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Contribution of Sectoral Credit on the Economic Growth of Nepal

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Abstract

This research paper investigates the contribution of sectoral credit to the economic growth of Nepal. Utilizing a dataset covering quarterly time series data from Fiscal Year 2010/11 quarter 1 to Fiscal Year 2022/23 quarter 2, the study employs an empirical approach to examine the relationship between sectoral credit allocation and gross domestic product (GDP). The analysis focuses on three key sectors: agriculture, service, and industry. The results indicate significant findings in both the long run and short run. In the long run, agricultural sector credit exhibits a negative impact on GDP, while service sector credit shows a positive effect. However, the impact of industrial sector credit is inconclusive. In the short run, agricultural credit positively influences GDP after a certain lag, and service credit has an immediate positive impact.

Keywords: Sectoral Credit, ARDL, Economic Growth

JEL Classification Code: G21, E22, E51, O49

Introduction

Every year in the budget speech we can listen to the credit subsidies and the programs related to the credit ease in our country. The reliance of many

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developing and transition countries on large-scale government intervention in rural credit markets is very important. This intervention is aimed at addressing market failures and the prevalence of exploitative informal lending practices, which can hinder overall growth and productivity. However, despite being a long-standing approach, there has been limited research at the macro level to examine whether these government initiatives effectively alleviate credit constraints for the different sectors and promote economic growth. As we can see in the trend graph in Annex 2, the upward rising of the credit in all the sectors of Nepal. And the economic growth is not seen in the same pattern. So, in this study, we try to assert the role of credit in the economic growth of the nation.

In contrast to the scarcity of macro-level studies, there exists a substantial body of literature at the micro level which focuses more on the agricultural sectors, that explores the potential benefits of credit access for farmers. Early examples of such research, like the works of Carter (1989) and Feder et al. (1989), have shown that improved credit access can potentially enhance agricultural productivity.

There are two perspectives on the relationship between credit and growth. Supporters argue that credit plays a crucial role in promoting growth by facilitating the efficient allocation of resources from savers to borrowers with productive investment opportunities. They emphasize the role of the financial system, particularly banking, in this process. Banks act as intermediaries, mobilizing public funds and creating a money supply, thus serving as a vital channel for monetary policy transmission.

However, some critics argue that economic growth primarily depends on the utilization of physical resources and is influenced only by real variables. They contend that credit expansion may be a result of economic activities rather than a driver of growth. Various approaches and econometric techniques have been employed to study the relationship between credit and economic growth. These studies have produced mixed results, with some suggesting causality in both directions. This means that credit can influence economic growth, and vice versa.

According to Singh et.al (2016), In the context of India, credit has been expanding, and policies such as the Jan Dhan Yojana have improved the reach of the banking system. Additionally, the capital markets, including debt and equity markets, have gained significance. The use of credit cards for consumption-based transactions has also increased. Therefore, studying the relationship between bank credit and economic growth is not only of academic interest but also holds practical significance in policymaking, considering the evolving financial landscape and the potential impact of credit on economic development.

Review of Literature

We can find a series of literature related to the role of credit and economic growth. But the scant literature is available for sectorial credit flow and economic growth. Initially, Schumpeter (1934) emphasized the crucial role of financial intermediaries in various aspects of economic growth. He highlighted their ability to mobilize savings, evaluate projects, manage risk diversification, monitor debt management of firms, and facilitate transactions. According to Schumpeter, bank credit acts as money capital, which is essential for entrepreneurs to realize their innovative processes. Schumpeter (1970), further discussed the role of banks as "social accountants" who enable individuals to make mutually compatible choices within certain constraints.

However, post-World War II, economic models based on neo-classical traditions, such as Harrod-Domar and Robert Solow's models, disregarded the importance of the financial sector. Economists generally believed that when opportunities requiring financing arise in an economy, the necessary markets and institutions would naturally develop to provide the required financing.

Tobin (1965), explored neo-classical growth models and examined the potential of monetary assets as an alternative means of wealth accumulation instead of productive capital. He found that post-war development strategies predominantly relied on direct government intervention to promote physical capital accumulation, leading to the repression of financial markets and hindering their contribution to economic growth.

