

The Causality Between Industrial Development and Economic Growth: A Case of Pakistan

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Abstract

Industrial sector is the paramount factor in the development of economic growth. This study has analysed the industrial pantomime in case of Pakistan. Times series data has been used for 40 years, from 1980-2020. Initially the data has been checked for stationarity, by applying ADF, test which proved that, all the indicators are stationary at level. This confirms that, we are allowed to apply OLS regression analysis for the desired results. The study concluded that there has been positive and significant relationship between industrial construction and economy activity of Pakistan. Only factor that, induces negative impact on the economic growth, is the excessive consumption of energy resources; growth of electricity, gas and water supply. Foreign direct investment indicated negative association with the economy, but also gives the insignificant results.

Keywords: Industrial Development; GDP; Energy Resources; FDI; Pakistan.

1. Introduction

In terms of purchasing power parity the economy of Pakistan ranks 47th in the world in nominal terms and 25th in the world (PPP). Pakistan's economy may be widely classified in 3 segments: agriculture, manufacturing or ministration precinct. The agribusiness accounts of about twenty one percent, industry nineteen percent as well as the services industry at about fifty three percent of GDP. In 2010 Pakistan does have a semi-manufacturing sector including fabrics, chemicals, cuisine, agribusiness or several sectors. Cement, fertilizer, edible oil, sugar, steel, tobacco, chemicals, equipment, food processing, textile and clothing manufacture were among Pakistan's significant industries. The cotton industry, which accounts for around 64 percent of overall exports and accounts for 40 percent of the workforce, is Pakistan's largest industry. Traditional products such as textiles and fibres, leather, food, and tobacco are the key sectors in terms of contribution to value addition, accounting for 43.2 percent in 1998 and 38.8% in 2007. All industries are dominated by the shares of such industries.

In terms of their part in the environmental deterioration in Pakistan, SMEs and major companies also are ignorant and negligent on the ground. Most of that is attributable by weak infrastructure competency, low environmental focus for taxation policy and insufficient allocation of forests, biodiversity, water and sanitation environmental protection resources. The long-term goal of sustainable economic growth without environmental degradation was established in the Mid-Term Development Framework (Ahmad et al., 2020). Its true success will be determined by how well environmental laws cover the National Environmental Quality Standards (NEQS) and whether or not lawbreakers are compelled to pay for harming the environment. While the Pakistani government must encourage the leather sector while also protecting the environment, there is a need for national environmental regulations on the business; local rules might be enacted to address the expanding tannery effluent problem.

In reality, municipal laws might assist certain industrial regions that are suffering from severe environmental harm. As illustration, The Korangi Industrial Area in Karachi, for example, has the biggest tanneries working in the leather sector and is also the filthiest, with "open drains and wastewater being discharged without treatment." In contemporary years, sectors including garments, textiles, cement and services have experienced substantial expansion in the country (such as mechanization, haulage, advertising, and finance). In particular, strong State

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engagement in transportation, communications, and life insurance services remains, with far more than 50% of GDP plus significant workforce in Pakistan. (Wikipedia, Economy of Pakistan 2010).

1.1 Importance of Industrial Sector

It is credited to industrialization that has threatened deprivation yet has raised life standard of people in advanced nations such as the USA, the United Kingdom, Canada, Japan and Germany. This is why in the Far East nations, described as "new industrializing countries" the wave of industrialization has also invaded (NICs). It was our desire to begin or continue this structural transformation. As well for the aforementioned purposes, the relevance of industrialization is clear to our country: Expanded job prospects, expansion of salary as well as productivity, Modernization in agribusiness, Auxiliary & linked industries, achieving macroeconomic and microeconomic of the economies, Industrialization contributes about economic and social transformations (Altshuler 2020).

2 Literature Review

Using quarterly national income and gross domestic product data from 1959 to 1992, Sabir and Ahmed (2003) studied the impact of structural adjustment policies on TFP and concluded that, while the average growth in the overall economy has declined from GDP and residential and non-residential investment, the average growth in the overall economy has increased from GDP and residential and non-residential investment. Results demonstrated that, but not because of GDP, residential investment does not, but because of GDP. They came to the conclusion that real estate leads and other forms of investments lag behind the business cycle. In the same econometric methodology (Granger Causation Test), Tse and Ganesan (1997) also employed quarterly data in Hong Kong to establish the causal association between construction flows and GDP. They discovered that GDP, rather than the other way around, drives the building flow. The influence of structural adaptations was explored by Sabir and Ahmed (2003). The TFP policy determined that, nonetheless, the total TFP average increase. In the pre-reform, the entire economy dropped by 2.8%. During the post-reform period (1988-2002), in (1973-88) to 0.7 per cent; It decreased from 5.9% to 1.9% in the manufacturing sector, Over these two eras, respectively. Furthermore, their data show that the relative contribution of TFP to the pre- and post-reform eras. Value added overall has fallen from 48% per year to 16% every year, while its contribution is contributed to manufacturing value decreased from 79% to 45 p. per year.

