



Shiraz University

Journal homepage: [ijes.shirazu.ac.ir](http://ijes.shirazu.ac.ir)



## Impact of Development Strategy on Economic Growth of Iran: New Structural Economics Perspective

Seyedrohollah Ahmadi Hajiabadi<sup>a\*</sup> , Jabbar Ul-Haq<sup>b</sup>, Hubert Visas<sup>c</sup>

a. Department of Economics, Damghan University, Damghan, Iran.

b. Department of Economics, University of Sargodha, Sargodha, Pakistan.

c. School of International Trade and Economics, University of International Business and Economics, Beijing, China.

### Article History

Received date: 09 November 2021

Revised date: 14 May 2022

Accepted date: 25 May 2022

Available online: 05 September 2022

### JEL Classification

O11

O14

O47

O53

### Keyword

New Structural Economics

Comparative Advantage

Development Strategy

ARDL Bounds

Iran

### Abstract

The present paper aims to test the new structural economics hypothesis in regard to the effect of development strategy on economic growth in a country that has witnessed an eight-year war and has suffered severe sanctions i.e., Iran. According to the new structural economics, if a country adopts a comparative advantage defying strategy, it will have poor growth performance. In contrast, to have a strong economic growth, it should employ a comparative advantage following strategy. The technology choice index (TCI) is utilized as a proxy of development strategy. Based on this indicator, increasing of TCI means that a country is conducting a comparative advantage defying strategy. The relationship is estimated by the ARDL bounds test approach. To run the model, the technology choice index (TCI), and a variety of control variables were included in the model. Hence, time-series data was collected from reliable databases for the period 1979-2018. The results in which their stability is checked, reveal a negative effect of adopting a comparative advantage defying strategy on economic growth, which supports Lin's hypothesis. In other words, it is shown that by increasing TCI, economic growth is declined significantly. So, to achieve economic growth, a kind of development strategy should be adopted that is based on pursuing comparative advantages.

### Highlights

- Three main sides of New Structural Economics theory as the third wave of development economics theories are: comparative advantage, market mechanism and government.
- The effect of development strategy on economic growth of Iran is examined through NSE perspective.
- NSE hypothesis in regard to the negative impact of comparative advantage defying on economic growth is accepted for Iran.
- Iranian policy makers should follow comparative advantage strategy to achieve economic growth.

\* [seyedahmadi@du.ac.ir](mailto:seyedahmadi@du.ac.ir)

DOI: 10.22099/ijes.2022.42192.1795

© 2021, Shiraz University, All right reserved

## 1. Introduction

Does encouraging developing countries to establish industries and use technologies that are in line with advanced economies lead them to achieve economic growth? In other words, have developing countries been successful in reducing their gap with developed countries by the policy of import substitution as old structural economics claims? Could the implementation of economic policies, such as economic liberalization and privatization, generally referred to as the Washington Consensus, significantly contribute to the growth of developing countries by reducing their gap with developed nations?

The experience of adopting the old structuralist strategy in parts of Africa, Latin America, and South Asia in the 1960s and 1970s has resulted in nothing but widening the gap between countries (Lin, 2011). Also, the consequences of neoliberal policies concerning growth were at best controversial (Loayza et al., 1999; Easterly, 2002; Lin, 2015; Lin & Wang, 2020). The failure of these two approaches in practice, along with the remarkable success of several developing countries, triggered efforts to introduce the third wave of development called the new structural economics (NSE) as pioneered by Lin (2011).

As stated by Lin's theory, the optimal industrial structure of a country is determined by the inventory of its production factors. To upgrade the industrial structure, it is necessary to upgrade the inventory structure of production factors and improve the relevant infrastructure. According to the NSE, the best means to improve the inventory structure of a country's production factors is to develop its industries based on its comparative advantages determined by the inventory structure of the production factors. Pursuing comparative advantages and market mechanisms, besides active involvement of government in easing structural change, are the key facets of the new development theory. Accordingly, Lin argues that economic growth occurs when the government chooses a strategy to pursue its comparative advantage. Officials would not achieve their goals by choosing any opposite strategy (Lin, 2011; Lin & Wang, 2017).