These perspectives were challenged by McKinnon (1973) and Shaw (1973).McKinnon argued that in developing countries. the complementarity between financial development and capital accumulation is more important than substituting idle money for physical capital. Shaw emphasized the growth-enhancing effects of deepening financial capital through its impact on market integration. Both McKinnon and Shaw incorporated money and finance into models relevant for developing countries, shedding light on the negative effects of financial repression and influencing financial policy reforms in subsequent decades.

Minsky (1992), proposed that the primary role of the financial system is to promote the "capital development" of the economy. He warned that during periods of high credit growth, there is a tendency to compromise quality standards, leading to a subsequent crisis. This culminates in a "Minsky Point" or "Minsky Moment," which marks the beginning of a financial crisis where the supply of credit dries up, causing panic in the financial system.

Patrick (1966) discusses two possible causal relationships between financial development and economic growth. According to the "demand-following" view, as the real economy grows, the demand for financial services also grows. On the other hand, according to the "supply-leading" view, financial institutions and services are created in advance of the demand for them. Patrick suggests that in the early stages of growth, the supply-leading view becomes more significant, while the demand-

following response becomes dominant as sustained macroeconomic growth progresses.

Jung (1986) conducted a study on the causal relationship between financial development and economic growth in 56 countries using Granger Causality tests. The results showed evidence that less developed countries (LDCs) predominantly exhibit a supply-leading pattern, whereas developed countries (DCs) have a reverse causal direction.

Levine et al. (2000), Calderon and Liu (2002), and Hassan et al. (2011) conducted panel data studies across multiple countries to examine the link between financial development and growth. Although the specific conclusions regarding causation direction and the proxy variables for financial development varied, these studies concluded that there exists a strong relationship between financial development and growth.

Other studies, such as those by Pradhan (2009), Chakraborty (2010), Singh (2011), Ray (2013), and Mahajan and Verma (2014), have employed various econometric methods and proxies for financial development to examine its impact on India's economic growth. However, the results regarding the direction of causality between financial development and growth have been mixed.

Das and Khasnobis (2007) focused on the transmission mechanism from financial intermediation to economic growth through credit. They identified long-term co-integrating relationships between financial development and credit allocation for different purposes, as well as the link between economic growth and short-term and long-term credit.

Pradhan et al. (2014) studied the nexus between trade openness, financial development, and economic growth in India. Their findings, using cointegration and Granger causality tests, indicated that trade openness, banking sector development, and stock market depth are co-integrated with economic growth, and the causality between variables is bi-directional.

Various studies have examined the relationship between finance, trade, and economic growth in India. Katircioglu and Benar (2007) found a unidirectional causation from real income growth to trade growth and a bidirectional causation between financial sector development and economic growth.

Sehrawat and Giri (2015) investigated the impact of financial development on the growth of Indian states from 1993 to 2012. Their panel cointegration and causality analysis revealed that per capita credit and per capita deposits have a causal relationship with economic growth, and there is a bi-directional relationship between credit and deposits.

The discussion of structural breaks in India's GDP growth history is also relevant to this study. Wallack (2003), Rodrik and Subramanian (2004), Hatekar and Dogre (2005), and Balakrishnan and Parameswaran (2007) conducted studies to identify structural breaks in different time periods. The specific years defining these breaks vary, with different studies suggesting breakpoints in the 1980s or 1990s.

Panagariya (2004) argued that although the growth in the 1980s was higher than in previous periods, it was fragile and led to a crisis in 1991. He attributed the sustainable growth from 1992 onwards to the systematic reforms implemented in the 1990s.

Singh (2005) also highlighted the structural change in the Indian economy, influenced by political and economic factors, particularly after the emergency of 1975-77. He noted that the structural reforms of 1991 brought about consistent high growth rates since 1992.

All the above studies provide insights into the relationship between financial development and economic growth in India, considering various causal directions, transmission mechanisms, and the presence of structural breaks in the country's growth history. A fundamental characteristic of credit is that it functions as an intermediate input in agricultural production rather than a direct input. This distinction makes credit an enabling input with a complex role in farmers' production decisions, unlike physical inputs that have a more straightforward relationship with output levels.

