

Financial repression, financial deepening and their effects on Iranian industrial development

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ABSTRACT

This research analyzes the effects of financial deepening as well as repression on industrial development in Iran. Using some time series data, the proposed study applies the method originally introduced by Johansen and Juselius (1990) [Johansen, S., & Juselius, K. (1990). Maximum likelihood estimation and inference on cointegration—with applications to the demand for money. *Oxford Bulletin of Economics and statistics*, 52(2), 169-210.] to measure the effects of these two factors on market development over the period 1970-2011. The results indicate that as the bank deposit increases, we may expect an increase on financial deepening and market development. On the other hand, as inflation increases, we could easily verify market repression and a reduction on market development. In addition, when there was an increase on loans dedicated to private sector, there was an increase on market development. Finally, there were some evidences to believe that currency devaluation could hurt market development by increasing the price of raw materials and market uncertainty.

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1. Introduction

Nowadays, industrial growth plays important role on market development and there are many attempts to detect the barriers such as financial repression and offer possible remedies to remove them. Financial repression (Fry, 1980) is any type of the measures, which governments use to channel funds to them, that, in a deregulated market, could go elsewhere and financial repression can be specifically influence at liquidating debt. Roubini and Sala-i-Martin (1992) presented a theoretical and empirical analysis of the relationship between policies of financial repression and long-term growth. They used a model of financial repression, inflationary finance and endogenous growth. They recommended that governments might select to repress the financial sector because this policy could increase the demand for money and delivers easy inflationary revenues. They also explained that policies of financial repression could reduce the growth rate of the economy. In addition, Roubini and Sala-i-Martin (1992) reported that, after controlling for policies of financial repression, a regional

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dummy for Latin America in growth regressions could become insignificant, which suggests that a fraction of the weak growth experience of the Latin American countries might be described by the policies of financial repression followed by the governments in this region.

Demetriades and Luintel (1997) provided some evidence, which suggested that financial repression had substantial direct impacts on financial development, independently of its well-known effect through the level of the real interest rate. They also explained that the process of economic growth was not weakly exogenous with respect to financial development. Therefore, financial repression could impose real costs on top of those suggested by previous empirical studies. Jinjark (2013) studied the relationship between economic openness via financial and trade integration and government revenue from financial repression. While they reported that both the financial and trade openness had a negative association with the financial repression revenue in the panel of countries, the impact of financial openness seemed to be stronger and the empirical correlations depending on the quality of governmental and budgetary management.

De Mello and Garcia (2012) described the process of maturing with emphasis on the defining features of the Brazilian financial system over the last 20 year. Hamori and Hashiguchi (2012) applied an unbalanced panel data analysis of 126 countries over the period 1963–2002 to investigate the impacts of financial deepening on inequality. They reported that financial deepening could reduce inequality while economic growth could reduce the equalizing impacts of financial deepening. In addition, they reported that inequality could increase with an increase in trade openness and the disequalizing impacts of trade openness could decrease as a country grows. They also reported that financial deepening and trade openness had asymmetric impacts on inequality.

2. The proposed study

This research analyzes the effects of financial deepening as well as repression on industrial development in Iran. Using a time series data, the proposed study applies the method originally introduced by Johansen and Juselius (1990) to measure the effects of these two factors on market development over the period 1970-2011. The proposed study uses the following regression model,

$$VIND = F(DEPTH, REP, INTMED, INVEST, LABOR, EXCHANGE), \quad (1)$$

where *VIND* represents market development, *DEPTH* stands for market deepening, which is a ratio of market liquidity on growth domestic products (GDP). In addition, *REP* represents market repression and the study uses prime interest rate for this variable. *INTMED* is another variable, which is associated with all loans given to private sector. *INVEST* is the other independent variable, which states the amount of private investment in billion Rials. Finally, *LABOR* shows the employment rate and *EXCHANGE* stands for exchange rate. Since the proposed study performs regression analysis to investigate the relationship between market development and different independent factors, we need to make sure the data are stationary. This is accomplished through augmented dickey fuller test and Table 1 shows details of our findings.

