



ECONOMIC IMPACT OF BANK CREDIT TO INDUSTRIES IN INDIA

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Abstract

India has witnessed enormous investments in new technologies that aided in expansion of manufacturing and service industries. In the recent past, the Indian Industries are combating the slowdown in sales while squeezing the economic growth of the country. Conventionally, firms in emerging economies depend on the banking industry to accomplish the capital requirements. Besides, the robust nature of institutions assist in curbing information asymmetry problem compared to individual lenders. This paper attempts to scrutinize the relationship between bank credit and its impact on industry growth. Secondary data for period of 30 years (from 1987 to 2017) is collected from RBI bulletin. The analysis indicates that there is no distinct pattern with Industry GDP growth however, the bank credit towards industries show continuous decline from 2005 onwards. The computing compounded annual growth return revealed significant decrease during 2014-19. The growth slackened to single digit due to demonetization, non-performing assets and introduction of new tax systems coupled with economic slowdown across the globe. The long run relation of Industry GDP and Bank credit to industry was proved at 10 percent significance level using Co integration test. The unidirectional relationship between variables has been identified by conducting Granger's Causality. Thus it is concluded that bank credit influences industry GDP with lag of one year.

Keywords: Economic Growth, Banking Industry, Co integration, Granger Causality.

Introduction

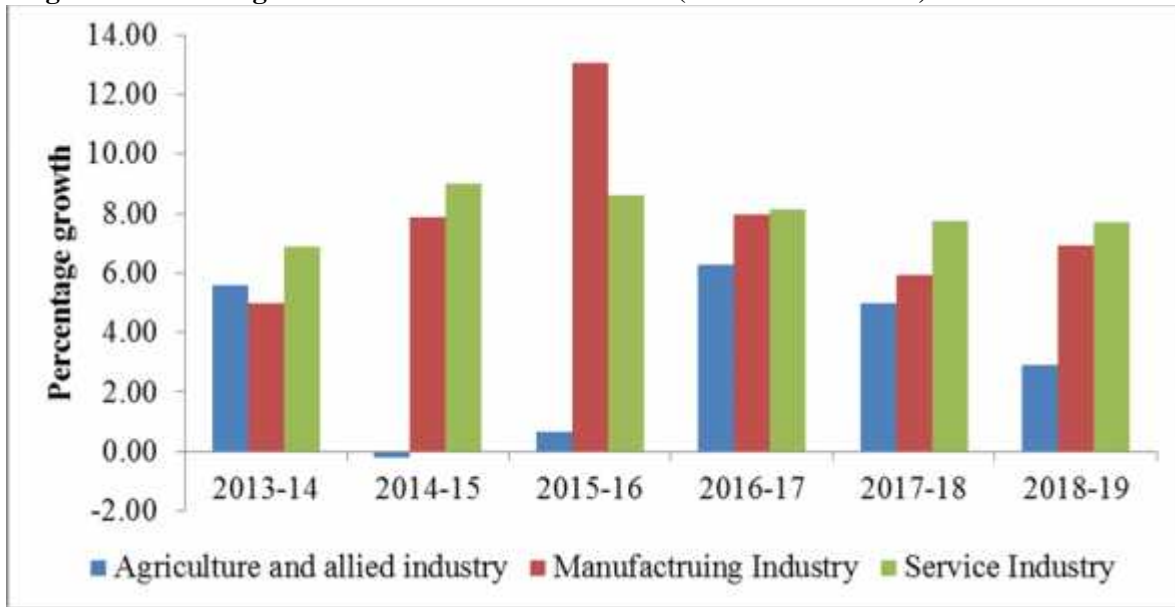
The role of financial sector is of paramount importance in a country because they supervise the resource allocation. Allocation of capital and risk accurately works as catalyst of economic growth. The financial intermediaries actively associate in launching various instruments to encourage the financial mobilization. Further, the ability to monitor projects, effectively manage risk and liquidity helps to achieve economies of scale. Simultaneously, it boosts the financial markets with attractive characteristics that enable risk sharing. Most authors opine that emerging countries usually depend on the banking industry to administer the intermediary functions. Owing to the fact that the monitoring activities of the banks are more powerful in curbing information asymmetry problem compared to individual lenders. Also the professional debt covenants aid to take decisions to improve economies of scale and growth of firms within industry framework.