The impact of agricultural credit on agricultural production, efficiency, and productivity can occur through multiple channels. A simplified conceptualization identifies three pathways through which formal credit can influence outcomes. First, formal credit can be utilized to purchase inputs during the cropping season, allowing farmers to maximize the yield from their cultivated land, given a certain level of capital stock. This channel directly affects production within the season. Second, formal credit can be used to make investments in irrigation facilities, machinery, and draft animals, which contribute to building up the capital stock that supports agricultural production. This second channel typically impacts production with a time lag. Both of these channels represent a "liquidity effect" as they alleviate a farmer's credit constraints and enable the purchase of critical inputs to support production.

Third, formal credit often replaces high-interest informal credit obtained from moneylenders. Anecdotal evidence suggests that farmers often borrow from formal sources to pay off loans with high-interest rates, resulting in a relief of credit constraints, reduced interest burdens, and lower levels of indebtedness. Existing economic literature on wealth effects and risk aversion suggests that this enables farmers to make decisions that increase profitability and efficiency. Even when formal credit is diverted to consumption, there may be an implicit wealth effect that impacts farmers' production decisions. This channel, incorporating a "consumption smoothing" effect, is often challenging to capture.

Formal agricultural credit can be seen to have two types of impacts. Firstly, it can enable a farmer to operate at the production frontier, utilizing input

levels that allow them to produce at the frontier among various feasible combinations of crops. Secondly, it can facilitate a farmer's transition to a superior production frontier, allowing them to produce more of one or more crops given a certain level of inputs. The first type represents a movement from within the production possibility set to the frontier, resulting in efficiency improvement. The second type represents a shift of the frontier itself, leading to productivity improvement. The impact of formal agricultural credit on agricultural output combines these aspects of productivity and efficiency effects.

Going through all these literatures provided us the necessary insights regarding the contribution of sectoral credit on economic growth. But, we couldn't find any such literature for the context of Nepal. So, we intend to fill the gap.

Data and Methods

Conceptual Framework

Sectoral credit stimulates GDP by enabling businesses in various sectors to invest in capital goods, technology, and infrastructure, thereby increasing production capacity and creating jobs, which boosts household incomes and consumer spending. Access to credit fosters innovation and productivity improvements, leading to new products and services and driving demand. Targeted credit promotes the development of specific sectors, enhancing economic diversification and resilience. Additionally, credit to households supports consumption, while infrastructure development reduces costs and enhances efficiency. These combined effects generate a multiplier effect, where increased spending and income lead to further economic growth and higher GDP.

Source of Data

This paper studies the influence of credit flow in the agriculture, industrial and service sector on the gross domestic product of Nepal. This paper is based on the quarterly time series data from Fiscal Year 2010/11 quarter 1

to Fiscal Year 2022/23 quarter 2 i. e., 50 quarters. Due to data availability constraint and the dominant market share of commercial banks, only the outstanding credit of commercial banks are taken into account. Data is collected as follow:

- **Real GDP (GDP)**: Here to quantify the economic growth, quarterly Real Gross Domestic Product (GDP) of Nepal at market' prices with base year at 2010/11 expressed as Million Rupees is taken from National Statistical Office, Government of Nepal. We used seasonally adjusted values in this analysis.
- Real Outstanding Credit of Commercial Bank to Agricultural Sector (AGCR): Outstanding Credit of Commercial Bank in Nepal to the agricultural sector at the end of each quarter is taken in Million Rupees from Nepal Rastra Bank. The nominal values are then divided by GDP deflator (base year 2010/11) of corresponding year to make it real outstanding credit to the agricultural sector.
- Real Outstanding Credit of Commercial Bank to Industrial Sector (INCR): Outstanding Credit of Commercial Bank in Nepal to the industrial sector at the end of each quarter is taken in Million Rupees from Nepal Rastra Bank. The nominal values are then divided by GDP deflator (base year 2010/11) of corresponding year to make it real outstanding credit to the industrial sector. Credit to following sectors are included:
 - Mines
 - Productions
 - Construction
 - Metal Productions, Machinery & Electrical Tools & fitting
 - Transportation Equipment Production & Fitting
- Outstanding Credit of Commercial Bank to Service Sector (SRCR): Outstanding Credit of Commercial Bank in Nepal to the service sector at the end of each quarter is taken in Million Rupees from Nepal Rastra Bank. The nominal values are then divided by GDP deflator (base year 2010/11) of corresponding year to make it

real outstanding credit to the service sector. Credit to following sectors are included:

- Transportation, Communications & Public Services
- Wholesaler & Retailers
- Service Industries

Descriptive statistics, trend plots and correlation matrix of variables are given in Annex 1, Annex 2 and Annex 3 respectively

Model

In our study we used four variables where the GDP is the dependent variable and outstanding credit to agriculture, industry, and the service sector are taken as independent variables. Thus the model is as follow:

GDP = f (Credit to Agriculture sector, Credit to Industry sector, Credit to service sector)

The linear estimate model of this is as below:

 $GDP_t = \alpha + \beta_1 AGCR_t + \beta_2 INCR_t + \beta_3 SRCR_t + \mu_t$

Where,

t = time period

 $GDP_t = Real GDP$

AGCR_t = Outstanding credit to agriculture sector in Real Value

 $INCR_t$ = Outstanding credit to industrial sector in Real Value

 $SRCR_t$ = Outstanding credit to service sector in Real Value

 μ_t = Stochastic error term

 $\alpha,\,\beta_1,\,\,\beta_2,\beta_3$ are regression parameters to be estimated

Unit Root Test

Augmented Dickey-Fuller Test is conducted to test whether variables are stationary or not. GDP is found to be stationary in level form i.e I(0) while AGCR, INCR and SRCR is found to be stationary in the first difference i.e I(1). Detailed result of unit root test is provided in Annex 4.

ARDL Bound Test

Since variables are the mixture of I(0) and I(1), we have chosen the Autoregressive Distributed Lag Model for estimation of our model. The result of the ARDL bound test shows that F-statistic is greater than both lower bound and upper bound at 95% confidence level. Thus, cointegration exists. The lag scheme is selected as ARDL(1,4,0,0). The detail result of ARDL bound test is provided in the Annex 5.

Result and Discussion Long run Relationship

Table- 1
Estimated Long Run Coefficients using the ARDL Approach
ARDL(1,4,0,0) selected based on Akaike Information Criterion
46 observations used for estimation from 2010/11 q1 to 2022/23q2

	Dependent variable; GDP				
Variables	Coefficient	Standard Error	T-Ratio[Prob]		
AGCR	-1.4700	0.5772	-2.5467[0.015]		
INCR	-0.2766	0.2307	-1.1988[0.238]		
SRCR	0.7884	0.2445	3.2249[0.003]		
C	328581.00	24664.90	13.3218[0.000]		
R^2 = 0.94768 Adj. R^2 = 0.93637 DW-statistic= 2.0824 F-Stat.(8,37)=					

R²= 0.94768| Adj. R²= 0.93637| DW-statistic= 2.0824| F-Stat.(8,37)= 83.7814[0.000]

Table-1 presents the long-run coefficients of the model. The coefficient of AGCR is statistically significant below 5 percent and is negative, whereas the coefficient of SRCR is significant below 1 percent and positive.

Statistically, if Rs. 1 million agricultural credit is to be increased then GDP will decline by Rs. 1.47 million, other variables remaining constant. If credit to the service sector is to be increased by Rs. 1 million, the GDP will rise by Rs. 0.788 million. The intercept of the model is 328581. However, the coefficient of INCR is insignificant, despite having a negative impact. The intercept of the model is 328581, and it is significantly below 1 percent. The R-squared is 94.77 percent.

Error Correction Model

Table 2: Error Correction Representation for the Selected ARDL Model ARDL(1,4,0,0) selected based on Akaike Information Criterion 46 observations used for estimation from 2010/11 q1 to 2022/23q2

	Dependent variable; dGDP				
Variables	Coefficient	Standard Error	T-Ratio[Prob]		
dAGCR	0.4479	0.6347	-0.7055[0.485]		
dAGCR1	0.2410	0.6127	0.3932[0.696]		
dAGCR2	0.0234	0.7496	0.0311[0.975]		
dAGCR3	2.1097	0.7256	2.9070[0.006]		
dINCR	-0.1584	0.1251	-1.2660[0.213]		
dSRCR	0.4514	0.1477	3.0566[0.004]		
ecm(-1)	-0.5726	0.1359	-4.2142[0.000]		

