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**FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN INDIA**

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**Abstract :**

The purpose of this study is to investigate how the post-reform changes that occurred in India's banking sector influenced the country's overall economic growth. The purpose of this research is to expand the models developed in order to formalise the link that exists between financial development and economic growth within the framework of an endogenous growth model. After that, the model is estimated by making use of quarterly data for the years 1993 to 2005 for the country of India. The findings indicate that the investment-output ratio has a positive and significant influence on the actual rate of growth of GDP, despite the fact that this effect is independent of the indicator of stock market development. An increase in market capitalization has a depressing effect on economic growth, but an increase in the rate of interest on the money market has a significantly favourable and beneficial effect. The lagged values of foreign currency reserves appear to have a marginally significant negative influence on economic development. Real wealth and interest rate differentials both have a negative significant effect on economic growth. The findings do not provide much support for the theoretical forecast that the rise of India's stock market would play a key role in contributing to the country's overall economic expansion. Instead, it seems that the reform of the financial sector contributed greatly to the expansion of the economy.

**keywords:** *Financial, Economic growth***INTRODUCTION**

The evolution of the Indian financial system from one that was relatively restricted and small to one that is more open, deregulated, and market oriented, as well as the financial system's interface with the expansion process, are the primary focuses of the study contained within this article. With the push given to industrialization based on the initiatives made in the five year plans, the process of financial growth in independent India was effectively dependent on the development of commercial banking. The dominance of banking as the primary source of funding for new commercial and industrial endeavours in the 1950s and 1960s was reflected in the fact that most of these endeavours were financed. Despite the consolidation of smaller banks and the assistance provided to cooperative credit movement, the number of banks and branches had increased. This was despite the fact that smaller banks had been merged together.

From a practical standpoint, banks catered to the requirements of the organised commercial and industrial sectors. The primary sector, which during this time period comprised more than 50 percent of GDP and consisted of "agriculture, forestry, and fishing," was required to rely heavily on both its own financing and on sources that were not commercial banks. This was necessary because the primary sector was unable to secure financing from commercial banks. In this context, the process of financial growth was given a boost when, in 1967, a policy of social control over banks was adopted. This was followed up in 1969 by the nationalisation of 14 large scheduled commercial banks. Both of these events occurred against the backdrop of this situation.

Since that time, the nation of India's banking sector has been at the centre of its whole financial system. Commercial banks have a disproportionately large percentage of total financial assets and serve as the primary source of funding for the private business sector. This trend is primarily the result of initiative and policy action on the part of the public sector. In addition to this, a considerable portion of people's money is transferred to the government through their actions. In addition, throughout the course of the past several years, they have been responsible for the majority of the operations of the payment system. Banks in both the public and private sectors have been providing a broad variety of financial services in recent years as a result of growing diversification in the banking industry.

The number of scheduled commercial banks has increased by a factor of four in the three decades that have passed since the first wave of bank nationalisation (the second wave, which occurred in 1980 and consisted of six commercial banks), and the number of bank branches has increased by a factor of eight. During this time period (1969 to 1999), the total deposits of scheduled commercial banks have risen at a pace that is compound annual average growth rate of 17.8 percent, while bank lending has expanded at a rate that is compound annual growth rate of 16.3 percent. The annual growth rate of banks' investments in government securities and other assets permitted for investment by the government was 18.8 percent. The expanded function of banks as intermediaries may also be seen in the actions that banks do inside the payment system. Because of the transition from a manual to an electronic check clearing system, the total number of cheques that have been cleared has increased by a factor of 2175 throughout the course of this time period.

In addition to the banks, the rest of the financial sector has demonstrated a significant amount of vitality. The current system is rather complex, since it is comprised of a wide variety of financial institutions, as well as financial corporations and mutual funds. All-India Financial Institutions (AIFIs), State-level Institutions (SFCs and SIDCs), and other institutions are included in the category of financial institutions (ECGC and DICGC). 2 AIFIs comprise all-India Development Banks (IFCI, ICICI, IDBI, SIDBI, and IIBI), specialised institutions (EXIM Bank, IVCF, ICICI Venture, TFCI, and IDFC), investment institutions (UTI, LIC, and GIC and its subsidiaries), and refinancing institutions (IDFC, ICICI Venture, TFCI, and IDFC) (NABARD and NHB). Outside of the banking industry, depth in financial intermediation was supplied by the establishment of specialised financial institutions and refinancing institutions throughout the past three decades, as well as the beginning of reforms in the early nineties. These improvements, in conjunction with a rise in the liberalisation of the financial industry, have led to increasing competition. Several of the established financial institutions have expanded their operations into a variety of new fields, such as investment banking and infrastructure financing, as well as the provision of guarantees for loans made domestically and abroad to finance infrastructure projects. In addition to the growth of financial institutions in the 1980s, a rapid expansion of Non-Banking Financial Companies (NBFCs) also occurred during this time period. These companies offered opportunities for depositors to hold assets and for borrowers to increase the scale of funding for their activities. NBFCs come in a wide variety of forms, and those forms can offer a wide variety of services to customers. Some of these services include equipment leasing, hire purchase, loans, investments, mutual benefit, and chit fund operations. More recently, non-bank financial companies (NBFCs) have become more active in the field of home financing. The increasing significance of mutual funds is another indication of the expansion of the financial sector. They made it possible for a sizeable amount of the financial surpluses of families to be mobilised in the nineties so that it could be

invested in the stock market. After companies were allowed to charge share premium in a more flexible manner, capital markets themselves emerged as a major source of funding for corporate investments. This trend continued even after the financial crisis of 2008.

