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THE ROLE OF BANK CREDIT FOR THE DEVELOPMENT OF INDUSTRY IN KERMAN

Mohammad Ghezelayagh¹ and *Hossein Saeedi²

¹Department of Statistics, College of Mathematics and Computer, Shahid Bahonar University of Kerman ²Department of Management, Kerman Branch, Islamic Azad University, Kerman, Iran *Author for Correspondence

ABSTRACT

Financial resource is one of the basic institutions for the provision of other inputs and finally for production of industrial products that manufacturers typically have some direct and indirect restrictions in supplying it. The research population is made up of industries in Kerman province among them 180 employees have been selected randomly and using RST model the credit components of the development of the industrial sector has been studied. Components of credits include reducing interest rates, easier access to loans, and accordance of the loan to the conditions. The results indicate that the reduction in interest rates, easier access to loans, and accordance of the loan to the conditions have positive role in the development of the industry. So by considering results managers can make better decisions about how to upgrade the industrial sector and increase industrial sector production.

Keywords: Credit, Development of Industry and the RST Model

INTRODUCTION

The main task of the financial markets, including money and capital markets, is equipping large and small savings and channeling them to fulfill needs of enterprises. In other words, the market is more active in recruiting, mobilizing and allocating financial resources and with this method, it consists of a large number of financial capital of an economy, since the motivation for savings, lending and capital utilization are formed in the same market, establishing appropriate mechanisms to collect savings and applying in the required fields and sectors of the economy is of particular importance (Hadinezhad and his colleague, 2008). Industrial sector has been examined in terms of its great importance in economic growth and development. Manufacturers and investors in this sector, in order to sustain production and investment are needed to finance and due to high investment costs and the heavy costs of providing the raw material for the production, sometimes their need to have enough liquidity to continue their activities in this field is important. Sometimes firms hold some assets to meet their liquidity or a change in the composition of these assets try to maintain the optimum combination of efficiency and liquidity for themselves and banking system can also play an active role in providing short-term liquidity needs of manufacturing firms.

Because the system is able to help continuity and growth of these sectors and to finance new investment and liquidity supply by granting bank credit in certain situations. The main task of the financial markets, including money and capital markets, is equipping large and small savings and channeling them to fulfill needs of enterprises. In other words, the market is more active in recruiting, mobilizing and allocating financial resources and with this method; it consists of a large number of financial capital of an economy, since the motivation for savings, lending and capital utilization are formed in the same market, establishing appropriate mechanisms to collect savings and applying in the required fields and sectors of the economy is of particular importance (Seifipour, 2001). Industrial sector has been examined in terms of its great importance in economic growth and development. Manufacturers and investors in this sector, in order to sustain production and investment are needed to finance and due to high investment costs and the heavy costs of providing the raw material for the production, sometimes their need to have enough liquidity to continue their activities in this field is important. The banking system can play an active role in fulfilling short-term liquidity needs of productive firms. On the other hand, the banking system in Iran has features such as the rationing of credit, interest rate ceilings and others. Due to this problem, checking

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the bank credit and its role in the financing of investments in the industrial sector is of particular importance. Thus, the aim of this study will evaluate the effect of bank credit on the development of industry in Kerman.

Research Literature

Financial sector of the economy can be considered as a set including savers, borrowers and financial institutions which have mutual relationships with each other. In fact, the financial sector is a set of financial institutions that have been established and work to facilitate the flow of money and credit among businessmen, households and government.

Theory of Financial Strangulation

MacKinnon's theory that is known as the theory of financial strangulation emphasizes limited government intervention in the money and capital markets and greater reliance on market mechanisms for the allocation of credit and capital in these markets. Based on this perspective, more competition in the money and capital market and private entities growth lead to improve the allocation of capital and in this process, the price (interest rate) in the capital market reduces the gap between social and private costs of capital. As a result, the social performance of capital resources increases. Inappropriate government intervention in the money and capital market leads to restriction and retardation in the financial sector. Fixing the interest rate on inflation and manifesting negative interest rate for savers in banking network is one of the main reasons for the lack of financial deepening in developing countries. According to this view, the negative interest rate reduces savings and reduces the size of the network of banking intermediation in credit allocation and the absorption process. It also changes the composition of the portfolio of economic agents in benefit of physical assets (such as durable goods, land and real estate) and foreign currency assets and gold. These savings have low social productivity, because although they are kinds of saving, but they have no direct effect on the increase in production and usually policymakers to avoid the tendency of economic agents for buying and selling or transferring exchange to the outside, establish some restrictions, although they somewhat reduce the acceptance of this type of asset, but in practice and based on historical and international observations, the policy is not entirely successful in taking the currency out of the country and the desire to keep it by local agents. Also, since the negative interest rates, create the gap between private and social returns on investment; this phenomenon leads to abnormalities in the selection of the optimum process in time of consumption. Positive real interest rate may lead to additional financing for investment projects, because increasing the monetary relative efficiency leads economic agents to favor higher yields of financial assets and less tendency to hold assets such as durable goods, real estate, currencies and gold. This change in the portfolio of assets in terms of increasing the volume of deposits will increase bank network reliability. Thus, a greater number of investment projects are financed through banks. The positive change in those countries that restrict the variety of financial assets and their financial instruments consist mainly of bank deposits and cash is very important.