 R^2 = 0.4487 | Adj. R^2 = 0.3295 | DW-statistic= 2.0824 | F-Stat. F (7,38)= 4.3019[0.001]

Table- 2 depicts the short-run error correction model. The coefficient of the error correction model, i.e. ecm(-1) is negative and significant under 1 percent. The coefficient is -0.5726, which means 57.26 percent of the disequilibrium in the previous years is corrected within one year. The coefficient of forth lag order of AGCR is positive and is statistically significant below 1 percent. The coefficient of 2.1097 indicates that with an increase of Rs. 1 million in Agriculture credit, GDP will go up by Rs. 2.11 million in the short run. However, the first, second, and third lag order

of AGCR are statistically insignificant coefficients, yet have a positive impact in the short run. Likewise, SRCR also has a positive and significant impact below 1 percent, on GDP. the coefficient of 0.4514 indicates that an Rs. 1 million increase in credit in the service sector will raise GDP by Rs. 0.45 million. INCR has a negative impact on GDP but is statistically insignificant. The R-squared is 44.87 percent.

The results suggest that in the long run, there is a significant impact of agriculture sector credit and service sector credit on GDP. Agriculture credit has a negative impact, whereas service credit has a positive effect on GDP. In the short run, agriculture credit has a significant positive impact on GDP after 4-time lags, and service sector credit have a similar impact but at 0-time lag. however, industrial sector credit have negative impact on GDP, but is insignificant on both long run and short run. The results is consistent with the findings of Balago, (2014), Abdi, (2017) and Athari, et. al.(2022), on of impact of service sector credit on GDP, but is not consistent with the findings of long run agriculture sector credit and industrial credit, as those studies showed positive and significant impact of agriculture sector credit and industrial sector credit. However short run impact of agriculture credit is matched. Likewise, the findings of impact of agricultural credit on GDP doesnot agree with Narayanan, (2015), which found positive and significant impact of agriculture credit. Thus upon linking with other literatures, the result is consistent in terms of impact of service sector credit in the long run and short run, the impact of agriculture credit in short run. However, results of impact of industrial sector credit in both the long run and short run, and the impact of agricultural sector credit in the long run is totally different from the results from the mentioned literature.

Conclusion

Based on the results obtained from the analysis, this paper examined the contribution of sectoral credit to the economic growth of Nepal. The findings reveal significant insights into the relationship between credit

allocation and GDP in the long run and short run. In the long run, the study demonstrates a significant impact of agricultural sector credit (AGCR) and service sector credit (SRCR) on GDP. AGCR shows a negative impact on GDP, indicating that an increase of Rs. 1 million in agricultural credit leads to a decline in GDP by Rs. 1.47 million. On the other hand, SRCR exhibits a positive impact, suggesting that an Rs. 1 million increase in credit to the service sector results in a rise in GDP by Rs. 0.788 million. In the short run, the study reveals that AGCR has a significant positive impact on GDP after a lag of four periods, while SRCR has an immediate positive impact on GDP.

These findings indicate that an increase in agricultural credit boosts GDP in the short run after a certain lag, and an increase in service sector credit has an immediate positive effect on GDP. However, industrial sector credit (INCR) shows a negative impact on GDP, although it is statistically insignificant in both the long run and short run. The impact of industrial sector credit differs from previous studies that reported a positive and significant association.

In conclusion, this research provides valuable insights into the contribution of sectoral credit on the economic growth of Nepal. The findings indicate a significant positive impact of service sector credit on GDP in both the long run and short run. Additionally, agricultural sector credit has a negative impact on GDP in the long run, while its positive impact is observed in the short run after a certain lag. However, the results for industrial sector credit are inconclusive. These findings contribute to the existing literature by shedding light on the specific dynamics of credit allocation and their effects on economic growth in Nepal. Further research is needed to explore the underlying mechanisms and policy implications for fostering sustainable economic growth in the country.