## **Financial Sector Reforms in India: An Overview**

The year 1991 saw the beginning of a programme of economic reform in India, which included the introduction of changes to the country's financial sector. The primary goal of the changes that were implemented in the financial sector was to increase the allocative efficiency of resources, ensure financial stability, and retain trust in the financial system by increasing its soundness and efficiency (Gopinath, 2007). The Narasimham Committee was established by the Indian government in August 1991 with the charge of investigating the entirety of the country's monetary system and providing detailed recommendations for its improvement. In its report, which was handed in by the Committee in November 1991, it suggested a number of different reform initiatives for the financial market and the banking industry. The proposals were promptly and in large part adopted by the administration, and the process of change was set in motion without delay. In this section, we will have a quick discussion on the significant changes that have been implemented in India's banking industry and capital market since then. Liberalization of the interest rate took place in 1991 as a direct response to the suggestions made by the Narasimham Committee. A steady process was taken to deregulate the interest rates on time deposits. Deposits of any length of time, up to and including deposits for a period of fifteen days, have had their interest rates released as of October 1997. Despite this, the Reserve Bank of India continued to exercise control over the interest rate paid on savings deposits. In addition, controls were lifted on lending rates. Only the interest rate that is imposed on export credit is now under the Reserve Bank of India's direct jurisdiction. Export credit only accounts for 10% of total commercial lending (Ahluwalia, 1999). The cash reserve ratio (CRR) and the statutory liquidity requirement have both been subject to a number of liberalisation measures ever since the reform that took place in 1991. (SLR). In the years leading up to 1991, the CRR reached as high as 25 percent, while the SLR hovered around 40 percent. The CRR was reduced to 6 percent in 2006-2007, while the SLR is now at 25 percent at this time. The field of directed credit programmes is the one in which the suggestion of the Narasimham Committee has not been implemented as it was suggested. The directed credit programmes compel the commercial banks to direct forty percent of their commercial loans to the priority sector, which includes farmers, small-scale enterprises, small-scale transport operators, craftsmen, and other similar types of businesses. There are sub-ceilings for agriculture and also for loans to target groups that are connected to poverty that are contained within this aggregate ceiling. The fact that the proportion of non-performing assets (NPA) in the priority sector portfolio of the banks is substantially greater than in the nonpriority sector portfolio is the most significant flaw of the directed credit programme (Ahluwalia, 1999). One further essential aspect of the reforms is that, ever since 1991, a variety of international banks and private businesses have been invited to start banking operations in India. This is an extremely beneficial aspect of the reforms. In order to encourage healthy competition, foreign direct investment of up to 74 percent of the ownership of private banks and up to 20 percent of the ownership of nationalised banks has been made permissible. In addition, the maximum allowed share of ownership that can be held by foreign institutions in private banks is capped at 49 percent. The number of private and international banks that were active in India in 1991 was 21 and 23, respectively. By 2004, those figures had climbed to 33 and 30 respectively. Within the framework of the liberalised system, the equity

held by the government in financial institutions has been decreased, and robust financial institutions have been granted access to the capital market in order to garner more funding. Without considering the regulatory reform that has been implemented since 1991, any discussion on the subject of changes in the Indian banking industry would remain insufficient and unsatisfactory. Prior to 1991, the banking system in India did not provide consistent accounting methods for income recognition, the categorization of assets into performance and non-performing categories, the provisioning for non-performing assets, or the value of securities held in the bank's portfolio.

Beginning in March of 1996, a standard prudential norm was developed in accordance with the recommendations made by the Narasimham Committee and modelled after the work of the Basel Committee on Banking Supervision. Before 1991, only a select few financial institutions had achieved a capital adequacy ratio of 8 percent or above. By March of 1998, just one of the 28 banks that were part of the public sector had failed to meet this requirement (Ahluwalia, 1999). In order for public sector banks to meet the required levels of capital adequacy, the government has supplied public sector banks with significant amounts of capital. Additionally, there were attempts made to cut down on NPAs. Before the year 1991, the ratio of net non-performing assets (NPAs) to total advances was 16.3 percent, but by the end of 1997–1998, it had dropped to 8.2 percent. The plan for reforming India's financial sector included the restructuring of the country's capital markets as an essential component.