The first empirical study in this field can be considered the study of Lin and Chang (2009), who investigated the effect of strategy selection by governments on economic growth among 122 different countries during the period 1962-1999. The results showed that the application of strategies that defied comparative advantages had had a negative and significant effect on the growth performance of the selected countries. Gnanngnon (2020) answered to this question whether comparative advantage following (CAF) strategy and aid for trade (AFT) are complementary in achieving higher level of structural change in production. This study covered 81 countries during the period 1996-2016. The results indicated that aid for trade could upgrade structural change only in countries that had adopted the CAF strategy. Olanrewaju et al. (2020) combined new structural economics and new institutional economics by the inclusion of technology choice index (TCI) along with interacted variables of institutional quality and financial inclusion and real GDP per person in Nigeria to examine the influence of institutional quality on inclusive growth over the period 1998-2017. They

employed the ARDL bounds test approach and used different explanatory variables to explain the variations in real GDP per person employed (RGDPE). According to their results, TCI positively and significantly affected RGDPE, which is contrary to Lin's NSE theory. Siddique (2014) examined the effect of development strategy on the poverty level of 113 countries for the years 1980-2000. By using the TCI variable as a proxy of development strategy, the result indicated that adopting the comparative advantage defying (CAD) strategy was related to higher level of poverty. In other words, it is shown that government should employ CAF strategy to reduce poverty incidence. Bruno et al. (2015) tested the new development theory among 160 economies with a special reference to transition economies. As with other empirical studies, they used TCI to determine the type of development policies. The results indicated that the type of development policies of governments had had an important impact on the economy's growth. As well, they examined the effect of financial distortions on the relationship between development strategy and economic growth. It was shown that by reducing financial distortions to a moderate level, the negative effect of TCI on economic growth is mitigated. Chen and Xie (2019) empirically investigated the effect of industrial policy on economic growth in NSE's point of view by using Chinese Law and Regulation Database. The study result is consistent with studies that show positive impact of industrial policy on growth.

While a vast number of empirical studies have been done to test different theories in different aspects of Iran economy, testing a theory that proposes a new development strategy to achieve strong growth specially for a country like Iran that have not documented its development strategy until now, is very important. Although, NSE theory has been tested in different individual countries but testing it in a country that has endured 8-years war and international sanctions for decades would be interesting. A review of the studies on the NSE theory for the case of Iran shows that Dehghan Khavari et al. (2017, a) and Dehghan Khavari et al. (2017, b) have examined different aspects of new structural economics and determined leading sectors based on the framework proposed by new structural economics. However, these two local studies have not tested the theory for Iran empirically. Hence, the present study aims to test the new structural economic theory in a special country i.e., Iran. It is intended to examine the effect of TCI, as an indicator of the government's development strategy, on Iran's economic growth over the period 1979-2018.

The paper is structured as follows. Firstly, we review the basis of the new structural economics besides the association between TCI and economic growth. Also, this part contains a review of the development strategy in Iran. Secondly, the data and methodology employed in the study are discussed. Finally, the paper is concluded by presenting the results and conclusions.

## 2. A Review of the Related Literature

### 2.1 Development Strategy

Before introducing the new structural economics by Justin Lin, two major development strategies had been followed by countries all over the world. According to the first approach, which is called "first wave of development thinking", countries were following an old structural approach during the 1960s and 1970s. The old structural approach advocates development policies that go against an economy's comparative advantage and advise governments in developing countries to develop advanced capital-intensive industries through direct administrative measures and price distortions. Some developing countries, such as Brazil, India, Egypt, Ghana, and the Republic of Korea, established advanced industries similar to those of high-income countries to catch up with advanced economies like Japan and the USA. Although they were initially successful, they quickly fall into crisis and stagnation (Lin & Wang, 2020).