The rapid expansion of bank credit in India raises several questions particularly, will it ultimately lead to economic growth or not. Many government schemes has been implemented to provide easy access to finance has been introduced particularly for Micro, Small & Medium Enterprises (MSME). Prime Minister's Employment Generation Program, Credit Linked Capital Subsidy Scheme, Credit Guarantee Scheme, Interest Subvention Scheme, 59 minutes loan portal, Micro Units Development & Refinance Agency Ltd. (MUDRA) yojana aims at margin money subsidies, collateral free loan, cost-effective and faster availability of credit.

However, activities such as demonetization and implementation of new tax system GST have constrained the growth of bank credit due to problems of non-performing assets (NPA). The inefficiencies in recoveries even after the implementation of Insolvency and Bankruptcy Code (IBC) are adding to owes of increasing credit cost. All of sudden the advances provided by banks reduced due to shocks faced by Indian economy specifically, after unveiling of scams associated with them. It is evident that the financial sector came under pressure following alleged issuance of fraudulent letter of understanding from public sector bank, the IL&FS meltdown, the economy weakened both from demand (consumer) and supply (Industry) side.



Figure 1: Percentage Growth of Gross Value Added (Base Year 2011-12) At Constant Prices



Source: Handbook of statistics on Indian economy, RBI report check

The Figure 1 above exhibits the percentage growth of gross value added (Base year 2011-12) at constant prices over the past six years of major categories of industries in India. The Agriculture and allied industry has high variations compared to manufacturing and service industries. The growth of GVA in Agriculture and allied industry decelerated by around 6 percent during 2014-15, reconciled in consecutive years but did not sustain the growth. The growth of GVA in manufacturing industry was at its peak during 2015-16 with growth percentage of around 13 percent which slowly decreased over years. Though growth of GVA in service industry seems uniform, it is increasing at diminishing rate.

According to RBI report, the overall bank credit has increased by 9.92 percent while the non-food bank credit has diminished to 8.1 percent by end of 30th September 2019. The bank credit to agriculture & allied activities has surged to 7 per cent compared to previous years' 5.8 percent. The services sector, which led to the revival of credit growth and was witnessing the highest economic activity, is also witnessing a continuing slowdown in credit demand. Advances to the services sector decelerated sharply to 7.3 per. Credit growth to industry slowed to 2.7 per cent manifesting the sluggishness in industrial activity.

The aim of the research is to appraise the relationship between bank credit to industry and industrial growth. The paper is organised as follows: Section II presents literature review, research objectives and hypothesis. Section III methodology and data collection; Section IV analyses the growth of bank credit to industries and its relationship between the industry value addition in India, followed by Summary and conclusion presented in Section V.

Literature Review

Various studies have been conducted at different time periods and with reference to different countries. Levine et al. (2000) incorporated the components of banking intermediaries to assess the impact on economic growth by using data set of 74 countries. The panel data suggested that there is a positive association which differ with legal and accounting systems. In other words, the good governance boosts the financial development which ultimately promotes economic growth.

Calderon and Liu (2002) focused the direction of causality between growths of financial intermediaries and economic growth. The panel data for 34 years across 109 countries which included both emerging and



industrialized countries was collected. The paper concludes that a two-way causality was found in both types of countries, however, the effect was more in emerging countries compared to developed ones.

Charkaborthy (2010) examined the impact on economic growth by financial sector which was categorized into money market and equity market in Indian context. Though it was found that financial sector plays an important role in economic growth, it was identified that the growth is primarily due to banking system while stock market growth indicates negative growth.