The Bombay Stock Market (BSE), which is considered to be India's oldest stock exchange, first opened its doors for business in the year 1875. Despite this, there was not a significant amount of activity in BSE until the year 1980. Since 1980, it has been experiencing a tremendous expansion. However, prior to 1992, the operation of the Indian capital market continued to be heavily regulated and was directly controlled by the government. The Securities and Exchange Board of India (SEBI) has been in charge of overseeing the country's financial markets since its establishment in 1992. Instead of doing so through direct control, the new regulatory structure that was outlined by SEBI aimed to increase investor protection by guaranteeing disclosure and openness in the market. Since 1992, the necessity of previous government authorization in order to enter capital markets and the requirement of prior approval of issue pricing have both been eliminated. In 1993, the Indian capital market was opened up to foreign institutional investors (FIIs), and Indian corporations were granted permission to issue global depository receipts (GDRs) in order to raise cash outside of India. Additionally, FIIs were granted access to the Indian capital market (GDRs). By 1999, more than 500 FIIs had been registered with SEBI, and by that year, a total investment of \$15 billion had been made via the channels of FIIs and GDRs (Ahluwalia, 1999).

## **Methodology**

### **Pedroni Panel Cointegration Test**

This investigation makes an effort to utilise the Pedroni Panel cointegration test in order to evaluate the connection that exists between financial development and economic expansion. Leaving more details to be covered in Annexure-1, the test for Pedroni's (1999) panel cointegration may be provided as:. This is based on the assumption that each variable is integrated of order one.

$$Y_{i,t} = \alpha_i + \rho_{i,t} + \beta_{1i,t}X_{1i,t} + \dots + \beta_{Mi,t}X_{Mi,t} + \epsilon_{it} \tag{1}$$

In this case, t equals 1,...T, I equals 1,...N, and m equals 1,...M, where T stands for the number of observations throughout time, N stands for the number of individual provinces included in the panel, and M stands for the number of regression variables. In the same way as in a standard bivariate co-integration test, the existence of cointegration is evaluated based on the testing error estimation from equation (1). Next, the same is utilised in another difference equation to obtain the test-statistics, which are used to determine whether or not there is a potential relationship between financial development and economic growth. (For details, see Annexure-1). It is required to re-formulate the equation as follows since it is a generic specification of Pedroni Panel cointegration, which is given by the equation (1).

$$LPCNSDP_{it} = \alpha + \beta LPCC_{it} + \epsilon_{it} \tag{2}$$

where I is a variable that represents an Indian state (for example, I = 1, 2,....., 5 for BIMAARU states; I = 1, 2,....., 9 for the rest of nine states; and I = 1, 2,....., 14 for all states); and t is a variable that represents the passage of time. The abbreviations LPCNSDP and LPCC stand for the Natural Log of per-capita Net State Domestic Product and Natural Log of per-capita Credit, respectively. For the purpose of analysing the connection between financial development and economic growth, Equation (2) takes into account two variables, namely, (i) Net State Domestic Product and (ii) Per capita credit. It is necessary to have a close proximal representation of both the financial development and the economic growth. As an illustration, monetary aggregates such as M2/GDP or M3/GDP are typically utilised as indicators of the progression of financial growth. Credit is also regarded to be a good indication of financial growth because it symbolises the mobilisation of deposits, which are subsequently invested in productive sectors through credit availability. This is one reason why credit is thought to be acceptable. It guides the movement of savings and investment within the economy in order to facilitate the accumulation of capital and the creation of goods. The Per-capita Net State Domestic Product is a measure that may be used to reflect economic growth or production.

**FMOLS Panel Estimates**

We construct FMOLS panel estimates for real per-capita credit since the model is cointegrated. Fully modified least squares, often known as FMOLS regression, was first conceptualised in the work of Phillips and Hansen (1990) with the intention of providing optimum estimates of cointegrating regressions. It is not possible to eliminate endogeneities in the regressors by employing vector autoregressions (VARs) as if they were merely reduced forms because cointegrating relationships between nonstationary series result in endogeneities in the regressors. The method adjusts the least squares approach in order to take into consideration the impacts of serial correlation as well as the endogeneity in the regressors that arises as a direct consequence of the presence of a cointegrating connection. Consider the following cointegrated system for a panel consisting of I = 1, 2,...., N states during a period of time t = 1,2,....,M:

**Data and its Sources**

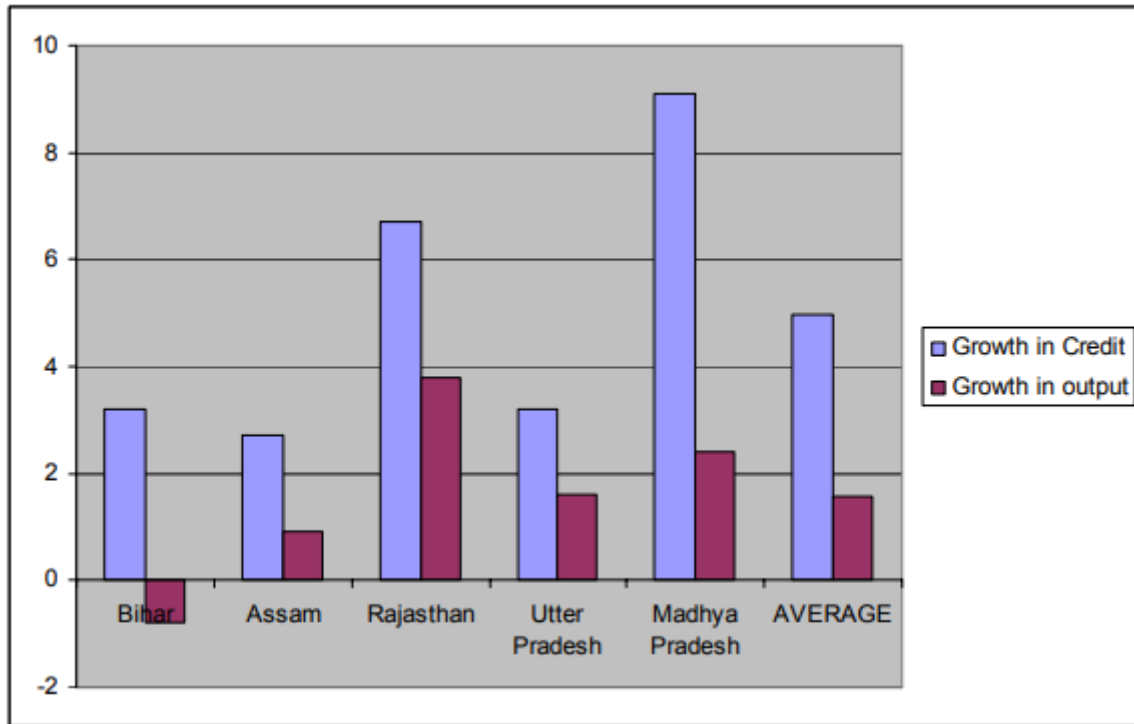
Data on per capita Net State Domestic Product (PCNSDP) and per capita credit for the states (PCC) for a panel of 14 Indian states were collected on an annual basis for the period of 1981-2002 in order to evaluate the possibility of a link between financial development and economic development using panel co-



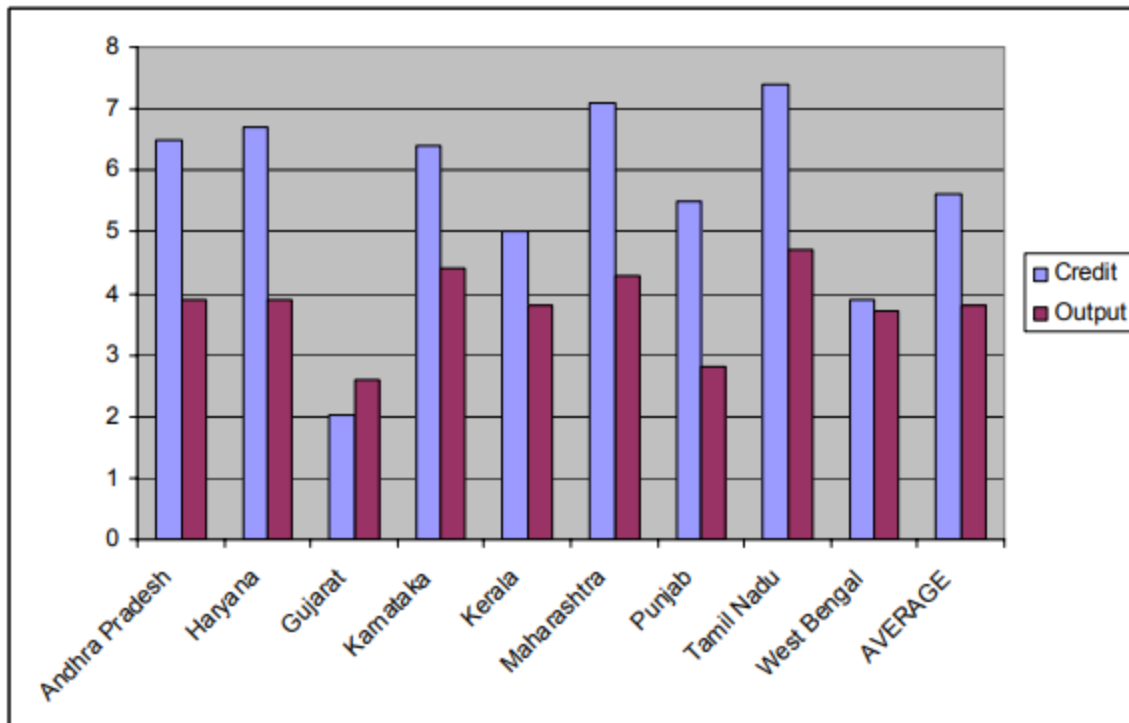
integration. This was done in order to assess the possible linkage between financial development and economic development. The figures for the Net State Domestic Product (NSDP) were obtained from the Central Statistical Organization. The base year used for these calculations was 1993-1994. The statistics for credit, that is, the outstanding credit to various sectors from all scheduled commercial banks in a state, have been collected from the RBI's database on the Indian economy, which is available on the RBI website. These figures may be found on the RBI website. When deciding whether or not to include concerned states in the study, one of the most important factors to take into account is the availability of data for the time in question. In this study, fourteen different states were taken into consideration. These states are Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. The study was based on consistent data that was available between the years 1981 and 2002. This study divides the total sample into two sub-samples in order to investigate the financial development and economic growth in developed and backward states. These sub-samples are referred to as (i) backward states, also known as BIMAARU states, which consist of Bihar, Madhya Pradesh, Assam, Rajasthan, and Uttar Pradesh; and (ii) developed states, which include Andhra Pradesh, Gujarat, Haryana, Karnataka, Kerala, Maharashtra. Because Assam meets the requirements, in terms of economic statistics, to be included in this group, we have decided to classify it as belonging to the BIMAARU category. This is a different categorization from the typical BIMARU system that is used in conversations about the Indian economy.