In the 1980s, development thinking changed to neo-liberalism. In this context, our meaning of neo-liberalism is limited to some key policies such as privatizing, liberalizing, and stabilizing. Based on this thinking school (that is called "second wave of development thinking"), developing countries were encouraged to promote competition by deregulating domestic markets, deepening financial markets, minimizing trade protectionism, and so on. Not only did this approach increase the income gap between middle-income and high-income countries, but its validity was also challenged by urgent global issues like climate change, the concentration of company power and development in emerging technology industries, the expansion of inequality at a global level, and financial crises (Collier, 2018; Gertz & Kharas, 2019; Lin & Wang, 2020).

Over the past decade, World Bank Senior Economist Justin Lin has introduced the third generation of development economics called the New Structural Economics. His proposed development strategy is a combination of two previous development strategies. The NSE approach is unique in the selection of economic sectors to support. In "Comparative Advantage: The Silver Bullet of Industrial Policy", Lin and Monga discussed the circumstances in which industrial policy, or state intervention in the economy as a whole, is likely to fail or succeed.

They argue that in most cases, industrial policies fail due to strategic mistakes in choosing goals that are not consistent with the level of a country's development and its endowment structure in the same period. According to the lessons learned from the experience of choosing impracticable development goals, economic strategies are recommended to be in line with the comparative advantage of the country (determined by the endowment structure at the time of strategy design). This statement is the foundation of the new structural economy (Lin & Monga, 2013).

The NSE theory has a dynamic view on the economic structure of the economy instead of a static view. The recommendation of the NSE theory is that development strategies must be consistent with the structure of resources because the economic structure, as well as the structure of technology, industry, and soft

and hard infrastructure (endowments) of a country at a given time, changes over time. The initial resource endowment and its structure at any given time determine the total income of the economy and the relative price of the production factors at that time. Accordingly, the comparative advantage of an economy can be determined based on the sectors with the lowest costs of production factors globally. The optimal industrial structure is a function of the endowment structure. In these conditions, if an enterprise with normal management makes a reasonable profit in an open and competitive market without receiving any government subsidy, the enterprise will have economic viability. A company is viable when its technology and industry are compatible with the greatest opportunity cost advantage of the country and the economy has the soft and hard infrastructure required by the industries (Lin, 2017, 2012). In such a situation, when viable enterprises are formed in the economy, an economic surplus will be created and it will lead to the improvement of the structure of resource inventory. As a result of this strengthening in resource inventory, a new optimal economic structure is defined, which itself requires the application of a new development strategy tailored to the circumstances. Under these conditions, we will observe dynamic economic growth.

NSE answers one of the main controversies in development economics, which is whether a country's economic strategy should follow that country's comparative advantage or be formulated with no regard to it. The comparative advantage defying strategy is attractive to political leaders and people in less developed countries, including the intellectual class because a majority of people directly witness the difference between the structures of industry and technology in developed countries and what exists in their countries and are aware of the fact that there is a correlation between the structure of industry and technology and per capita income. Based on NSE, although this strategy has a beautiful appearance, it is deceptive and very expensive. To implement such a strategy, the government must pay large subsidies to companies that are unable to operate without government support and are unable to compete with foreign companies. Not only does this type of support not lead to the creation of surpluses and profits by these firms, but it also diverts available resources from the productive sectors and further reduces the economic surplus. As a result, there is no improvement in the structure of economic resources and therefore it is not possible to have the desired economic growth to reduce the distance with developed countries. Hence, the recommendation of NSE is to follow the comparative advantage of the country. Comparative advantage following strategy refers to the set of guidelines that facilitate the development of industries and the advancement of technology following the endowment structure of the economy at each stage of development (Lin, 2011; Lin & Wang, 2020).

Lin and Liu (2004) introduced an indicator called TCI to test the basic idea of NSE that if a country pursues its development strategy according to its comparative advantage, it will have economic growth and reduce its gap with developed economies. This index is defined as:

$$TCI_t = \frac{AVM_t/LM_t}{GDP_t/L_t} \quad (1)$$

where  $AVM_t$  is the value-added of the country's industries at time  $t$ ,  $GDP_t$  is the aggregate value-added of the country at time  $t$ ,  $LM_t$  is the number of workers in the manufacturing industry, and  $L_t$  is the total number of workers in the country. If the government adopts a CAD strategy, TCI in this country is expected to increase because pursuing this strategy requires the government to grant exclusive positions to firms in the product market to overcome the problem of firms remaining in priority sectors, and by paying credits and raw materials, their investment and operating costs reduce. Such policy measures increase AVM. On the other hand, since investing in priority industries requires more capital and less labor, the deduction form in the equation will be larger. Therefore, the value of the TCI index is used as a measure of the degree to which the CAD strategy is used in a country (Lin & Chang, 2009).