Hassan et al. (2011) classified the countries into high, middle and low income group based on reports from World Bank. In this comprehensive study, the nested panel data for 27 years with 168 countries were collected. The findings suggest that a positive association was found between financial development and economic growth in developing countries while contrasting results were found in high income group countries.

Mahajan and Verma (2014) among others have utilized various econometric methods and a multitude of proxies for financial development to study the impact it has on the economic growth of India.

Hossain et al. (2017) questions whether financial factors cause economic growth or vice versa in Bangladesh. The study suggests that no financial factor significantly causes economic growth; rather economic growth causes deepening of financial sector during the period. Thus, it is concluded that financial sector is since 1988.

Shahbaz et. al. (2017) investigation engrossed on two fastest growing economies in south Asia; China and India to compare their economic growth with the financial development. It was found that there exists a positive relationship between them both in India and China.

Alkhazaleh(2017) examined the association between profitability, deposit and credit facilities as proxy for performance of commercial banks while gross domestic product proxies economic growth in Jordan. It is found that there exists positive relationship between banks performance and economic growth.

Patra and Dastidar (2018) aimed attention at five South Asian countries; India, Sri Lanka, Bangladesh, Nepal, and Pakistan to determine the impact of finance on growth for a period of 25 years. According to them growth effects of financial channels is most pronounced in Sri Lanka, whereas, on the other hand, financial development plays no role in the Indian growth process in the short run. Bangladesh, Nepal, and Pakistan lie somewhere in between this spectrum with every country exhibiting unique growth paths which highlights the heterogeneity of the region.

Mamun, Ariffin and Hamid (2018) scrutinized the impact of banking credit on economic growth in Bangladesh for a period of 41 years (1975 to 2016). Due to the existence of structural break, full sample period into two sub-samples (19980-1990 and 1991-2016). It is found that an increase in real domestic credit impacts positively on real GDP and the impact is found to be statistically highly significant.

Research Objectives

1. To analyse the bank credit growth and industry growth in India.
2. To assess the relationship between the bank credit to industry and industry growth using econometric model.

Methodology

The study attempts to analyze the relationship between Bank credit to industries and its impact on industry GDP growth. This has been realized through the use of Co-integration and Granger Causality tests before which stationary test is conducted as a prerequisite. The series is converted into natural log values for this purpose. The Augmented Dickey Fuller test is conducted to check stationary of the series. The variables are integrated at same order; it is subjected to co integration test. Co-integration analysis tests for a long run relationship among variables and is necessary to avoid the risk of spurious regression. This paper incorporates Johansen co integration method to determine the presence of co-integrated vectors in non-stationary time series. Schwarz information criterion also known as Bayesian information criterion for lag length selection considered to ensure over fitting of



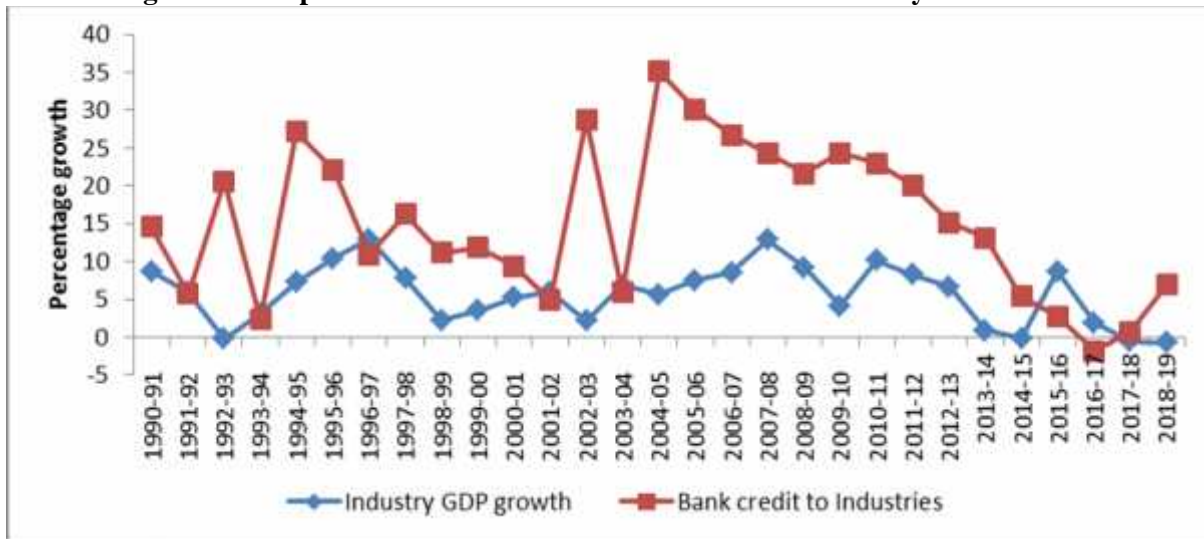
the model. Finally, if there are any co integrating equations, series is subjected to Granger's causality test to investigate relationship is unidirectional or bi-directional.