## **Credit Allocation and Output Growth in Indian States: Summary Statistics**

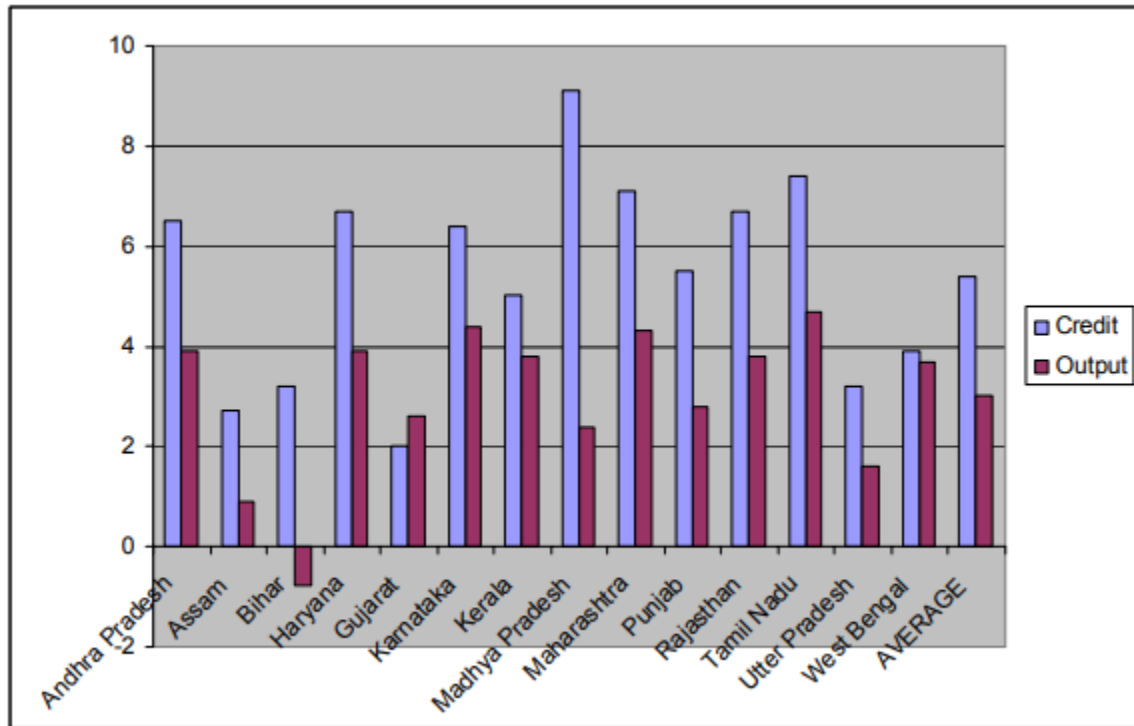
Table-1 and Graph-1 offer a summary of the information regarding the average increase of credit and output throughout the time period of 1981-2002, which can be used to get a fundamental understanding of the link between credit and output. Table-1 suggests that (i) the average credit growth and output growth (in total) is higher in developed states (5.62 and 3.79) in comparison to BIMAARU states (4.98 and 1.58); (ii) with the exception of Bihar, all Indian states, both developed and BIMAARU states, show a growth in credit and output individually during this period; (iii) in a similar way, all states, except for Bihar, show a significant correlation between credit and output growth; and (i.e., -0.16907)  $r$ . The ranking of the states in terms of the association between loan growth and production growth is presented in Table-2 for both BIMAARU and other developed states. According to Table-2, (i) among developed states, Tamil Nadu ranks highest in the list (i.e., 0.9695), while Haryana figures as the lowest with 0.7595; (ii) among BIMAARU states, Madhya Pradesh ranks highest, with 0.9219, and Bihar is listed as the lowest with -0.1691; and (iii) the credit and output growth relationship (i.e., 0.9219) in Madhya Pradesh is higher than.



**Graph 1(a): Average growth in credit and output for BIMAARU States**



**Graph 1(b): Average Growth in Credit and Output for Developed States**



Graph 1(c): Indian States: Average Growth in Credit and Output

Table 1: Growth of Credit and Output in Indian States (1981-2002): Summary Statistics

State	Credit (%)	Output (%)	Correlation
<b>India: BIMAARU States</b>			
1) Bihar	3.2	-0.79	-0.16907
2) Madhya Pradesh	9.1	2.4	0.921942
3) Assam	2.7	0.9	0.700649
4) Rajasthan	6.7	3.8	0.863359
5) Utter Pradesh	3.2	1.6	0.845637
<b>Average Growth Rates</b>	4.98	1.58	-
<b>India: Other States</b>			
1) Andhra Pradesh	6.5	3.9	0.813654
2) Gujarat	6.7	3.9	0.885999
3) Haryana	2.03	2.6	0.759475
4) Karnataka	6.4	4.4	0.888786
5) Kerala	5.01	3.8	0.926757
6) Maharashtra	7.1	4.3	0.930803
7) Punjab	5.5	2.8	0.942402
8) Tamil Nadu	7.4	4.7	0.969588
9) West Bengal	3.9	3.7	0.841269
<b>Average Growth Rates</b>	5.62	3.79	-
<b>All India Average Growth Rate</b>	5.39	3.00	-