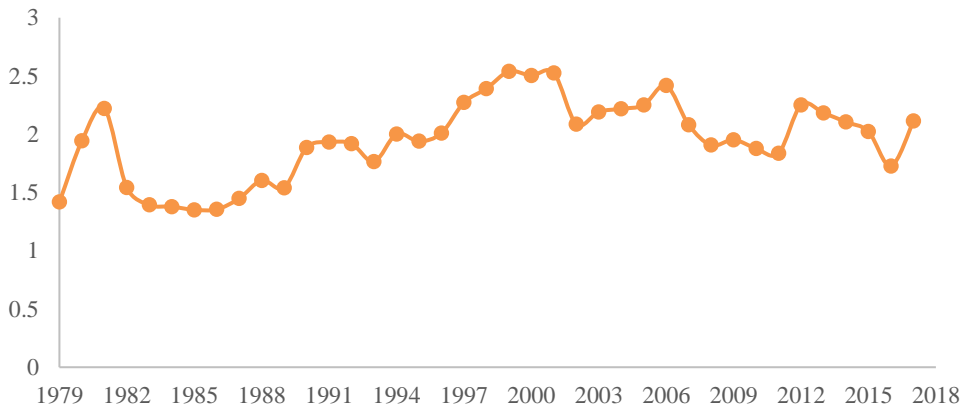
## 2.2 Iran and Development Strategies

Naturally, the right path is that after formulating the development strategy, operational plans are prepared based on it and implemented. However, this does not mean that a plan cannot be implemented until a development strategy document has been developed. Unfortunately, despite various studies in Iran to formulate an industrial development strategy, it has not yielded any results. Planning in Iran began with the approval of the first development plan in 1948, but it has always been faced with challenges. During the Iran-Iraq war, attempts to prepare a program faced enormous challenges and the program prepared in 1981 was removed from the agenda of the parliament due to some disputes. Although planning was put on the agenda after the war and at the beginning of reconstruction, the occurrence of currency and inflation shocks made its implementation face many problems. However, one of the most important economic measures taken in Iran is to prepare five-year development plans starting from 1989 (after the end of the Iran-Iraq war) with the approval of the first program. So far, 6 programs have been approved in Iran, and each of them pursued specific goals according to the specific conditions that existed in each of the periods (Barmaki, 2015). During this period, despite the development of the programs, governments have adopted a strategy outside the program, and based on this, it can be said that government policies were not consistent with the programs (Rajabpour, 2019).

Theoretical and practical evaluation of Iran's development plans shows that Iran's economy faces several serious challenges such as the flawed structure of the country's banking system, government economy, and economy's dependence on oil. Perhaps, the roots of these three challenges can be sought in neglecting to formulate appropriate industrial strategies. In fact, before the Sixth Development Plan, there had been no industrial prioritization or industrial development strategy in development policies and planning in Iran. Efforts to achieve two goals of improving the country's position in the world (a combination of exports, product

diversification, and value-added) along with avoiding wasting limited government resources and directing support and policies to activities that have the greatest impact on government target variables (employment, deprivation elimination, elimination of environmental hazards, etc.) made the Ministry of Industry be obliged to formulate industrial priorities based on the Sixth Development Plan (Rajabpour, 2019).