Data Collection

In order to accomplish the objectives, the study relies on time series secondary data published in Handbook of Statistics on Indian Economy by Reserve Bank of India (RBI). The data is collected from various issues of Industry-wide Deployment of Gross Bank Credit while Gross Value Added (GVA) by industry is collected from various issues of Components of Gross Value Added at Basic Prices with base year (2004-05). The GVA available from 2011-12 onwards are provided with base year (2011-12) and hence are deflated to (2004-05). The data used for the study pertains to 30 years from 1991-92 to 2018-19 which is the period of present study.

Results and Interpretation: The relationship between the bank credit to industries and overall industry GDP has been analysed in this section. The annual growth rate between the bank credit to industries and industry outputs are considered over 30 years.

Figure 2: Comparison of Bank Credit to Industries and Industry GDP in India



Source: Handbook of statistics on Indian economy, RBI report

The Figure 2 above is plotted by computing annual growth rate of bank credit to industries and Industry GDP growth. There is no distinct pattern with Industry GDP growth however, the bank credit towards industries show continuous decline from 2005 onwards. Further, it is noted that, when bank credit growth decreases, the industry GDP growth decreases in the immediate year. For further analysis, the study period is divided into six segments of five years each and compounded annual growth rates are computed.

Table 1: Compounded Annual Growth Rate (CAGR) of Bank Credit towards Industries and Industry GDP.

Segment	Year	Bank credit (CAGR in %)	Industry GDP (CAGR in %)
I	1989-90 to 1993-94	49.46	18.42
II	1994-95 to 1998-99	74.96	37.33
III	1999-00 to 2003-04	56.43	21.75
IV	2004-05 to 2008-09	149.18	43.94
V	2009-10 to 2013-14	92.37	28.39
VI	2014-15 to 2018-19	8.58	9.40

Source: Computed from Handbook of statistics on Indian economy, RBI report



The Table 1 above presents the compounded annual growth rate for five years. It is observed that when there is increase in growth of bank credit and simultaneously the industry GDP is boosted. In the fifth segment drastic decrease is identified due to global meltdown. The trend of significant decrease in the segment VI (2014-19) is recognized where growth cut back to single digit. This majorly due to demonetization and new tax systems coupled with economic slowdown across the globe.

Next section, long run equilibrium relation between Industry GDP and Bank credit to industry will be analyzed using econometric tests. The natural log values of both Industry GDP and Bank credit to industry are considered from 1990 to 2019. The stationary of the series is identified by conducting Augmented Dickey Fuller test with different test equations.