References

- Athari, S. A., Kirikkaleli, D., Wada, I., & Adebayo, T. S. (12 2022). Examining the Sectoral Credit-Growth Nexus in Australia: A Time and Frequency Dynamic Analysis. *Journal of Public Affairs*, 22, e2328. doi:10.1002/PA.2328
- Guru, B. K., & Yadav, I. S. (6 2019). Financial development and economic growth: panel evidence from BRICS. *Journal of Economics, Finance and Administrative Science*, 24, 113–126. doi:10.1108/JEFAS-12-2017-0125/FULL/PDF
- Abdi, H. (2017). Effects of Sectorial Allocation of Commercial Bank Credit on Ethiopian Economic Growth: An Empirical Analysis. Retrieved from http://repository.smuc.edu.et/handle/123456789/3000
- Singh, C. (9 2016). Finance for Micro, Small, and Medium-Sized Enterprises in India: Sources and Challenges. *SSRN Electronic Journal*. doi:10.2139/SSRN.2833748
- Sehrawat, M., & Giri, A. K. (9 2015). The role of financial development in economic growth: empirical evidence from Indian states. *International Journal of Emerging Markets*, 10, 765–780. doi:10.1108/IJOEM-05-2014-0064/FULL/XML
- Narayanan, S. (2015). The Productivity of Agricultural Credit in India. *Indira Gandhi Institute of Development Research*. Retrieved from http://www.igidr.ac.in/pdf/publication/WP-2015-01.pdf
- Mahajan, N., & Verma, S. (2014). Financial Development and Economic Growth: A Case of Indian Economy. *International Journal of Economics, Finance and Management*, 3. Retrieved from http://www.ejournalofbusiness.org
- Pradhan, Rudra P., Arvin, B. M., Norman, N. R., & Nishigaki, Y. (2014). Does banking sector development affect economic growth and inflation? A panel cointegration and causality approach. *Http://Dx. Doi. Org/10. 1080/09603107. 2014. 881968, 24*, 465–480. doi:10.1080/09603107.2014.881968

- Balago, G. S. (2014). Nexus between Bank Credit and Economic Growth in Nigeria: Evidence from VEC Model. *OALib*, *01*, 1–12. doi:10.4236/OALIB.1100952
- Ray, S. (2013). Does Financial Development Promote Economic Growth in India? *International Journal of Economic Practices and Theories*.
- Hassan, M. K., Sanchez, B., & Yu, J. S. (2 2011). Financial development and economic growth: New evidence from panel data. *Quarterly Review of Economics and Finance*, *51*, 88–104. doi:10.1016/J. OREF.2010.09.001
- Chakraborty, I. (6 2010). Financial Development and Economic Growth in India: An Analysis of the Post-reform Period Indrani Chakraborty, 2010. *South Asia Economic Journal*, 40, 1615–1627. doi:10.1080/00036840600892886
- Pradhan, Rudra Prakash, & Gupta, V. (2009). The Nexus between Financial Development and Economic Growth in India: Evidence from Multivariate VAR Model. *International Journal of Research and Reviews in Applied Sciences*, Vol. 1, pp. 2076–7366.
- Das, P. K., & Guha-Khasnobis, B. (2008). Finance and Growth: An Empirical Assessment of the Indian Economy. *Financial Development, Institutions, Growth and Poverty Reduction*, 120–140. doi:10.1057/9780230594029_6
- Balakrishnan, P., & Parameswaran, M. (2007). Understanding Economic Growth in India: A Prerequisite on JSTOR. *Economic and Political Weekly*, *34*, 586–598. doi:10.1108/03068290710778615/FULL/XML
- Hatekar, N., & Dongre, A. (2005). Structural Breaks in India's Growth:

 Revisiting the Debate with a Longer Perspective. *Economic and Policy Weekly*. Retrieved from https://www.jstor.org/stable/4416428
- Singh, C. (2005). STANFORD CENTER FOR INTERNATIONAL DEVELOPMENT Working Paper No. 241 Financial Sector Reforms in India.