Hoque and Musa (2002) revealed that the price of Dhaka Bores IPOs (DSE), which was typically below 285,21 per cent, was between 1994 and 2001. In Malaysia, the price level in the era was 46.44%. For the period 1961-2001, IMF (2002) calculated TFP for Pakistan's whole GDP. The results show that the rise of TFP in the 1960s and the positivity of the 1970s and 1980s on average is negative. In the 1990s, meanwhile, growth dropped to only 0.6% annually. In addition, during this era, human and physical capital has predominantly supported GDP growth.

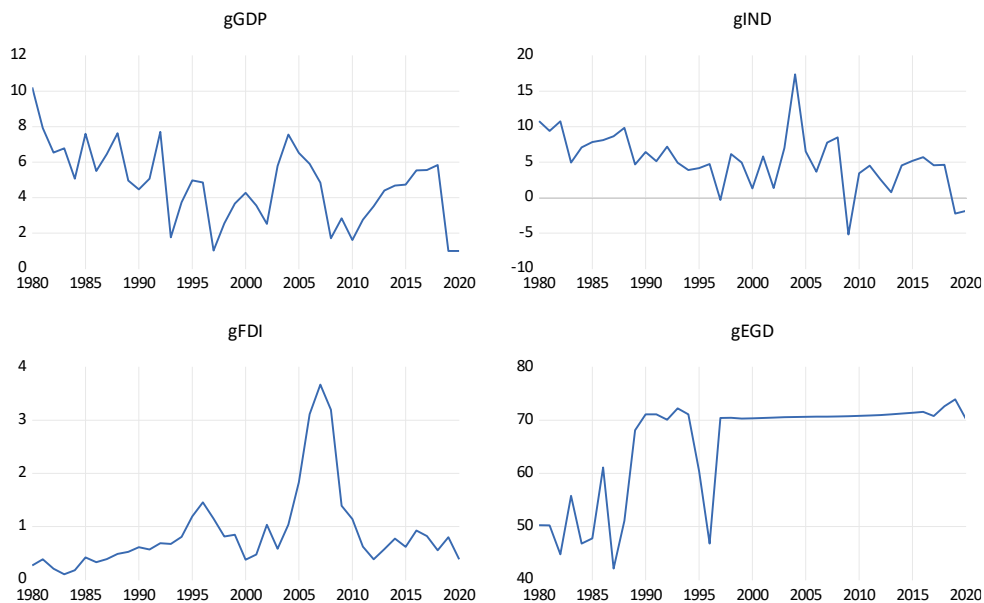
Pasha (2021) pointed out that manufacturing growth in the TFP sector showed a persistent trend in 1973-98, with average annual growth of TFP declining from 9.4% over 1968-83 to only a slight 1.4% during 1993-98 per annum of TFP contribution to overall economic growth of 55% over the years 1968-83 decline 16%. They also determined that the manufacturing sector has played a major role in the TFP expansion, of the 4.6% TFP increase annual in the period from 1973 to 1998, 1.8% being a participation from intellectual resources. For the period 1951-91, Wizarat (2002) calculated the large-scale production factor total (TFP). Its results reveal that the TFP trend is growing. In addition, she found that TFP's contribution on average over the period, economic growth was negative (-27%), 1955-1991 era. Economic development was mostly driven according to her study by capital (88%) and work (40 percent).

During the period between 1992-1993 and 2001-2002, Ghosh and Maji (2004) investigated the operating capital efficiency of the Indian cement industry. Instead of utilizing certain standard working capital management ratios to measure the effectiveness of working capital management, performance, use, and overall efficiency indices were determined. Establishing industry standards as the objectives of the efficiency level of each firm and testing the speed at which each company achieves this objective level of effectiveness over the research project. It has been observed that this time was not exceptionally good for India's cement industry as a whole. The relation of competitiveness as described in the existing ratio and cash cycle was experimentally explored by Eljelly (2004). A sample of Saudi Arabic enterprises from 1996 to 2000 had been researched. They found a large negative

association connecting firm financial performance, whereas a significant link was established among firm profitability and leverage.

3. Data and Research Methodology

In this section, we are going to brief the methodology and statistical techniques, that we are using in order to reach out the objectives of our study. As we are going to investigate, how industrial sector is influential to the economic growth of a country like, Pakistan. We all understand that, economic growth of country can be best described by the GDP, factor, so we took, GDP (% of growth), as dependent variable; growth of construction industry (IND), growth of electricity, gas and water supply sector (EGD) and foreign direct investment (FDI), as independent indicators.



In order to recognize the relationship between industrial sector and economy, secondary data for the year 1980 – 2020 has been fetched from world development indicators. Multiple studies have invested this association, we have applied ordinary least square regression model, for the desired results.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

$$gGDP = \alpha + \beta_1 gIND + \beta_2 gEGD + \beta_3 gFDI + \text{Error Term}$$

This is our proposed model, for linear regression analysis.

