

The Financial Development and Agriculture Growth in Iran: ARDL Approach

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Abstract: The importance of the agricultural surplus for structural transformation that accompanies economic growth is often underscored by development economists. This study examines the causal relationship between the dynamic financial development, economic growth and instability in Iran using annual time series covering the period 1970-2011. The Johansen cointegration test is used to examine the long-run relationship between finance, growth and other variable. The causality of short and long term between these variables is tested using a Granger causality framework and model error (ECM) correction.

The results of the model used suggest that there is bidirectional causality between agricultural economic growth and financial development. It is recommended that maintenance of credible macroeconomic policies that is pro-investment; and debt-equity swap option are necessary for agricultural-led economic growth. This study of the implications of policies pay important development policies authorities pay boosts agricultural growth by improving the efficiency of the financial sector.

Keywords: Economic Growth, Financial Development, ARDL Approach, Iran.

1 Introduction

After the revolution of 1979, replacing the traditional system of interest credit based system of Islamic credit was one of the fundamental changes in Iran to ensure adequate flow of credit, reform of financial institutions has been done to increase budgetary allocations. Credit for agriculture is channeled below market interest rates, by the Agricultural Bank, the leading provider of rural credit (80%).

About two-thirds of the total credit to the sector is granted to farmers engaged in field crops and horticulture. With a growing recognition of the importance of agri-business activities to promotedevelopment in the sector, there has been an increasing trend in the facilities offered to agricultural related industries and services [1].

The government also adopted a business model combining the goals of food self-sufficiency with those of liberalization and socio-economic private sector promotion. A five-year development plans for

reconstruction have been launched, which aims to increase production, increase productivity in key sectors and the promotion of non-oil export sectors of the economy.

Economic liberalization has been pushed forward as part of a structural adjustment program, which included correct price distortions, floating the exchange rate and promoting the private sector. During this period, agriculture Iran has progressed to high growth rates and ambitious quantitative targets of the Plan.

Section 2 is an overview of the literature that focuses on the relationship between the financial development and economic growth. Section 3 discusses the data sources; definitions of the variables used in our empirical work as well as the econometric modeling and section 4 present empirical results. Finally, in Section 5, some concluding remarks are presented

2 Literature survey

Agriculture finance refers to (public or private) resources (in form of equity, gift or loan) for improving social welfare through development of agricultural sector. It encompasses not only government funds but also funds of non-governmental organizations that use matching grants to attempt to promote community and sector development, income equality and local empowerment. Public funds are subsidized funds and private funds regardless of their price, are not subsidized, unless a contribution is tax free or the market price is affected by an explicit or implicit state guarantee of the liabilities of a development finance institution [2].

Agriculture financing can be divided into the non-debt (non-leverage) and debt (leverage) categories. This nexus based on the economic development experience of developed countries. As often stressed by development literature, agricultural surplus is important for the structural transformation accompanying economic growth [3].

Oyejide [4], in his study, "to review the long-term financing for sustainable development in Africa" argues that the poor performance of economic growth in sub-Saharan Africa region since the

mid-1970s is not foreign to its low levels of investment. Moreover, he suggested that since domestic savings in the region have been insufficient to fund even these low rates of investment, he used pretty heavily on flows external resources.

Arestis et al. [5] concentrated their study on only five developed countries with quarterly data. They confirm a robust effect of banking sector development and stock markets development on growth in these countries.

Favara [6] empirically examine the link between financial development and growth based on cross-sectional data and panel data with a variety of econometric methods. On financial development data section appears positively correlated to the growth in OLS estimates, but this relationship disappears when the endogenous nature of financial development dealt with the legal origin as an instrument.

Claessens and Laeven [7] further studied the joint impact of financial development and property rights on growth indifferent industries. They provided evidence that financial development improves financial access and better property rights foster growth through better asset allocation.

Hatemi-J and Irandoust [8] examined relationship between foreign aid and economic growth in developing countries Botswana, Ethiopia, India,

Kenya, Sri Lanka, and Tanzania" in their study found that foreign aid a positive and significant effect on economic activity in each country of the sample. They conclude that foreign capital flows can have a positive effect on real income in supplementing domestic savings.

Rousseau and Sylla [9] setup a set of multivariate time series models that relate banking and equity market activity to investment, imports and business incorporations of the United States from 1790 to 1850. They found strong support for the hypothesis of "finance-led growth" in the U.S. Rousseau [10] studied Japan over the period 1880–1913. Financial factors played a leading role in promoting Japan's rise to world power during the Meiji period.