- Rodrik, D., Subramanian, A., Aiyar, S., Mattoo, A., Rajan, R., Sinha, S., ... Williamson, J. (2004). From Hindu Growth to Productivity Surge: The Mystery of the Indian Growth Transition; Dani Rodrik and Arvind Subramanian; IMF Working Paper 04/77; May 1, 2004.
- Wallack, J. S. (2003). Structural Breaks in Indian Macroeconomic Data. *Economic and Political Weekly*. Retrieved from https://www.jstor.org/stable/4414130
- Levine, R., Loayza, N., & Beck, T. (2000). Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics*, 46, 31–77.
- Minsky, H. P. (5 1992). The Financial Instability Hypothesis. *SSRN Electronic Journal*. doi:10.2139/SSRN.161024
- Carter, M. R. (7 1989). The impact of credit on peasant productivity and differentiation in Nicaragua. *Journal of Development Economics*, 31, 13–36. doi:10.1016/0304-3878(89)90029-1
- Feder, G., Lau, L. J., Lin, J. Y., & Xiaopeng, L. (12 1989). Agricultural credit and farm performance in China. *Journal of Comparative Economics*, 13, 508–526. doi:10.1016/0147-5967(89)90024-3
- Jung, W. S., Jung, & S, W. (1986). Financial Development and Economic Growth: International Evidence. *Economic Development and Cultural Change*, *34*, 333–346. doi:10.1086/451531
- McKinnon, R. I. (1973). Money and capital in economic development,. *The Brookings Institution*, 184.
- Shaw, E. S. (edward S. (1973). Financial deepening in economic development. 260.
- Patrick, H. T. (1 1966). Financial Development and Economic Growth in Underdeveloped Countries. *Economic Development and Cultural Change*, *14*, 174–189. doi:10.1086/450153
- Tobin, J. (10 1965). Money and Economic Growth. *Econometrica*, *33*, 671. doi:10.2307/1910352
- Schumpeter, J. A. (1934). The theory of economic development. Harvard economic studies, vol. XLVI. *Harvard Economic Studies*, *34*, 255.

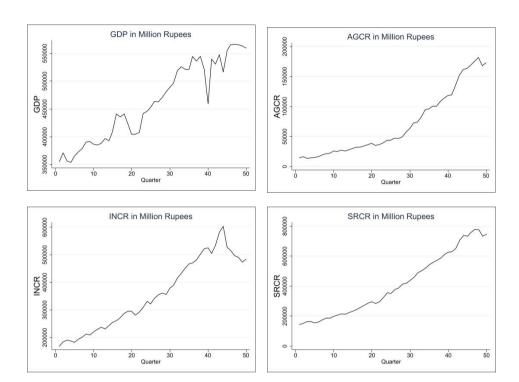
 Retrieved from https://www.hup.harvard.edu/catalog.php?isbn=9780674879904

Annex

Annex 1: Descriptive Statistics

	GDP	AGCR	INCR	SRCR
Mean	461148.1	70328.39	355274.1	410280.9
Median	455981	45103.48	336651.9	367062.35
Standard	70230.72	53889.37	127744.8	209103.71
Deviation				
Kurtosis	-1.4451	-0.6985	-1.3209	-1.238856
Skewness	0.0598	0.831	0.2116	0.4009104
Minimum	353550	13671.68	168864.2	143422.21
Maximum	566784	181888	603953.6	778394.58
Count	50	50	50	50

Annex 2: Trend graph



Annex 3: Correlation Matrix

	GDP	AGCR	INCR	SRCR
GDP	1			
AGCR	0.9099	1		
INCR	0.9387	0.9246	1	
SRCR	0.954	0.9816	0.9703	1

Annex 4: Unit Root Test: Augmented Dickey-Fuller Test

	P-Value						
	Level Form		First D	Remarks			
	Intercept	Trend and	Intercept	Trend and			
		Intercept		Intercept			
GDP	0.2471 0.0472**				I(0)		
AGCR	0.9113	0.9113 0.8137		0.0028***	I (1)		
INCR	0.1710	0.1710 0.6732		0.0002***	I (1)		
SRCR	0.7104	0.4039	0.0000***	0.0000***	I (1)		
* Significant at 10% ** Si			icant at 5%	*** Signifi	cant at 1%		

Annex 5: ARDL Bound Test

	ARDL Bound Test: f(GDP AGCR,INCR,SRCR) : ARDL(1,4,0,0)						
F-	Lower	Lower Upper Lower Upper Remarks					
Statistics:	Bound 95%	Bound 95%	Bound 90%	Bound 90%	Signific		
5.7518	3.5543	4.7036	2.9081	3.9957	ant at		
					95%		