Since the key variable of the study is development strategy in which TCI is utilized as a proxy for that, we shed light on how it has evolved over the period 1979–2018. According to Figure 1, although TCI has been fluctuating during the studied period, three main trends can generally be traced. The first trend started in early 1979 when the first development plan was started by the end of the Iran-Iraq war. The second trend lasted from 1989 to 2001, which indicates that the strategies were mainly in opposition to the comparative advantage of the economy. The third trend can be seen from 2001 onwards, during which programs were moved towards following the comparative advantage in contrast to the previous period. While exploring the reasons and cause requires a separate investigation, this direction change may be due to the 8-year war, which forced the government to adopt policies contrary to comparative advantage but it's the approach was changed after the reconstruction.



**Figure 1. TCI trend in Iran, 1979-2018**

*Source: Author (2022)*

### 3. The Study Model

According to Lin (2012), the following econometric model is used to test the study hypothesis:

$$\text{Growth}_{i,t} = C + \alpha \text{TCI}_{i,t} + \beta X + \theta \quad (2)$$

Where X is a vector that includes control variables. This study uses time-series data of economic growth (Growth), development strategy (TCI), population (POP), capital (CAP) and sanction intensity (SAN) to explore the existence of

long-term and short-term relationship for Iran. Due to data access limitation, we selected the period 1979-2018 to do the study. To control the effect of war, a dummy variable (DUM) is also included in the model. Statistical data on these variables were collected from valid information sources, i.e., Central Bank of Iran, Statistical Center of Iran, and World Bank Development Indicators. Also, data for sanction intensity is collected from [Laudati and Pesaran \(2021\)](#).

A way to look at the long-term relationships between variables is the autoregressive distributed lag (ARDL) or bounds testing method that Pesaran, Shin et al. introduced and developed in 2001. The use of this strategy in the current investigation was motivated by the following benefits of the procedure. First, after selecting the model's ideal lags based on the Schwarz Bayesian Criterion (SBC), the cointegrating relationship can be evaluated using OLS. Second, although the presence of  $I(2)$  variables in the model is not recognized, it is irrelevant whether the variables are  $I(0)$ ,  $I(1)$ , or mutually co-integrated. Third, there is no evidence that the endogenous issue results in biased coefficients of acquired variables. Furthermore, the ARDL model is extremely effective and reliable when the sample size is small ([Ang, 2008](#)).

Based on this method, if we want to find out the long-run cointegration relationship between the two variables  $Y_t$  and  $X_t$ , we need to estimate the unconstrained error correction model (UECM):

$$\Delta Y_t = \beta_0 + \theta_{yy}Y_{t-1} + \theta_{xy}X_{t-1} + \sum_{i=1}^p \mu_i \Delta Y_{t-i} + \sum_{i=0}^p \tau_i \Delta X_{t-i} + \varepsilon_t \quad (3)$$

After making sure that the degree of stationary of any of the variables is not equal to 2 or higher, the critical values of F, estimated by [Pesaran et al. \(2001\)](#), are used. If the computational F statistic is greater than the upper limit value, the null hypothesis of no cointegration is not accepted, and if it is smaller than the lower bound, the hypothesis is confirmed. Also, if the F statistic is located between the two edges, the test is terminated with no result.

After the existence of a long-run relationship between the variables is ensured, the next step is to estimate the short-run and long-run models and analyze the results.

## 4. Empirical Results

### 4.1 Unit Root and Co-integration Tests

We use the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, two unit-root tests, to look at the degree of integration of the chosen variables. All of these tests have a unit root series as the null hypothesis rather than stationarity as the alternative. The findings demonstrate that all variables are either integrated at degree one, or stationary at level, i.e.,  $I(0)$ . The cointegration approach can be applied since all of the variables are integrated to a degree of one or lower.