Lihong and Qinggao [11] studied the relationship between financial development and economic growth in rural areas and found that rural financial development does not contribute to economic growth. Financial development does not appear to meet the requirements of economic growth in rural areas. It implies that rural financial development is ineffective to promote economic growth and invalidates the hypothesis of "supply leading" and confirms the "demand following" hypothesis.

Sidhu et al. [12] estimated that the demand for institutional agricultural credit in Punjab (India) using simultaneous equations. Their results indicate that the institutional agricultural credit is positively related to the productivity of agriculture by encouraging farmers to use modern technology to increase domestic production by effectively using the institutional agricultural credit.

Yazdani [1] probed cointegration and causal relationship between financial development, capital stock, real interest rate, international trade and agriculture growth in case of Iranian economy. Their findings confirmed that variables are cointegrated for long run association. Causality analysis revealed that financial development Granger-caused agriculture growth. Moreover, results found that financial development, capital stock, international trade and real interest have significant effect on agricultural growth.

Afangideh [13] studied the effect of financial development on investment in agriculture and agricultural production using three-stage least squares (3SLS) approach. The results confirmed that gross national savings, bank loans for agriculture, agricultural investment and agricultural production are cointegrated for a long term relationship. Furthermore, the results show that the increase in bank lending improves the performance of the agriculture sector by improving real gross national saving and real production.

Huang et al. [14] reexamine the dynamic relationship between financial development and economic growth. Using a novel threshold regression with the instrumental variables approach, they support a positive linkage between financial development and economic growth and detect that financial development has an important effect on growth in low-income countries.

Sharif et al. [15] depicted that Iranian financial markets play their role to stimulate agriculture growth but still financial reforms are needed to improve the performance of financial sector. A developed financial system boosts agriculture economic activity which contributes to economic growth.

Anthony [16] explored the role of agriculture credit, interest rate and exchange rate for Nigerian economy. The results indicated that agriculture credit improves the efficiency of agriculture sector and agriculture sector promotes economic growth. The study suggests the governing bodies to pay attention to agriculture sector on priority basis and launch a comprehensive macroeconomic policy to stimulate agriculture sector.

Hye and Wizarat [7] examined the effect of financial liberalization on agriculture growth by employing Cobb-Douglas function in case of Pakistan using ARDL bounds testing approach to cointegration. Their results showed that financial liberalization has contributed to improve the performance of agriculture sector in long-and-short runs. A rise in interest rate declines growth of agriculture by increasing the cost of production. Capital and labor force also play their role to enhance the efficiency of agriculture sector. They suggested that GOP and SBP need to overhaul the financial reforms to improve the efficiency of agriculture sector after studying the structure of the economy not forcefully implemented by IMF or other international financial institutions.

Medyawati and Yunanto [18] investigated the effect of agriculture, industry and banking sector on economic growth in Indonesian economy using VAR models. Their results depicted that agriculture, industry and banking sector contribute to the economic growth. The contribution of banking sector is relatively small as compared to agricultural and industrial sectors.

3 Research Methods

3.1 Data Description

The time series data for Iran covering the period from 1970 to 2011 are collected for GDP per capita, financial development and macroeconomic stability. The Economic growth is proxied by real GDP per

capita (US\$ in PPP, year 2005 prices). financial development (FD) which defined as the ratio of M2 to GDP.

As indicators of macroeconomic stability, we use a standard set of conditioning variables that includes the ratio of exports plus imports to GDP (TR) as a measure of trade openness of the economy, the inflation rate (INF) and the ratio of government consumption to GDP. GC is General government final consumption expenditure (% of GDP). All data are from the World Development Indicators (WDI) online database [19].

All the variables transformed to natural logarithms for the purpose of the analysis. We have used Eviews 8 and Microfit 4 to conduct the analysis.