Theory of Financial Constraints

Some economists argue that policies applied by government to the allocation of capital and credit, if properly and logically developed, help economic growth and development. This attitude has even considers implementation of a policy of low interest rates to influence economic growth, positive. Of course, government interventions do not necessarily improve money and capital market performance, especially if these policies are not appropriately developed, in this case, the interference effects may be worse than the consequences of market failure. In financial constraints view it is assumed that information in money and capital markets is incomplete and the final cost of obtaining information is quite impressive. Allocation of capital resources (credit) in the market system, are not optimal due to the unequal and asymmetric distribution of information and also because of the costs of monitoring and enforcement costs of financial contracts. In other words, the market mechanism doesn't lead to efficient allocation of capital and credit and lending to the best user. Information asymmetry between lenders and borrowers may lead to give loans to individuals (natural or legal) who are not eligible. In this case, the problem of adverse selection exists, or loans are allocated to inefficient people that cause the phenomenon

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of moral hazard that requires government intervention in the process of allocating funds. In financial constraints model, the medium financial strangulation accompanied with control of the interest rate and in some cases causes the negative interest rate (as opposed to the theory of financial strangulation), it does not reduce the savings. In some cases, it can increase the savings. Regarding the negative interest rates, this group of economists believes that if interest rates are negative and limited and non continuous, because this makes the distribution of income from the public sector to corporate production so it can contribute to the growth of investment and production. But if inflation is much more than the interest rate and financial strangulation is maintained, it will have negative effects on economic activity and growth.

Perspectives of Different Economic Schools on the Effects of Monetary Policies on Production and Employment

In the economic literature many discussions related to influence of money and monetary policies on real variables such as production and employment have been done. The most important ideas among them have been presented in the various schools of economic briefly as presented below.

Classics and Neoclassic Attitudes

From the viewpoint of this school the price theory can be expressed as the price theory. Classical economists such as Smith and C. argue that money is neutral in the long run and full employment equilibrium is a long-term phenomenon. In their opinion inflation is resulted from increasing the amount of money in the economy equilibrium at full employment, while prices increases don't affect real variables such as production, employment, real salary (Tafazzoli, 2001).

Keynesians View

Keynes is one of the economists who have provided extensive comments about money. For the first time he introduced the money market as a place for determining interest rate and entered the speculative motive in money demand, unlike classics he believed that the market is quite distinct from the commodity market. He believed the connecting link between the money market and goods is investment and the increase in the liquidity does not affect aggregate demand and output. However, money and monetary policy can affect the level of production (Mankiw, 2007).

Monetary Perspective

According to Friedman, the leader of the school, money supply and demand determinants national income and any changes in the money supply will cause changing the nominal value of GDP. Friedman and his colleagues believe that changes in the money supply from a direct channel that is trade of Fischer have certain impact on monetary earnings, as a result, monetary policy will have the greatest effect on nominal output. It should be noted that in the Polion School, increasing the volume of money in the short term can have significant effects on the gross national production, but in the medium and long term, increasing the amount of money has the inflation effect. Natural rate hypothesis proposed by Phelps and Friedman mentions classic theory of Polion as a more modern approach and like its predecessors emphasizes on the ineffectiveness of monetary policies on employment and production in the medium term and long term (Friedman, 1969).

New Classic

Economists of the school with regard to the formation of rational expectation believe that firms and individuals use all available data for economic decisions, such inventory data and predictions by economic actors cause that unexpected monetary policies in the short term will be effective on the production. In the long term these policies are ineffective in production level (Mankiw, 2007).

New Keynesian

Meanwhile supporting fiscal policy, economists of this school believe that using active monetary policy (rather than continuous policy of growth of money supply and new classical school) is also useful for dealing with economic fluctuations. One of the results that one of this school fans, Stanly Fischer, has shown is that a model can be provided by rational expectations in which applying coordinated monetary policy is able to restore the economy to equilibrium (Tafazzoli, 2008).