Table 2: Augmented Dickey Fuller test to check stationary of variables

Variables	Unit Root at	With Constant	Constant and Trend	No Constant
Industry GDP	Level	0.7402	0.6689	0.9901
	First difference	0.0519**	0.1347	0.0614
	Second difference	0.0001*	0.0004*	0.0000*
Bank credit to industry	Level	0.5908	0.1187	0.8559
	First difference	0.0536**	0.5501	0.2604
	Second difference	0.0000*	0.0000*	0.0000*

* Significance level at 1% ** Significant at 10%

From the table 2 exhibits the significance value of unit root test. If p value is less than significance level, then the null hypothesis that variable has unit root will be rejected. From the values it is evident that both variables Industry GDP and Bank credit to industry are integrated at first difference at 10% significance level while they are integrated at 1% significance level at second difference. Thus, the series are considered for Johansen's co-integration test which is likelihood ratio test to identify the long run relationship. The one year lag of Industry GDP is considered while conducting co integration test. The unrestricted co integration Rank Test (Trace and Maximum Eigen value) results are exhibited below.

Table 3: Johansen Co Integration Test

No. of Co integrating equations	Trace Statistic	Max-Eigen Statistic	Prob. (Trace test)	Prob. (Eigen test)
None*	14.6776	12.9108	0.0661*	0.0809*
At most 1	1.7668	1.7668	0.1838	0.1838

* Significant at 10 percent

From the above table 3, it is evident that at 10 percent significance level null hypothesis that no cointegration between Industry GDP and Bank credit to industry is rejected. Hence, it is evident that there is one cointegrating equation between Industry GDP and Bank credit to industry. Thus, it is understood that there exists cause and effect relationship due to the existence of cointegration.

Table 4: Granger Causality Test

Null Hypothesis:	F-Statistic	Prob.
LNINDUSTRY_GDP does not Granger Cause LNBANK_CREDIT	1.6722	0.2078
LNBANK_CREDIT does not Granger Cause LNINDUSTRY_GDP	14.9958	0.0007*

* Significance at 5 percent



The above table 4 depicts the results of Granger causality test. It is evident that, the null hypothesis that industry GDP does not Granger causes bank credit cannot be rejected with p value more than 0.05. However, null hypothesis that bank credit does not Granger causes is rejected even at 1 percent significance level. Thus it is concluded that there is unidirectional bank credit Granger causes industry GDP and not the other way.

Summary and Conclusion

Post liberalization, the banking industry has witnessed tremendous growth by fulfilling the capital need requirements of firms. This system has advantage of monitoring activities and there by curbing information asymmetry problem compared to individual lenders. The rapid expansion of bank credit in India has raised several questions particularly, will it ultimately lead to economic growth or not. Thus study is conducted to examine whether the bank credit has impact on industry growth in India. In order to accomplish the objectives, the study relies on time series secondary data published in Handbook of Statistics on Indian Economy by Reserve Bank of India (RBI). The data used for the study pertains to 30 years from 1991-92 to 2018-19 which is the period of present study. The GVA available from 2011-12 onwards have base year as (2011-12) which are deflated to match base year 2004-05.

In the first part of our analysis, growth rate of bank credit to industries and Industry GDP are analysed. There is no distinct pattern with Industry GDP growth however, the bank credit towards industries show continuous decline from 2005 onwards. Further, the compounded annual growth rate with interval of five years is computed. During 2004-09, bank credit towards industry saw huge jump of around 149 percent while industry GDP rose by around 44 percent. Significant decrease in the segment VI (2014-19) is recognized where growth cut back to single digit. This majorly due to demonetization and new tax systems coupled with economic slowdown across the globe.

The long run equilibrium relation between Industry GDP and Bank credit to industry was analyzed in econometric framework. By conducting the Augmented Dickey Fuller test, the Industry GDP and Bank credit to industry were found to be integrated at first difference at 10% significance level while they are integrated at 1% significance level at second difference. The series was considered for Johansen's co-integration test which is likelihood ratio test to identify the long run relationship. There is one cointegrating equation found between Industry GDP and Bank credit to industry at 10% significance level. Finally to identify the cause and effect relationship, Granger causality test was conducted. It was found that unidirectional relationship between bank credit and industry GDP at 1% significance level. Thus it is concluded that the bank credit influences industry GDP with lag of one year.

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