3.2 Model specification

The purpose of the model is to examine the relationship between income, financial development, government consumption and trade openness for Iran. The model is as follows:

$$GDP_t = f(FD_t, GC_t, INF_t, TR_t) \quad (1)$$

To find the long-run relationship between the variables, the log-linear form following is proposed:

$$\ln GDP_t = \alpha_0 + \alpha_1 \ln FD_t + \alpha_2 \ln GC_t + \alpha_3 \ln INF + \alpha_4 \ln TR_t \quad (2)$$

After the recent empirical work, it is possible to test the long-term relationship between variables. The Autoregressive Lag (Distributed ARDL) approach proposed by Pesaran et al. [20] applies to the variables I (0) or I (1) or fractionally integrated. The part of the equation 3 ARDL model is:

$$\begin{aligned} \Delta \ln GDP_t = & a_0 + \sum_{i=1}^n a_{1i} \Delta \ln FD_{t-i} + \sum_{i=1}^n a_{2i} \Delta \ln GC_{t-i} \\ & + \sum_{i=1}^n a_{3i} \Delta \ln INF_{t-i} + \sum_{i=1}^n a_{4i} \Delta \ln TR_{t-i} \\ & + \lambda ECM_{t-1} + u_t \end{aligned} \quad (3)$$

Where ECM t-1 is the error correction term which is derived from the equation cointegration following estimated:

$$ECM_t = LnGDP_t - a_0 + \sum_{i=1}^n a_{1i}\Delta LnGDP_{t-i} + \sum_{i=1}^n a_{2i}\Delta LnFD_{t-i} + \sum_{i=1}^n a_{3i}\Delta LnGC_{t-i} + \sum_{i=1}^n a_{4i}\Delta LnINF_{t-i} + \sum_{i=1}^n a_{5i}\Delta LnTR_{t-i} \tag{4}$$

The Granger test [21] based on the vector error correction model (VECM) approach is used. Consider each variable in turn as a dependent variable for the model. Then the method of ARDL is used to examine the long-term and short-term Granger causality between variables. The residue obtained using the long-term estimates in the model are used as dynamic error correction terms. ECM_{t-1} is the lagged error-correction term.

The following model was used to test the causal relationship between the variables:

$$\begin{bmatrix} \Delta LnGDP_t \\ \Delta LnFD_t \\ \Delta LnGC_t \\ \Delta LnINF_t \\ \Delta LTR_t \end{bmatrix} = \begin{bmatrix} c_1 \\ c_2 \\ c_3 \\ c_4 \\ c_5 \end{bmatrix} + \sum_{i=1}^p \begin{bmatrix} \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} & \beta_{15} \\ \beta_{21} & \beta_{22} & \beta_{23} & \beta_{24} & \beta_{25} \\ \beta_{31} & \beta_{32} & \beta_{33} & \beta_{34} & \beta_{35} \\ \beta_{41} & \beta_{42} & \beta_{43} & \beta_{44} & \beta_{45} \\ \beta_{51} & \beta_{52} & \beta_{53} & \beta_{54} & \beta_{55} \end{bmatrix} \begin{bmatrix} \Delta LnGDP_{t-1} \\ \Delta LnFD_{t-1} \\ \Delta LnGC_{t-1} \\ \Delta LnINF_{t-1} \\ \Delta LTR_{t-1} \end{bmatrix} + \begin{bmatrix} \lambda_1 \\ \lambda_2 \\ \lambda_3 \\ \lambda_4 \\ \lambda_5 \end{bmatrix} ECM_{t-1} + \begin{bmatrix} \epsilon_{1t} \\ \epsilon_{2t} \\ \epsilon_{3t} \\ \epsilon_{4t} \\ \epsilon_{5t} \end{bmatrix} \tag{5}$$

CUSUM and Cusumsq test ARE Stability Test. We perform two tests of stability of the long-run coefficients together with the short dynamics, following Pesaran [20] after estimating the error correction model: the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) tests.

4 Empirical Analysis and Results

Table 1 presents some descriptive statistics of the selected variables over the period 1970-2011. The summary common statistics contain the means, maximum and minimum, standard deviation (Std. Dev) of each series after transformation in logarithms form.

Table 1 Descriptive statistics for variables

Variable	GDP	FD	GC	INF	TR
Mean	15.22793	23.38813	16.14293	18.07805	3.871068
Maximum (Year)	24.53608	37.27846	25.77000	49.40000	7.179766
Minimum (Year)	8.759400	14.85270	11.00000	6.200000	1.403393

Std. Dev.	4.398576	5.147633	4.361872	8.303479	1.438880
Observations	41	41	41	41	41

Source: Author's calculation using Eviews 8

In this empirical study we used Augmented Dickey-Fuller Stationary unit root tests to check for the integration order of each variable. We apply unit root tests to ensure that no variable is integrated at I (1) or beyond. We have used the ADF unit root test to check for stationarity. The results in Table 2 indicate that all variables are non-stationary at their level form and stationary at their first differences.