In this above equation we have the following indicators:

Y = Growth Rate in term of GDP

α = Constant term

IND = growth of construction industry

EGD = growth of electricity, gas and water supply sector

FDI = Foreign direct investment

e = Error Term

β_1 , β_2 and β_3 are the coefficient of independent variables

4. Results

The data, we have collected has been fed into e-views, for the analysis. Initially the variables are tested for their stationarity, in this case, we have applied ‘ADF’ test, the results of it hence revealed that, all the indicators are

stationary at level. As we have checked the stationarity of data, we have decided to move with the ‘OLS regression’ technique, to investigate the results.

Table 1. OLS Regression Results by using the Model

VARIABLE	COFFICIENT	T_STAT	P VALUE
Constant	7.561055	3.76666*	0.0006
gIND	0.303512	4.527286*	0.0001
gEGD	-0.063789	-2.216877**	0.0329
gFDI	-0.262723	-0.828081	0.4129
R ²	0.554168		
D.W	1.941724		
Significance level	5%		

*Stationary at 1%, ** Stationary at 5% significance level

The estimated equation of the model is:

$$gGDP = 7.561 + 0.303gIND - 0.063gEGD - 0.262723gFDI$$

R² = 55 %

Hence the explanatory power of the equation, is described by R², which shows that, 55% of the variation in the economy of Pakistan is being explained by the dependent variables.

The results of the regression analysis, revealed that, there is a positive and significant association between economic growth and industrial construction, in case of Pakistan. The coefficients indicates that, 1% change in the industrial construction, there’s been change of 30% in the economic activity. Moreover the results indicated that, growth of electricity has negative impact on the economic growth. Foreign direct investment also induces negative impact on the economic activity, but its impact is insignificant in the study.

The stability tests; (CUSUM) also revealed that, our model is stable during the regression.

5. Conclusion

This study has been utilized to investigate the industrial sector of Pakistan, and how the industry effects the economic activity. Time series data has been used, from 1980-2020, gathered from world development indicators. Before inquiring the results, the data has been tested for stationarity, hence proved stationary at level. This phase allows us to conduct analysis, by applying ordinary least square regression technique. The analysis has been done in e-views. The results of the current study, concluded that there has been positive and significant relationship between industrial construction and economy activity of Pakistan except growth of electricity, gas and water supply, which shows negative association with the growth rate. Foreign direct investment also moving against the trend, yet not significant in the results.

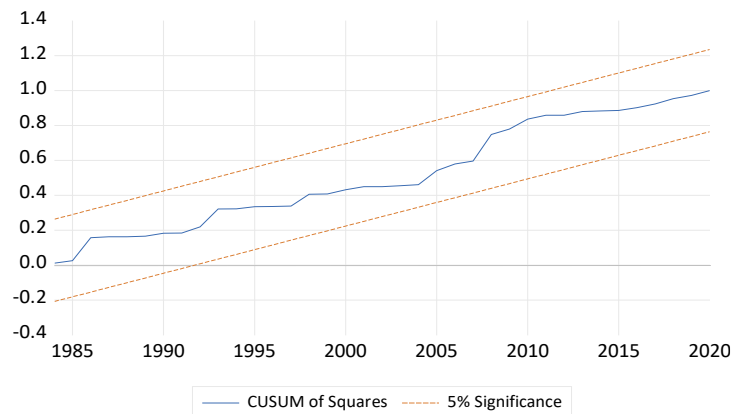


Fig. 1. CUSUM – Model Stability Test

Previous study, has also confirmed the results of the current study, as Khan (2008), investigated the linkage between industrial sector and economic growth, by applying ‘co-integration analysis’ they revealed that, there’s a strong and significant relationship between industrial construction and aggregate economic activity. The study also stated that, construction sector has major key role in moving the stable economy. Khan (2007) evaluated ‘foreign direct investment’ and ‘distribution of income’ for case of Pakistan and found that increased FDI would worsen the economy of Pakistan, as increased level of foreign investment Detroit the income distribution among general public, because it only focused capital intensive industries. Analysing the negative impact of growth and consumption of electricity and gas; Noor (2010) used panel data of Pakistan to know the short-run and long-run relationship between energy consumption and economic growth, hence concluded that, use of access electricity benefit the economy in short-run, but it worsens the economic activity in the long-run. So, the results of our study, has been confirmed by the previous literature.

6. Recommendations & Policy Implications

The study recommends some of the policy implications, in order to improve the industrial sector of Pakistan. Small businesses and industries are less streamlined and needed to be coherent by proper policies and guidance. Government and other authorities should focus on small businesses, to establish their links in production. In the current era, construction industry should be the first priority to boost the economy. As infrastructure plays a key role in the development of the country. It would be appreciating able to use the scarce resources in a best possible way, less consumption of gas and other energy resources, in order to save the environment. Government should make some reliable and credible policies for foreign direct investments, to remove the gap of income distribution.

For boosting the economy of Pakistan, government should provide incentives for generating new businesses and industries for producing international quality outputs. Authorities should develop infrastructure and other ancillary facilities.

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