**Table 1. Unit Root Tests**

Variables	t-statistics	Prob.	t-statistics	Prob.	
ADF Test					
	Level		First-difference		Order of integration
GROWTH	-4.56	0.00	-7.58	0.00	I(0)
TCI	-2.28	0.18	-6.27	0.00	I(1)
POP	-0.86	0.78	-3.36	0.01	I(1)
CAP	-0.72	0.82	-4.82	0.00	I(1)
SAN	-4.83	0.00	-13.57	0.00	I(0)
PP Test					
	Level		First-difference		
GROWTH	-4.47	0.00	-9.29	0.00	I(0)
TCI	-2.34	0.16	-6.30	0.00	I(1)
POP	-7.23	0.00	-1.36	0.59	I(0)
CAP	-0.68	0.83	-5.08	0.00	I(1)
SAN	-5.05	0.00	-14.22	0.00	I(0)

Source: Author (2022)

After ensuring that all variables are integrated at the level or at degree one, the ARDL bounds F-test is employed to investigate the existence of long-run relationships among the variables when Growth is used as a dependent variable. The results presented in Table 2 confirm the presence of a cointegration relationship since the F-statistic is significantly higher than the upper bound. So, economic growth (Growth), development strategy (TCI), population (POP), capital (CAP) and sanction intensity (SAN) are cointegrated in Iran over the period.

**Table 2. Bounds Cointegration Test**

Test statistic	Value	K
F-statistic	20.884	4
Critical value bounds		
Significance	I0 bound	I1 bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Author (2022)

Now that we are sure of the convergence relationship between the variables, when the economic growth is a dependent variable, we estimate the long-run and short-run coefficients. Table 3 presents the results using the ARDL estimator.

As the coefficient of error correction term (ECT) in the short-run model is negative and statistically significant, it is a confirmation of the long-run cointegration relationship between the variables and the reliability of the estimated coefficients in the long-run model. The estimated coefficient of ECT equals -2.48 and indicates that the return to long-run equilibrium occurs rapidly in the event of a deviation.

As it is mentioned in the literature review section, Lin shows that increasing TCI means a country is leaning to adopt a comparative advantage defying strategy and as a result will face a poor economic growth. In other words, he claims to have a negative sign for TCI. The regression result shows that TCI as the main variable of the study has negative sign and statistically significant at the 5 percent level. It means that the NSE hypothesis in Iran is accepted regarding the relationship between development strategy and growth performance. Also, the results of the control variables are as follows: 1) population variable does not have the expected sign although it significantly influences growth performance; 2) both capital and sanction variables have the expected signs with significant effect on growth.

**Table 3. Development strategy and economic growth, 1979-2018 Iran**

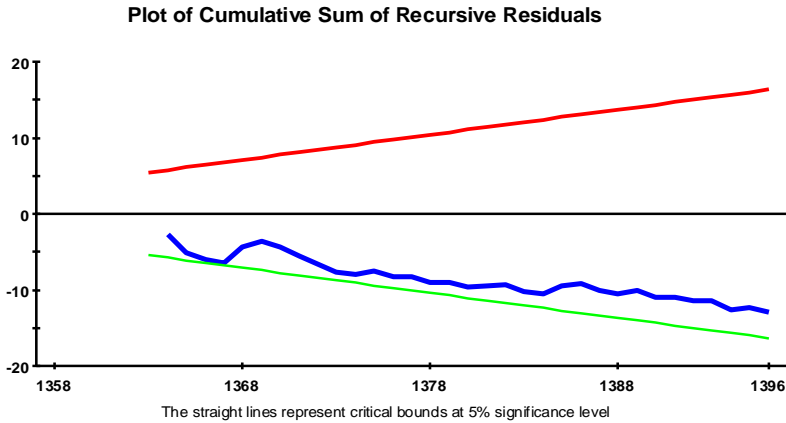
<b>Short-run estimates</b>				
Variable	Coefficient	Std. error	t-statistic	Prob.
D(GROWTH(-1))	0.79**	0.12	6.58	0.00
D(GROWTH(-2))	0.21**	0.09	2.40	0.02
D(CAP)	0.15**	0.01	7.87	0.00
D(POP)	-93.86**	22.16	-4.23	0.00
D(POP(-1))	108.30**	33.88	3.19	0.00
D(POP(-2))	-27.46*	16.17	-1.69	0.10
D(SAN)	-0.20**	0.04	-4.46	0.00
D(SAN(-1))	0.12**	0.05	2.44	0.02
D(TCI)	-0.12**	0.07	-1.72	0.09
D(DUM)	0.01	0.05	0.32	0.74
ECM(-1)	-2.48**	0.21	-11.68	0.00
<b>Long-run estimate</b>				
Variable	Coefficient	Std. error	t-statistic	Prob.
CAP	0.06**	0.00	10.45	0.00
POP	-0.82**	0.07	-10.51	0.00
SAN	-0.21**	0.02	-7.45	0.00
TCI	-0.05**	0.02	-1.74	0.09
DUM	0.00	0.02	0.33	0.74

Note:1. \*significant at 10% critical value, \*\* significant at 5% critical value.