Table 2 Augmented Dickey-Fuller Stationary Test Results

Variable	Constant No Trend	Critical Value	Variable	Constant No Trend	Critical Value
Ln GDP	-1.421987	-2.936942	DLn GDP	-4.991257	-2.938987
Ln FD	-3.084277	-2.941145	DLn FD	-6.089441	-2.938987
Ln GC	-1.350387	-2.936942	DLn GC	-6.866966	-2.938987
Ln INF	-3.970880	-2.936942	DLn INF	-5.525873	-2.943427
Ln TR	-2.271652	-2.936942	DLn TR	-6.305439	-2.938987

The number inside brackets denotes the appropriate lag lengths which are chosen using Schwarz Criterion.
* Denotes for 5% significance level

Source: Author's Estimation using Eviews 8.

For cointegration analysis based on Johansen, two tests are available: the trace statistic and the maximum eigenvalue test. The presence of a cointegration implies that finance, economic growth and trade openness long run equilibrium relationship. Table 3, 4 show the cointegration results. Both trace and the maximum eigenvalue tests indicate no cointegration relationship at both 5% significance levels. The null hypotheses of no cointegration are rejected, implying long-run cointegration relationships amongst the variables. These variables share a common trend and move together over the long run.

Table 3 Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.825376	110.5563	60.06141	0.0000
At most 1*	0.353434	44.24159	40.17493	0.0185
At most 2*	0.330303	27.67053	4.27596	0.0180
At most 3*	0.225795	12.43521	12.32090	0.0478
At most 4	0.068839	2.710278	4.129906	0.1179

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Author's calculation using Eviews 8

Table 4 Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None*	0.825376	66.31466	30.43961	0.0000
At most 1	0.353434	16.57106	24.15921	0.3752
At most 2	0.330303	15.23532	17.79730	0.1166
At most 3	0.225795	9.724930	11.22480	0.0907
At most 4	4 0.068839	2.710278	4.129906	0.1179

Trace test indicates 1 cointegrating eqn (s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Source: Author's calculation using Eviews 8

The VECM is set up for considering short and long-run causality. The optimum lags are selected relying on minimizing the Akaike Information Criterion (AIC). The maximum lag order two was set. With that maximum lag lengths setting, the ARDL (1, 1, 2, 3, 3) model is selected.

All estimated coefficients can be interpreted as long-run elasticities, given that variables are expressed in natural logarithms in table 2. The long-run coefficients of GDP, FD, GC, INF and TR estimated from these techniques have the same magnitude at the 5% significance levels.

Table 5 Long-run Estimation Results

Dependent Variable: Ln GDP				
Variable	Coefficient	Std. Error	T-Statistic	Prob
Ln FD	0.41**	0.081676	5.0807	[0.000]
Ln GC	0.34**	0.076869	4.4099	[0.000]
Ln INF	.050**	0.062920	7.9799	[0.000]
Ln TR	-0.79**	0.062020	-12.5488	[0.000]

Note: ** significant at 5 % level.

Source: Author's calculation using Microfit 4

The entire coefficients are significant at 5% level. The estimated long-run coefficient for financial development is positive in table 5, indicating that the Iran economy has benefitted from financial development. For the model indicates that a 1% increase in FD increase real agricultural GDP emission by approximately 0.41%. This results in line with Barajas, Chami and Yousefi [22], who find

that financial development has lower if not negative effect on economic growth in oil-rich and in Middle Eastern and North African (MENA) countries.

Ang and McKibbin [23] suggest that the returns from financial development depend on the mobilization of savings and allocation of funds to productive investment projects. But due to information gaps, high transaction costs and improper allocation of resources, the interaction between savings and investment and its link with economic growth is not strong in developing countries. The magnitude of this impact is not sufficient to warrant a positive relationship for the overall economy since the non-oil sector constitutes only a relatively small part of the Saudi economy. This finding is consistent with Nili and Rastad, [24] who find that financial markets in resource-rich countries are relatively weak. They attribute their results, a possible natural resource curse in financial development, the dominant role of government in total investment and the poor performance of the private sector in these countries.