**Table 2: The Ranking of Indian States According to Their Correlation Between the Growth of Credit and Output from 1981-2002**

Particulars	Negative Corr.	70 < Corr. < 90 %	Corr. >90%
<b>India: BIMAARU States</b>	Bihar (14)	Rajasthan (8): Utter Pradesh (9) Assam (13)	Madhya Pradesh (5)
<b>India: Other States</b>	-NIL-	Kerala (6) Gujarat (7) West Bengal (10) Andhra Pradesh (11) Haryana (12)	Tamil Nadu (1) Punjab (2) Maharashtra (3) Karnataka (4)

The information on the link between credit and output may help explain the credit-output nexus in part. For example, each state is considered to be a separate entity when calculating the percentage increase in credit-output that can be attributed to the state's own efforts alone. In fact, the credit-output connection of a single state is impacted not only by the efforts that state makes over the course of a certain time period (known as the "time series effect"), but also by the credit-output influences of other states (cross-sectional influences). A simple correlation might not give any evidence of a cross-sectional link between the states, which would narrow the window of opportunity for policy recommendations. In addition, it may show the "direction" of correlations, but it cannot suggest the "extent" of the link that exists between two variables. As a result, an empirical test that takes into account both cross-sectional and time series variables may be able to better explain the relationship between credit and production. As a result, the purpose of this article is to make an attempt to estimate the credit-output nexus that exists across Indian states by taking fourteen Indian states to be a panel. Each member of the panel exerts effect on the other across a variety of cross-sections and time periods. In order to accomplish this goal, Pedroni's panel cointegration is used to determine how the various states in India are related to one another in terms of credit output.

**Credit Allocation and Output Growth in Indian States: Evidence from Panel Cointegration Framework**

To put it another way, even while each panel member acts erratically in the short run (also known as short-term disequilibrium or non-stationary series), the panel members as a whole have a tendency to move in tandem over the course of a longer period of time. Even if there is a short run disequilibrium<sup>2</sup>, the mutual reinforcement that all of the panel members get from one another will, in the long run, lead to a condition of equilibrium (also known as a stationary series). Technically speaking, the existence of such a phenomenon among panel members is referred to as the presence of "Panel cointegration." The test of Pedroni's panel cointegration requires, in essence, that the panel members together be expected to be non-stationary series of the same order. This is denoted by the symbol I(d), and it is important to note that d refers to the order of differencing that is necessary to make a series as a stationary series. The panel unit root approach is typically utilised if there is a need to determine whether or not the panel member series in question are stationary. Confirming the existence or absence of a unit root in panel data analysis is accomplished through the use of test statistics derived from panel unit roots. In this study, the panel unit root methodology developed by Im, Pesaran, and Shin (IPS) (2003) was applied to three distinct panel data samples: I the panel data from the

BIMAARU states; (ii) the panel data from the nine developed Indian states; and (iii) the full sample panel data, which included both the BIMAARU states and the developed Indian states. The purpose of this was to determine whether the growth rates of state credit and output are observing the same order of integration Table 3 displays the findings of the investigation of the IPS panel's unit roots. The conclusion that can be drawn from Table-3 is: I the null hypothesis of non-stationary is not rejected in the level itself, with the exception of a few cases, even in the presence of an absence of trend in all three panel data sets; (ii) the null hypothesis is rejected in the first difference, evidencing panel member series as non-stationary series of order 1, I; and (iii) the null hypothesis is not rejected in the second difference, evidencing panel member series as non-stationary series of order (I). This study believes the credit and output variables in the three panel data samples to be non-stationary of order I, i.e., I, despite the fact that there are some mixed findings in the presence of trend, and it leaves the same question open for further investigation (1).

**Table 3: Im, Pesaran and Shin (IPS) (2003) Panel Unit Root Test Results**

Variables	IPS Test Statistic (Without Trend)		IPS Test Statistic (With Trend)	
	t-bar	t-tilde-bar	t-bar	t-tilde-bar
<b>BIMAARU States</b>				
LPCC	-2.29834***	-2.03237	-2.83967***	-2.36196
LPCNSDP	-1.52039	-1.43520	-3.47540***	-2.64275
DLPCC	-4.84598***	-3.23905***	-4.72040***	-3.15686***
DLPCNSDP	-6.66380***	-3.63991***	-6.53717***	-3.55914***
<b>Other States:</b>				
LPCC	-1.61145	-1.36872	-3.68169***	-2.73727***
LPCNSDP	-0.11786	-0.12908	-3.10970***	-2.40431
DLPCC	-6.60153***	-3.48012***	-6.49328***	-3.38937***
DLPCNSDP	-6.84100***	-3.49497***	-7.05326***	-3.46535***
<b>All India</b>				
LPCC	-1.85677***	-1.60574	-3.38096***	-2.60323***
LPCNSDP	-0.61876	-0.59555	-3.24031***	-2.48947
DLPCC	-5.97455***	-3.39402***	-5.86011***	-3.30633
DLPCNSDP	-6.77771***	-3.54673***	-6.86894***	-3.49885***

Notes: \*\*\* denotes rejecting the null hypothesis at 10% level.

