distributed. The Breusch-Godfrey Serial Correlation LM Test results show that there is no serial correlation. No heteroskedasticity presence, ARDL ECM is stable and all the results are robust.

## 5. Discussion

This study's time series were integrated at order 1 and order 2, determining the ARDL methodology to analyze the relationship between economic growth and industrial policy. The ARDL model estimates the long-run and short-run relationship between the variables under consideration (Shrestha & Bhatta 2018, pp. 71–89). This study discovers a significant positive relationship between economic growth and industrial policy. Our short-run results show that industrial policy explains 88.3 percent of the variation in economic growth. However, there is no evidence of cointegration among the variables in this study in the short run.

According to our ARDL long-run analysis, there is a positive relationship between economic growth and industrial policy. In the long run, economic growth has a 33.8 percent impact on industrial policy. ECM reveals the whole system is 88.6% adjusted equilibrium in the long run. The models are all reliable with normal distribution, no-serial correlation, and heteroskedasticity.

Economic growth is facilitated by the market value of all finished goods produced within a country; we expected the results to have a positive sign. Our results indicate that a 1% change in industrial policy increases economic growth only by 0.00008% in the short run, which may not have a big impact to the Namibian economy in terms of high unemployment and poverty, which the country currently faces. The finding may result from the narrow and inflexible labor market in the manufacturing sector, as stated by Rosendahl (2010, p. 1).

Nonetheless, a 1% economic growth change increases industrial policy by 580.76% in the long run, meaning that the results suggest that

in the long run, industrial policy is beneficial to the Namibia economy as manufacturing industries enter the markets. Therefore, it is important for the Namibia government to strengthen the industrial policy to promote the increase of manufacturing industries, thus increasing economic growth because profit earned in business contributes to GDP and reduces unemployment. In addition, the establishment of new manufacturing industries boost competitiveness which will increase innovation and economic growth and reduce the cost of goods (Bai & Wu, 2018, p. 230).

We contributed to analyzing the statistically significant association between economic growth and industrial policy in the short and long run. However, our research has limitations such as the sample size and only one explanatory variable in the model. Another limitation is that we measured industrial policy with manufacturing activities in the Namibia economy. However, various factors can be used to measure industrial policy.

## 6. Conclusion

We analyzed the linear relationship between economic growth and industrial policy using quarterly time-series data using an ARDL model. We used the bound test in our empirical investigation to determine the cointegration relationship between variables. Also, we estimated short-run and long-run relationships between economic growth and industrial policy, whereby each of the variables is exogenous and endogenous on each other.

Our empirical result finds a significant positive association linking industrial policy and economic growth in the short - run. New manufacturing industry establishment improves economic activities. An increase in the private manufacturing companies' subsidy funding from the state stimulates an increase in manufacturing employment (Aghion *et al.*, 2015; Criscuolo *et al.*, 2019).

Our model is robust to the Namibia economy and cannot be generalized to different countries or regions. In this study the causation results between the variables are not estimated in our research. The industrial policy is vital in

the Namibian economy. Our results suggest it is crucial for Namibia to invest in manufacturing activities using well-actions detailed industrial policy to improve GDP and unemployment.

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