The empirical results show that trade openness has negative and significant effect on overall agricultural economic growth.

The coefficients of the error correction model are presented in Tables 6.

Table 6 Error correction model (ECM) For short-run elasticity ARDL (1, 1, 2, 3, 3)

Dependent Variable: D Ln GDP			
Variable	Coefficient	T-Statistic	Probability
Ln FD	0.33**	3.5838	[0.001]
Ln GC	0.77**	4.8660	[0.000]
Ln INF	0.14**	3.1769	[0.004]
D Ln TR	-0.48**	-6.2183	[0.000]
ECM (-1)	-0.66**	-6.9242	[0.000]

The Short-Run Diagnostic Test Results			
R-Squared	0.78265		
Akaike info Criterion	38.2905		
Schwarz Criterion	26.8274		
F-Statistic	9.6022	[0.000]	
Durbin-Watson	2.0062		

Note: **shows a percent level of 5%.

Source: Author's calculation using Microfit 4

The negative signs for each coefficient for ECM show that short-term adaptation, which occurs at a high speed in the negative direction, is statistically significant. The coefficient of the ECM indicates that the speed of adjustment to the short-term to search for balance in the long term is important. In addition, it is an indication of the co-integrating relationship between financial development of agricultural GDP and trade openness. Coefficient values ECM strongly suggest that the imbalance caused by the shocks of the previous year dissipates and the economy converge to the long-term balance in the current year[25].

The speed of adjustment process to restore the equilibrium. The relatively high coefficients imply a faster adjustment process. The values of the coefficients of ECM_{t-1} (-0.66) indicating that the variables will adjust to the long-run equilibrium in about 1.55 period following a short-run shocks.

The financial development has negatively effect on agricultural economic growth and significant. Private investment is linked positively with economic growth and contributes to growth by 0.33%. This implies that financial development does not take time to benefit agriculture sector's development.

Political instability is linked with economic growth at 5%. It is pointed out that a 1 percent rise in financial crisis increases growth rate by 0.14 percent. The Islamic Revolution and political assassinations evolve the favorable impacts of political volatility on property rights and hence on private investment. This tends to increase the economic growth. Inflation affects the growth positively at 1%. Inflation is linked with economic growth. It shows that Rise in inflation is not frequently linked with various forms of financial suppression as government takes protective initiatives to save infant real sectors of the country. For instance, interest rate ceiling and credit allocation are common in high inflation. It may be documented that producers are motivated to do better in the economy during a period of inflation but at the same time consumers' purchasing power declines.

The positive impact of the financial development on the growth is mitigated by the favorable impact of the financial instability.

Trade openness and economic growth move in the opposite direction. In short-run trade does not contribute to economic growth.

Bahmani-Oskooee and Nasir [26] seem to argue that correct specification can be checked by the application of CUSUM and CUSUMsq tests. The null hypothesis may be accepted if the plots of both statistics lie inside the critical boundaries at 5% level of significance. This means model is correctly specified. The plots of both CUSUM and CUSUMsq clearly verify the reliability of the long run and short run coefficients of regressors which impact economic growth in Pakistan.

Figure 1 and 2 shows the CUSUM and the CUSUMSQ stability test results to the residuals of equation(1): the CUSUM and CUSUMSQ remain within the critical boundaries for the 5% significance level. These statistics confirm that the long-run coefficients and all short-run coefficients in the error correction model are stable and affect growth

Figure 1: Plot of Cumulative Sum of Recursive Residuals

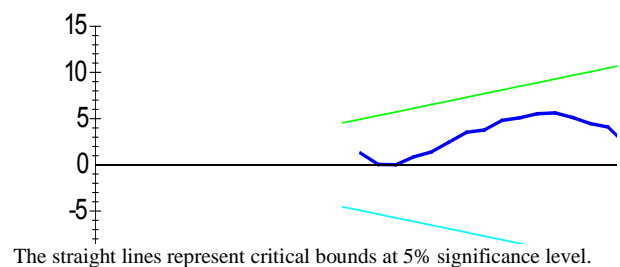
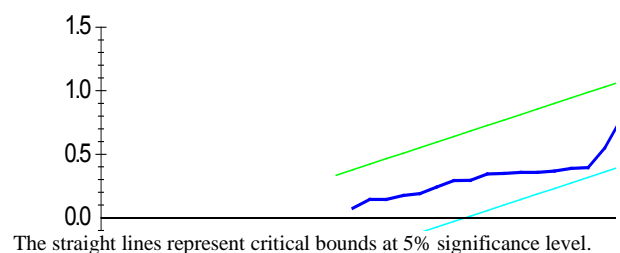


Figure 2: Plot of Cumulative Sum of Squares of Recursive Residuals



The graphs of both tests are shown in figure 1 and 2 respectively. The results show that ARDL parameters are found to be stable because graphs of CUSUM and CUSUMSQ (blue lines) are within critical bounds (red lines) at 5 per cent level of significance.