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Research Background

Research examining the relationship between financial situation and economic growth in the 1980s using the variable of interest rate believed that positive real interest rate is associated with growth, since positive real interest rates improve the quality of investments and as a result, the growth rate of production and consequently, financial savings are increased.

Khan and Vilano (1991) examined the effect of the real interest rate on growth for 23 countries. Their results show that the real interest rate has a greater positive impact on the growth of per capita GDP. On the other hand, economists, such as Gregory and Godoti (1993) believe that the interest rate cannot be an appropriate indicator of financial repression; because the relationship between real interest rates and growth is similar to the converse U curve, it means at low or even negative levels the real interest rates reduces economic growth that represents Mckinon Shaw hypothesis, on the other hand, the higher real interest rates also don't reflect the investment performance improvement. They propose using index of credit allocated to the private sector to GDP ratio rather than the real interest rate.

King and Levine examine the relationship between financial development and growth in Neoshompititry model. For this purpose, the results indicate a positive relationship between each of the financial indicators (Cash debt to GDP, ratio of domestic banks' assets to total assets of banks (including central banks), the ratio of demands of the private nonfinancial sector to credit and the ratio of demands of the private nonfinancial sector to GDP ratio) and each of the indicators of economic growth (growth rate, fixed capital formation ratio to real GDP, growth rate of the capital stock). Also, entering the initial values of each financial index indicates that countries with more developed financial level at the beginning of the period under review, experience a more rapid growth. In other words, the level of financial development can be a good predictor for future economic growth. It means financial development affects economic development. Also, the impact of financial intermediaries on economic growth is through increasing efficiency of investment. Monge and Hall (2003) have studied the effect of access to Banking facilities on manufacturing firms. Their results indicated that access to credit has a positive impact on the performance of manufacturing firms and their employment. Ayuziyan and Santor (2008) studied the World Bank's impact on small and medium enterprises in Sri Lanka. The results of this study showed that The World Bank credit program reduces financial limits of firms and have increased their investment levels. Bernanke and Gretler (1995) believe that a restrictive monetary policy leading to reducing bank lending, causing a steady decline in the purchasing power of consumers.

In addition, Bernanke and Blinder (1992) showed that restrictive monetary policy; reduce costs indirectly by reducing the supply of bank loans, because monetary contraction will reduce deposits in the banks' balance sheet liabilities. Assuming that loans and securities in the Bank's balance sheet assets are imperfect substitutes of each other, banks are not willing to fully absorb losses through reducing maintenance of deposited securities, consequently, under these circumstances, monetary contraction will reduce the supply of bank loans. Taylor *et al.*, (1968) by evaluating the efficiency and productivity of agricultural credit in Brazil by comparing two groups of borrowers and non-borrowers have evaluated technical, allocative and economic efficiency of each group and showed that the average technical efficiency of the borrower group is more than non borrowers and the allocative efficiency of borrower group is 70% while the allocative efficiency of non-borrower group is 5.76 percent. Hivalsig and Mayer ((2005 in the German study showed that In accordance with the credit channel, monetary policy is effective on investment level and consumer spending is affecting on changes in capital cost and efficiency of savings. They also point out that the conduct of monetary policy is more affecting the lending of small banks especially with a balance sheet with less cash. This means that by effect of a contractionary shock of monetary policy, supply and demand for loans in small banks gradually decrease.

Brown *et al.*, (2005) studied the determinants of the growth of small firms in Romania. The results of the study showed Credits are the most important factor in encouraging and setting up small firms and they have important role in small firms' employment and sales.

Amini (2001), in a study entitled studying the effects of the banking facilities on labor supply and demand, studied the impact of monetary policy on the labor market in the industrial sector. On the job