Source: Author (2022)

#### 4.2 Stability and Diagnostic Tests

To evaluate the stability of the long-run parameters during the study period, the CUSUM test is employed. The plot of the CUSUM statistics within the critical 5 percent bounds, shown in Figure 2, confirms the existence of stability in the estimated parameters in the long-run model.



**Figure 2. Parameter's stability test (CUSUM)**

*Source: Author (2022)*

Diagnostic tests have also been performed for the model residuals. Table 4 presents the findings. Accordingly, the null hypotheses of the Breusch-Godfrey serial correlation LM test, ARCH Heteroskedasticity test, and Jarque-Bera Normality test are not refuted.

**Table 4. Residuals diagnostic tests**

Test	F-statistic/Jarque-Bera	Probability
Breusch-Godfrey serial correlation	2.385	0.117
ARCH-heteroskedasticity	0.001	0.974
Normality	0.304	0.859

*Source: Author (2022)*

#### 5. Concluding Remarks

The poor performance of conventional development policies and programs - the traditional structural economy and the Washington consensus - to reduce the income gap among countries throughout the world led to the introduction of the third wave of development thinking by Justin Lin as the new structuralist economics. The new development thinking opened up a new way for policymakers in different countries, especially developing countries, to reduce the income gap with developed ones. The main principle of the new structural economics is to pay attention on the economy's comparative advantage. If the

policymaker provides hard and soft infrastructure according to the resource's structure and supports the market mechanism to discover relative prices, industrial upgrading and improvements in the resource's structure will be witnessed. The result will be an increase in economic growth and a narrowing of the income gap with leading countries. Conversely, if a comparative advantage defying strategy is to be used, the limited resources available to the government must be used to provide financial support to firms that are not capable of surviving on their own in the economic system and competing with other firms. The results of this strategy are the inability to achieve economic surpluses, the waste of resources, and poor economic performance. Thus, the strong hypothesis in this theory states that if the economy pursues a comparative advantage following strategy, it will have a favorable economic growth performance.

Given that empirical studies that have been done so far in this field have used panel data, this study intended to test the hypothesis for the time series data of the Iranian economy during the period 1979-2018. The main reason of selecting Iran as a case study is related to the unique characteristics of the country. This country has endured 8-years war and sever international sanctions for decades. Hence, testing NSE hypothesis in such a country would be interesting.

A study on Iran's economy shows that the five-year development plans have been started since 1989. These plans have faced serious challenges, the most important ones being the lack of industrial strategy design and industrial prioritization. However, the trend of the TCI index indicates that until 2001, the country's economic policies were mainly of the CAD type, and then moved to programs aimed at achieving comparative advantage following. The question is how the TCI index has affected Iran's economic growth performance. For this purpose, TCI variable data was collected as the main variable along with a number of other control variables during the period 1979-2018. The existence of several advantages of the ARDL bounds model led to the use of this model to estimate the long-run relationship between economic growth and TCI.

The findings support the hypothesis of new structural economics for the Iranian economy. This result is inconsistent with [Olanrewaju et al.'s \(2020\)](#) finding. Therefore, it can be said that Iran's economy, despite facing a long war and the challenge of strong economic sanctions, can perform well in economic growth if it adopts policies that are consistent with the economy's comparative advantage. In other words, it is recommended to adopt the CAF strategy that policymakers have started since 2001 as well as providing industrial prioritization programs along with industrial development strategy. It is suggested that other studies examine other hypotheses of new structural economics about Iran's economy.

### **Author Contributions**

New structural economics is one theory that is not tested by researchers for Iran. Hence, the authors selected the topic to investigate it empirically. All authors have read and agreed to the published version of the manuscript.