Table 7 shows the results of error correction based Granger causality, including weak short-term Granger causality and long-term Granger causality.

Table7. VECM Granger Causality results

Variable	Short-run					Long -run
	Dln GDP	Dln FD	Dln GC	Dln INF	Dln TR	ECM(-1)
Dln GDP	-	17.5447*** [0.001]	23.6780*** [0.000]	18.6724*** [0.000]	43.7688*** [0.000]	47.9440*** [0.000]
Dln FD	26.0332*** [0.000]	-	11.7005*** [0.003]	5.1662** [0.023]	1638.9*** [0.000]	4.9937** [0.025]
Dln GC	24.2202*** [0.000]	10.1339*** [0.001]	-	13.2323*** [0.001]	44.4933** [0.000]	7.6322*** [0.006]
Dln INF	22.9124*** [0.000]	.20821 [0.648]	27.7088*** [0.000]	-	7.7874*** [0.005]	43.1018*** [0.000]
Dln TR	38.8400*** [0.000]	24.4854*** [0.000]	25.7579*** [0.000]	5.7841 [0.055]	-	39.5616*** [0.000]

$x \rightarrow y$ means x Granger causes y .

Note: ***, **, *denote and the statistical significance at the 1%, 5% and 10levels, respectively.

Source: Author's calculation using Microfit 4

The Granger causality test results funding the existence of bidirectional short-run and long-run causalrelationship between financial development and GDP. Also, these findings show that two variables has a positive bidirectional causality and statistically significant. There is bidirectional relationship between economic growth andtrade openness.

The economic growth presents bidirectional causality with the instability.

5 Conclusion

More than three decades ago, Goldsmith [26]discussed the relationshipbetween financial sector development and economic development. Theoreticalwork very carefully illustrates different channels through which the emergence offinancial markets and institutions affect economic growth.

The present study attempted to empirically investigate the link between economic growth, financial development, instability policy. In this study, we apply a time-series analysis (ARDL and Granger causality) for the period 1970-2011.

Our result shows that there is a unidirectional causal link between economic growth and financial development means improving the well-being of the generality of the population can lead to the development of the financial sector.

On the other hand, we find evidence of the direct effect of finance on economic growth.This implies first that, higher economic growth could generate jobs for people. Second, it could also reduce the wage differentials between skilled and unskilled labour at a later stage of development, which benefits the poor. Third, high growth could lead to higher tax revenues, enabling the government to allocate more fiscal resources on social spending such as health, education, and social protection, and

hence benefiting the people; and the people would also be able to invest more in human capital. Fourth, as capital accumulation increases with high economic growth, more funds would become available to the people for investment purposes, thus increasing their income. However, our findings do not suggest a leading influence of poverty on economic development.

Financial instability isrelated to economic growth. This implies that financial instability strengthen thepositive impact of financial development on economic growth. Trade openness showspositive affect on economic growth. Private investment stimulates economic growth andinflation increases economic growth. Political stability enhances the stability and reliabilityof economic policies that promotes the growth in the country.

Financial institutions are responsiblefor managing their own affairs and ensuring that they operate according to theregulatory rule. But government and Central bank are responsible for managingthe system and defining and implementing rules under which participants in thesystem operate.

Public intervention is always necessary to correct this market failure - even if it could take the form of insurance against the risks, support the securitization of debt and market making, rather than the traditional bank credit. Sector development of Islamic finance and conventional sector must be accompanied by a stable macroeconomic environment, a gradual economic openness, adequate regulation and supervision of the banking system and the rules of the international accounting and the legal environment.

Therefore, policies related to finance should work on strengthening ties finance-growth more holistically. For example, improved macroeconomic stability or improvement of institutional quality,

investment in physical and human capital may influence financial deepening favorable.

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