Table 1

The summary of augmented dickey fuller test on independent variables for I(0)

	With intercept and no trend		With intercept and some trend	
	ADF	Critical value	ADF	Critical value
VIND	-2.83	2.94	-0.04	-3.53
DEPTH	-1.04	2.94	-1.29	-3.53
REP	-1.32	2.94	-3.43	-3.53
INTMED	-1.86	2.94	-3.34	-3.53
INVEST	-0.33	2.94	-1.01	-3.53
LABOR	-1.27	2.94	-2.23	-3.53
EXCH	-0.25	2.94	-1.56	-3.53

As we can observe from the results of Table 1, most data are not stationary. Therefore, we need to take the first difference and present I(1) in Table 2 as follows.

Table 1

The summary of augmented dickey fuller test on independent variables for I(1)

	With intercept and no trend		With intercept and some trend	
	ADF	Critical value	ADF	Critical value
VIND	-3.93	-2.96	-4.61	3.58
DEPTH	-3.19	-2.96	-5.50	3.58
REP	-6.78	-2.96	-6.72	3.58
INTMED	-5.82	-2.96	-4.51	3.58
INVEST	-4.09	-2.96	-5.00	3.58
LABOR	-3.34	-2.96	-3.73	3.58
EXCH	-11.50	-2.96	-5.70	3.58

The results of Table 2 show that after taking the first difference all data have unit root and become stationary. The proposed study uses the method developed by Johansen and Juselius (1990) to analyze the data. The first step is to find the minimum number of co-integration vectors based on two measures of λ_{trace} and λ_{max} . Table 3 and Table 4 show the results of our findings.

Table 3

The summary of λ_{trace} for minimum number of co-integration

Null hypothesis	Eigenvalue	λ_{trace}	Critical value	Sig.
Zero vector	0.93	288.9	125.6	0.00
One vector	0.89	187.6	95.7	0.00
Two vector	0.75	104.0	69.8	0.00
Three vector	0.45	52.6	57.8	0.21
Four vector	0.37	30.1	33.7	0.14

Table 4

The summary of λ_{max} for minimum number of co-integration

Null hypothesis	Eigenvalue	λ_{max}	Critical value	Sig.
Zero vector	0.93	101.3	46.2	0.00
One vector	0.89	83.5	40.0	0.00
Two vector	0.75	51.4	38.8	0.00
Three vector	0.45	22.5	27.5	0.19
Four vector	0.37	17.5	21.1	0.14

The results of Table 3 and Table 4, both, indicate that we need to maintain three vectors, i.e. $r = 3$ and Table 5 shows the results of regression analysis.

Table 5

The summary of regression analysis

Variable	EXCH	LABOR	INVEST	INTMED	REP	DEPTH	VIND
Normal coefficient	1	-0.85	0.35	-0.15	-0.45	-0.01	0.41
Standard error	-	0.38	0.23	0.04	0.21	0.00	0.21

Based on the results of Table 5, the regression analysis is summarized as follows,

$$VIND = 0.85DEPTH + 0.01LABOR + 0.15INTMED + 0.45INVEST - 0.35REP - 0.41EXCH \quad (2)$$

As we can observe from the results of Eq. (1), the sign of financial deepening is positive, which means an increase of one percent on financial deepening increases industrial development by 0.85%.

In addition, there is a negative relationship between financial repression and industrial development. In other words, an increase of one percent on financial repression reduces industrial development by 0.35%. Another observation is the relationship between labor and industrial development, which means an increase of one percent on employment, will increase industrial development by 0.01%. The other interesting issue is related to loans given to private sector and the result of our survey indicates that an increase of one percent on such financial loans will increase market development by 0.15%.

4. Conclusion

In this paper, we have presented an empirical investigation to detect the effect of various factors on industrial development in Iran. The results have indicated that as the bank deposit increases, we may expect an increase on financial deepening and market development. On the other hand, as inflation increases, we could easily verify market repression and a reduction on market development. In addition, when there was an increase on loans dedicated to private sector, there was an increase on market development. Finally, there were some evidences to believe that currency devaluation could hurt market development by increasing the price of raw materials and market uncertainty.

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