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demand, at first the effect of real money on total employment has been studied and finally, this result is obtained that the real money volume in the long term has positive effects on employment and affecting employment by the monetary policy in the short term is not statistically significant. The sheer volume of credits granted by banks to the mining industry in the short-term has positive effect on employment and there is no difference between short-term employments to bank credit. On the labor supply, amount of money has no significant effect on the labor supply of men by increasing the general level of prices. Haghighi (2003) examined the effect of monetary policies on the employment in industry in Iran. Effective mechanism of monetary policy, with emphasis on the Polion perspective (originality of money school) is defined in this study. The results reflect the fact that in the short term there is no significant relationship between changes in the monetary and employment in industry sector, but there is a weak and significant relationship in the long run. Nsabian and Khalaj (2001) studied the effect of agricultural bank credit on two variables of investment and value added. The result of the study shows that Keshavarzi Bank credit has no long-term relationship with two variables of value added and investment. Chizari and Zare (2000) examined the effects of the funds allocated to the agricultural sector of Mazandaran Province by Melli and Keshavarzi banks. The purpose of this study is to evaluate the impact of banks credit provided by Melli and Keshavarzi banks on agricultural production and comparing them with each other and comparing the individual features of credit-makers in the region. The results suggest that facilities provided by Melli and Keshavarzi banks has had significant positive impact on agricultural production and comparing borrowers from Melli and Keshavarzi banks shows the effect of credit granted on their production that has not significantly different from each other. The final values of the facilities of both banks are larger than interest rates (interest) and farmers will benefit from the additional loans. Fahim, Yahyaiee and Falihi (2003) studied the effects of monetary and fiscal policies in the industrial sector in a research. The impact of the monetary variables, weighted exchange rate and bank credit on real variables in the industrial sector (manufacturing, investment and employment) has been made through designing the equation of production, investment and employment. The equations' estimated results show that the actual volume of monetary and credit has positive impact on the production of this sector but the impact of bank credit on the production is smaller than its positive effect on investment and the main reason of it is the existence of unfinished projects in the public and private sectors.

Also, the results show that the impact of bank credit on employment is not significant. Weighted exchange rate increases have no positive impact on production and employment in the industrial sector and the positive effects of devaluation (through increased exports) is less than the negative effects of this policy (increasing inflation and reducing imports of capital and intermediate goods). Sadr (2003) in his paper entitled "Measuring the impact of credit on value added of agricultural sector' has shown the impact of credit on value added of agricultural sector' has shown the impact of credit on value added of agricultural sector. The sector is the agricultural capital VAT through capitalization.

MATERIALS AND METHODS

This research is an applied one and in terms of methodology it is a survey research. Then the research variables, data collection tools and methods, validity and reliability, the population and the sampling and data analysis are discussed. In this research credit variables include component of reducing interest rates, easier access to loans, appropriateness of the loans with industry conditions and the development of the industry.

In this study, a questionnaire was used that was related to facilities and each component is evaluating by some questions and to answer the questions the Likert scale is used. The population of this study consisted of all employers of industries. In this study, the sampling method was simple random sample and the size is equal to 180 people.

Analysis Method

RST method has been used in inferential statistics to examine the relationship between variables. Rough set theory was developed in the early 1980s by Zdyslav Pavlak. This view is for expressing and checking issues where there is uncertainty and ambiguity. It provides powerful tool for ways to eliminate and

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reduce data redundancy and irrelevant data from the database. Including the lower and the upper approximation for sets of objects based on the properties of the objects.

To use this system, we define information theory as a flat table. Rows in the table are about objects and elements but the columns contain the features and characteristics of the decision. So IS= <U, AUD>, is a system of information / decision in which A $\cap D = \emptyset$ and mainly D has been a single component set and A={ a1, a2,...,ak} is non empty. Elements of A set are called conditional features.

For each non-empty set $B \subseteq A$, an equivalence of IB on U is defined as $IB \subseteq U^2 = U \times U$, as:

$$(\mathbf{x}, \mathbf{y}) \in \mathbf{IB} \equiv_{\mathbf{D}} \forall \mathbf{a} \in \mathbf{B}(\mathbf{a}(\mathbf{x}) = \mathbf{a}(\mathbf{y}))$$
(1)

In which a(x) shows (a) in element (x) from U. It is easy to show that this relation induces an equivalence of \cup . In fact, this means that two objects x and y of \cup are equivalent to the features of B when these two are the same to such features. To be more precise: the x and y values for each attribute (a) of B, is the same.

Equivalence class of x to IB element is defined as follows:

$$\forall a \in B(a(x) = a(y)) \} \cup x/IB = y \in (2)$$

And the set of all equivalence classes of elements x in U as is as follow:

$$U/IB = \{ x/IB \mid x \in U \}$$
(3)

Obviously, this collection gives a partitioning of the U. In addition for the partitioning P of U, an equivalence E (P) consisting of pairs (x, y) in U2 is defined as two elements x and y are in an element of the partition P. To be more precise, if $P = \{p1, p2, ..., pk\}$ is a partition of U. Then:

$$R = U_{j=1}^{k} (P_{j} \times P_{j})$$
(4)

An induced equivalence by the partitioning of \cup is P.