It is feasible to use Pedroni's panel cointegration in situations in which the panel data show signs of being non-stationary of I(1) order. In this particular piece of research, the test of Pedroni's panel cointegration with trend and without trend was carried out independently for each of the three panel data sets. Table-4 contains the results that were obtained from this examination. This table offers seven test statistics, including I vstatistics; (ii) panel rho-statistics; (iii) panel adf-statistics; and (iv) panel pp-statistics. Further information will be provided in annexure-III. (vii) Group pp-statistics, Group rho-statistics, and Group adf-statistics 3 . Based on the information shown in Table-4, we may conclude the following: I the null hypothesis of no-cointegration is rejected in the case of BIMAARU states, other developed Indian States, and the whole panel data sample. The long-run panel co-integration between credit and output across BIMAARU and other developed Indian states is ensured by the fact that cointegration with trend also confirms the rejection of the null hypothesis of no-cointegration in all three panel data sets. This is the only way to account for a small number of cases. To put it another way, even while it may appear that the link between credit and production is demonstrating a disequilibrium in the short run, there is, in fact, a relationship between credit and output in the long run throughout all of India's states.

**Table 4: Results of Pedroni panel cointegration (Without Trend)**

Test Statistic	(Without Trend)			(With Trend)		
	BIMAARU	Other States	All States	BIMAARU	Other States	All States
Panel v-statistics	1.28665	2.25267	2.55990	0.45331	2.25267	0.87331
Panel rho-statistics	-2.33426	-5.12984	-5.45044	-0.24850	-5.12984	-2.49856
Panel pp-statistics	-3.74505	-5.98493	-7.00747	-1.39362	-5.98493	-5.85110
Panel adf- statistics	-4.01750	-5.04253	-6.38550	-2.20567	-5.04253	-5.16046
Group rho-statistics	-1.90107	-3.01386	-3.55258	-0.39090	-3.01386	-0.61175
Group pp-statistics	-4.27284	-5.78793	-7.19418	-1.37686	-5.78793	-5.00934
Group adf-statistics	-4.64098	-3.38449	-5.48714	-2.25112	-3.38449	-4.92982

**FMOLS Results**

The previous section provides evidence that a co-integration exists between credit and output throughout all of India's states. FMOLS is computed using the equation (3), and the results are displayed in Table-5. Based on the information shown in Table 5, it appears that the responsive co-efficient of credit is very significant in the BIMAARU states, where it sits at 0.42, in other developed Indian states, where it sits at 0.70, and in the whole panel data sample of Indian states, where it sits at 0.54. In addition, as compared to BIMAARU states,

developed Indian states have a responsive co-efficient that is far more prominent. This ensures that credit will continue to play an essential role in the expansion of the Indian economy in the near run. Developed Indian states have an active credit-output connection. Although a similar result was also reached in the BIMAARU states, the combination of the BIMAARU states with other developed Indian states demonstrates a responsive co-efficient in between the BIMAARU states and other developed States. It indicates that the average strength of the relationship between credit and output has decreased from 0.70 to 0.54 as a direct result of the less active credit-output link in BIMAARU states. Any effort that is made to increase the credit output connection in BIMAARU states will also ensure that the credit and output nexus is greater and stronger in all of India's states.

**Table 5: The FMOLS Estimates**

$(LPCNSDP_{it} = \alpha + \beta LPCC_{it} + \varepsilon_{it})$			
	BIMAARU	Other States	All States
Coefficient	0.42	0.70	0.54
t-statistics	(8.01*)	(22.68*)	(24.28*)

Note: \* denotes statistical significance at the 1% level.

**Concluding Remarks and Recommendations**

This study makes an effort to reevaluate the connection that exists in India between expanding credit and expanding economic production. Earlier research on the credit and output nexus was either conducted using a small data set or did not have a strong focus on panel data analysis. Both of these approaches had their limitations. This paper collected annual data on Net State Domestic Product and Total Commercial Bank Credit Outstanding for the period 1981-2002 from various publications of Reserve Bank of India (RBI) and Central Statistical Organisation in order to have larger data sets with which to evaluate the credit-output relationship. This was done with the intention of having more information with which to analyse the credit-output relationship (CSO). This study classified the full panel data sample into three sets, namely, I BIMAARU states, which are considered to be backward states; (ii) Nine developed Indian states; and (iii) full sample panel data sets, which include both BIMAARU and developed states. The purpose of this study was to determine whether the credit-output relationship is different between developed and backward states. The preliminary investigation into credit growth and output growth revealed the following: I a support for independent credit growth / output growth was evidenced in BIMAARU states as well as Nine developed states; (ii) the correlation co-efficient suggested a significant relationship between credit growth and output growth in developed Indian states as compared to BIMAARU states in India. Because the coefficient of correlation indicates the direction of the relationship (whether it is a positive or negative relationship), it is necessary to determine the extent of the connection that exists between the expansion of credit and the expansion of output by using models such as Panel Cointegration and Fully Modified Ordinary Least Squares (FMOLS). In addition, when conducting empirical estimation of the relationship between credit and output, it is preferable to take into account the influence of time series as well as cross sectional dimensions. This is on