### **Funding**

This research received no external funding.

### **Conflicts of Interest**

The authors declare no conflict of interest.

## References

- Ang, J. B. (2008). *Financial development and economic growth in Malaysia*. Routledge.
- Barmaki, A. (2015). *Pathology of development programs after the Islamic revolution*. Plan and Budget Organization of Iran.
- Bruno, R. L., Douarin, E., Korosteleva J., & Radošević, S. (2015). Technology choices and growth: Testing new structural economics in transition economies. *Journal of Economic Policy Reform*, 18(2), 131-152.
- Chen, J., & Xie, L. (2019). Industrial policy, structural transformation and economic growth: Evidence from China. *Frontiers of Business Research in China*, 13(1), 1-19.
- Collier, P. (2018). *The future of capitalism: Facing the new anxieties*. New York: Harper.
- Dehghan Khavari, S., Mirjalili, S., & Momeni, F. (2017, a). Industrial development strategy from perspective of new structural theory (based on experience of leading developing countries). *Majlis and Rahbord*, 24(91), 101-139.
- Dehghan Khavari, S., Mirjalili, S., & Momeni, F. (2017, b). Application of the new structural economics to Iranian economic development within the framework of growth identification and facilitation framework (GIFF) for determination of the leading sectors. *The Journal of Economic Policy*, 9(17), 233-268.
- Easterly, W. (2002). *The elusive quest for growth: Economists' adventures and misadventures in the tropics*. MIT Press.
- Gertz, G., & Kharas, H. (2019). *Beyond neoliberalism: Insights from emerging markets*.
- Gnangnon, S. K. (2020). Comparative advantage following (CAF) development strategy, aid for trade flows and structural change in production. *Journal of Economic Structures*, 9(1), 1.
- Laudati, D., & Pesaran, M. H. (2021). Identifying the effects of sanctions on the Iranian economy using newspaper coverage. *CESifo Working Paper No.* 9217.
- Lin, J. Y. (2017). Industrial policies for avoiding the middle-income trap: A new structural economics perspective. *Journal of Chinese Economic and Business Studies*, 15(1), 5-18.
- Lin, J., & Chang, H. J. (2009). Should industrial policy in developing countries conform to comparative advantage or defy it? A debate between Justin Lin and Ha-Joon Chang. *Development Policy Review*, 27(5), 483-502.
- Lin, J. Y. (2011). *From flying geese to leading dragons: New opportunities and strategies for structural transformation in developing countries*. The World Bank.
- Lin, J. Y. (2012). *New structural economics: A framework for rethinking development and policy*. The World Bank.

- Lin, J. Y. (2015). The Washington consensus revisited: A new structural economics perspective. *Journal of Economic Policy Reform*, 18(2), 96-113.
- Lin, J. Y., & Liu, M. (2004). *Development strategy, transition and challenges of development in lagging regions*. ABCDE: 197.
- Lin, J. Y., & Monga, C. (2013). *Comparative advantage: The silver bullet of industrial policy*. *The Industrial Policy Revolution I*, Springer, 19-38.
- Lin, J. Y., & Wang, Y. (2020). Seventy years of economic development: A review from the angle of new structural economics. *China & World Economy*, 28(4), 26-50.
- Lin, J., & Wang, X. (2017). The facilitating state and economic development: The role of the state in new structural economics. *Man and the Economy*, 4(2), 20170013.
- Loayza, N., Easterly, W., & Montiel, P. (1999). *Has Latin America's post-reform growth been disappointing?* The World Bank.
- Olanrewaju, G. O., Aremo, A. G., & Binuyo, B. O. (2020). Inclusive growth effects of institutional quality in Nigeria. *European Scientific Journal*, 16(1).
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289-326.
- Rajabpour, H. (2019). *Pathology of lack of industrial development strategy in Iran*. Islamic Parliament Research Center of The Islamic Republic of Iran.
- Siddique, A. B. (2014). *Comparative advantage defying development strategy and cross-country poverty incidence*. KDI School.