Equivalence class x / IB for $\in \bigcup X$ is called the preliminary sets and equivalence classes x/ID for x $\in \bigcup$ are called Concept Sets.

The overall process consists of sets:

$$X_{1}=\{x \in \bigcup | d(x) = d_{1}\}$$

$$X_{2}=\{x \in \bigcup | d(x) = d_{2}\}$$

$$X_{3}=\{x \in \bigcup | d(x) = d_{3}\},$$

$$X_{r}=\{x \in \bigcup | d(x) = d_{r}\}$$
(5)

In which $V_d = \{d1, d2, \dots, d_r\}$, is the set of decision values for all objects of \cup . Discernibility Matrix and reduction set of RED is defined as usual in the theory of Rough. Suppose: B = Red from RED set, we calculate the following sets:

IB(X1), IB(X1)

IB(X2), $I\overline{B(X2)}$,... $IB(X_r)$, $IB(X_r)$

So some of strong decision bases and some of the probable bases have been obtained by ROSE2 and the conclusion is resulted (Biobef, 1998).

(F) The Validity and Reliability

Reliability is one of the technical characteristics of measuring instruments. The mentioned concept deals with the fact that measuring instrument similar conditions to which extent provides the same conclusion. Cronbach's alpha was used to determine the reliability of the method. The validity or reliability of the questionnaire was calculated as 0.87. The validity has been confirmed by experts and is valid.

(6)

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According to survey of data collected from 180 questionnaires, classifying information is done as follows:								
Verbal values	Ranking	Classification range	Number of questions	Variable	Row			
low	0	10-25	8	Development of	1			
medium	1	26-40		industry				
high	2	40-50						
low	0	1-5	3	Reducing interest	2			
medium	1	6-10		rate				
high	2	11-15						
low	0	1-3	2	Appropriateness	3			
medium	1	4-6		of the loan with				
high	2	7-10		condition				
low	0	1-5	3	Ease of access to	4			
medium	1	6-10		loans				
high	2	11-15						

Discussion and Conclusions

In this study, two types of decision variables and conditional variables are considered. In conditional variables credit dimensions including interest rates, appropriateness of the loan with conditions, easy access to loans and decision variable develop the credit industry.

The final table of information according to classification is as follows:

Reducing interest	Appropriateness of loan with	Easy access	Industry	frequency
rate(A2)	industry condition	(A ₄)	development	(F)
	(A3)		(B)	
0	0	0	0	2
0	0	0	1	1
0	0	0	1	2
0	0	0	2	2
0	0	0	2	2
0	0	0	1	8
0	1	0	2	16
0	0	0	2	14
1	1	0	1	24
1	1	1	0	20
1	1	2	0	2
1	2	2	2	42
2	2	1	2	8
2	2	2	1	2
2	2	2	2	12
2	2	2	2	11
		total		18

The first law states that if reducing interest rates is too high and according to medium circumstances so development of the industry will be high. The second rule indicates that if reducing interest rates is high and ease of access to loans is average then development of the industry will be medium.

The third rule determines that if reducing interest rates is medium and ease of access to loans is evaluated average by industries managers then development of the industry will be high.

The forth rule indicates that if it is low and ease of access to loans is average then development of the industry will be low or medium.

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The fifth rule states that if reducing interest rates and ease of access to loans is evaluated average then development of the industry will be high and medium. According to the obtained results managers can decide on how to promote the industry sector in Kerman and they are able to achieve the desired results faster.

Conclusions and Recommendations

In order to identify the development of the industry, scholars have done many researches with statistical approach in order to help managers make better decisions. Approach of the research is more based on the credit quality components that are the link between these components and the development of industry that in the industrial sector development is positive and medium to high. When access to loans is easy, industries easily get loans and this leads to an increase in industrial production and will upgrade industry sector. Reducing interest rates leads to increasing loans and investments in the industrial sector and as a result it will entail the development of industry. Accordance of loan with industries' condition causes industry can easily take loans and this increase in investment and production in industry affect the increase in the liquidity of banks. On the other hand, it will raise credit and the greater the savings it will increase lending to industries and this leads to increased investment in the industrial sector.

Suggestions

1- According to the model results, it was observed that the credit has an important role in increasing the industry development; therefore, we should increase credit for the industry.

2- The development of credit institutions: credit institutions must be created to support the industrial sector and support artisans responsible for funding, with the aim of increasing the production of multi-adjusted revenue, facilitating acceptance of new technologies and

3- To enhance the development of the industry, continuity in the financing of the industrialists to reduce the financial constraints on the use of modern inputs is proposed.

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