Annex 6: Time Series Data

	T 7	Values in Million Rupees (base year 2010/11)				
S.N	Year-	Real	Real Agriculture	Real Industry	Real Service	
	Quarter	GDP	Sector Credit	Sector Credit	Sector Credit	
1	2010/11 Q1	354556	14620.47	168864.2	143422.2	
2	2010/11 Q2	370803	16143.2	184272.9	151105.3	
3	2010/11 Q3	356489	13671.68	189902.2	163617	
4	2010/11 Q4	353550	14160.19	186999.5	165162	
5	2011/12 Q1	364815	15013.48	182677.5	155834.9	
6	2011/12 Q2	372167	16224.16	194415.8	161839.3	
7	2011/12 Q3	378429	19192.3	200866.9	173845.6	
8	2011/12 Q4	390478	21725.5	212387.5	185848	
9	2012/13 Q1	391503	22531.71	209244.6	186901.3	
10	2012/13 Q2	386394	25876.97	221104.7	197962.8	
11	2012/13 Q3	384689	25147.42	230171.6	205997.2	
12	2012/13 Q4	387866	27330.1	237988.6	215472.2	
13	2013/14 Q1	396463	26129.82	231608.4	211301.3	
14	2013/14 Q2	392819	27685.63	244338.8	224467.1	
15	2013/14 Q3	409183	30503.84	255250.4	234074.9	
16	2013/14 Q4	440780	32308.44	261420.6	245065.1	
17	2014/15 Q1	435375	32237.73	272169	258693.8	
18	2014/15 Q2	440742	34620.96	287269.6	272590	
19	2014/15 Q3	422501	36934.81	295241.8	288782.7	
20	2014/15 Q4	404685	38963.35	295641.1	296592.4	
21	2015/16 Q1	404294	35256.21	280750.7	285132.4	
22	2015/16 Q2	407381	36328.9	291859.3	296004.5	
23	2015/16 Q3	442190	39842.08	309732.5	325338.9	
24	2015/16 Q4	445425	43835.02	330905.2	357613.7	
25	2016/17 Q1	453061	43520.58	322770.6	351842.3	
26	2016/17 Q2	463814	47201.07	342398.6	376511	
27	2016/17 Q3	463109	46371.93	354992.9	388864.9	
28	2016/17 Q4	471021	49912.65	361032	412505.6	
29	2017/18 Q1	481068	57572.31	356556.1	419509	
30	2017/18 Q2	489439	63846.49	379575.3	440903.9	
31	2017/18 Q3	496495	72377.32	388721.5	456714.1	
32	2017/18 Q4	518719	73909.12	415430.7	489283.3	
33	2018/19 Q1	525650	82715.61	433089	502588.2	
34	2018/19 Q2	521203	95071.12	452102.1	520526.9	

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	Year-	Values in Million Rupees (base year 2010/11)				
S.N		Real	Real Agriculture	Real Industry	Real Service	
	Quarter	GDP	Sector Credit	Sector Credit	Sector Credit	
35	2018/19 Q3	521411	96361.24	467580.3	543467.9	
36	2018/19 Q4	544877	100672.2	469822.9	556347.8	
37	2019/20 Q1	536499	100327	481727.1	571155.6	
38	2019/20 Q2	545009	108342.9	501464.3	586171.9	
39	2019/20 Q3	521060	113910.7	521829.1	611545.5	
40	2019/20 Q4	458901	118516.8	525757	627129.7	
41	2020/21 Q1	540293	119041.6	505499.1	628837.9	
42	2020/21 Q2	530722	135095.7	535060	653787	
43	2020/21 Q3	547931	152151.5	581558.6	708454.2	
44	2020/21 Q4	516580	161996	603953.6	739520.6	
45	2021/22 Q1	555991	163505.4	526424.4	731932	
46	2021/22 Q2	565893	168764.2	515433.4	757685	
47	2021/22 Q3	566784	175334.3	497251.9	778394.6	
48	2021/22 Q4	565436	181888	491485.8	776146.7	
49	2022/23 Q1	563495	168263.1	473201.8	733404	
50	2022/23 Q2	559366	173466.9	483902.4	748150.9	

Source:

GDP data: National Statistics Office Credit data: Nepal Rastra Bank