account of the belief that doing so can explain the relationship between credit and output better than doing so either with a focus on time series or with a focus on cross sectional dimensions. In light of the fact that both credit growth and output growth were found to have panel unit roots according to IPS panel unit root, this research utilised Pedroni's Panel co-integration framework in order to determine whether or not there is a long-term relationship between credit and output among the various Indian states. The findings demonstrated the existence of a long-run co-integration link between the expansion of credit and the expansion of output throughout the various states of India, including both developed and backward Indian states. It indicates that the credit-output connection across Indian states in the short term may have a tendency to wander quite far from one another, but in the long run, they have reverted to a movement that is similar across all Indian states. As a consequence of this, financial development is seen as a primary factor in the expansion of the economy of Indian states. According to the findings of FMOLS, the sensitivity of the link between credit and output is lower in BIMAARU states, and there is a need for a clear intervention on the part of the government or regulatory agencies in order to encourage credit output growth. In addition, the poor credit-output link may also be the result of inefficient structural or regulatory difficulties in activities related to the real sector. If (i) the structural challenges in real sector industries and (ii) the incorrect support of credit mechanism are addressed, it is possible that BIMAARU states may see a robust relationship between credit and production.

## References

- [1] Arestis, P. and Demetriades, P. (1997), "Financial development and economic growth: assessing the evidence" *Economic Journal* 107,442
- [2] Berthelemy, J.-C., and A. Varoudakis (1998), "De'veloppement financier, re'formes financie'res et croissance: une approche en donne'es de panel", *Revue e'conomique* 49, 195– 207
- [3] Buffie, E. F. (1984), "Financial repression, the new structuralists, and stabilization policy in semi-industrialized economics, *Journal of Development Economics*, 14, 305-22.
- [4] Demetriades, P. and Hussein, K. (1996), "Does financial development cause economic growth? Time-series evidence from 16 countries", *Journal of Development Economics* 51,387-411.
- [5] Demetriades, P. and Luintel, K. (1996), "Financial development, economic growth and banking sector controls: evidence from India", *Economic Journal*, 106, 359–74.
- [6] FitzGerald Valpy(2006), "Financial development and economic Growth: A Critical View", Background paper for World Economic and Social Survey 2006
- [7] Fry, M. J. (1995), *Money, Interest and Banking in Economic Development*, Johns Hopkins University Press, Baltimore.
- [8] Gelb, A. H. (1989), "Financial policies, growth and efficiency", *Policy Planning and Research Working Papers*, No. 202, World Bank.
- [9] Goldsmith R W (1969), *Financial Structure and Development*• New Haven: Yale University Press,
- [10] Gupta, K.L. (1984), *Finance and Economic Growth in Developing Countries*, Croom Helm, London.
- [11] Güryay Erdal, Okan Veli Şafakli, Behiye Tüzel(2007), "Financial dvelopment and economic growth: Evidence from Northern Cyprus", *International Research Journal of Finance and Economics*, 8, 57-62.

- [12] Im, K. S., Pesaran, M. H. and Shin, S. (1995): “Testing for Unit Roots in Heterogeneous Panels”, Mimeo, Department of Applied Economics, University of Cambridge.
- [13] Im, K.S., Pesaran, M.H., and Y. Shin (1997): “Testing for unit roots in heterogeneous panels”, Mimeo, Department of Applied Economics, University of Cambridge. [14] Jung, W. S. (1986), “Financial development and economic Growth: International evidence”, *Economic Development and Cultural Change*, Vol. 34, No. 2, PP. 333-346
- [14] King, Robert G. and Levine Ross (1993), “Finance and growth: Schumpeter might be right”, *Quarterly Journal of Economics*, Vol.108 (3), pp. 717-738.
- [15] King, R. and Levine R. (1993), “Financial intermediation and economic development”, in C. Mayer and X. Vives (eds), *Capital Markets and Financial Intermediation*, Cambridge, Cambridge University Press.
- [16] Levine, R. and Zervos, S. (1998), “Stock markets, banks, and economic growth”, *American Economic Review*, 88, 537–58.
- [17] Levine, R. (1997), “Financial development and economic growth: views and agenda”, *Journal of Economic Literature*, 35, 688–726.
- [18] Levine, R. (1998), “The legal environment, banks, and long run economic growth”, *Journal of Money, Credit, and Banking*, 30, 596–613.
- [19] Levine, R., Loayza N. and Beck T. (2000), “Financial intermediation and growth: causality and causes”, *Journal of Monetary Economics*, Vol.46, pp.31-77.
- [20] Lucas, R. (1988), “On the mechanics of economic development.” *Journal of Monetary Economics* 22, 3–42.
- [21] McKinnon, R. I. 1973, *Money and Capital in Economic Development* Washington, DC: The Brookings Institution.