

Accelerating Factors of Public Investment in Agriculture Sector of Pakistan

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Abstract: This study is an endeavor to investigate the accelerating factors for public investment in Agriculture Sector of Pakistan that might help in retaining the growth of agriculture sector. The time series data for the period of 1981-2014 was selected. In analytical techniques the Augmented Dicky-Fuller unit root test for the stationarity of data, Johansen Co-integration for co-integrating factor and Vector Error Correction Model (VECM) were applied for the regression analysis. The results obtained from the regression analysis of the study shows that Value-Added in Agriculture Sector ($Vagri$), Credit Available to Agriculture Sector ($CAagri$), Capital Stock in Agriculture Sector ($Kstock$), Population Growth Rate ($Popg$), Dummy variable for the political stability and favorable condition (Dps) and Lagged Investment in Public Agriculture Sector ($Iga_{(-1)}$) has significant and positive effect, whereas Index of Price of Capital (Ip_k) is significant negative impact on the Public Investment in Agriculture Sector of Pakistan. The study recommends that some incremental efforts required for the government to invest in agriculture sector through national policies and food security accompanying long term planning to enhance the growth of agriculture sector in Pakistan.

Key Words: Public Investment, Agriculture Sector, Investment Accelerator Model, Augmented Dicky-Fuller, Johansen Co-integration and Vector Error Correction Model.

1.1 Introduction

Public Investment plays an important role in economic growth of a country as it raises the productive capacity of the economy, affects the employment level and promotes technical progress through embodiment of new techniques. Public investment is considered as a key factor in determining the level and fluctuation in national income as well as in overall economic activity in a country. When expenditure on goods and services falls during a recession, much of the decline is usually due to a drop in investment spending. Of course, the return to capital is lower in recession and higher during booms. Consequently, all the countries particularly the developing countries, desire such an economy in which investment increases smoothly over time. Thus, public investment plays a dual role; affecting short-run output through its impact on aggregate demand, and influencing long-run growth through the impact of capital formation on potential output and aggregate supply (Herzer 2011).

Agriculture sector prolong to play a vital role in economic growth, development, build-in infrastructure, industrial fabricate up, reduction in poverty, providing employment opportunities and stabilizing the economy of Pakistan. Agriculture is one of the largest contributing sector's accounting an annual average growth of twenty percent to overall Gross Domestic Product (GDP) of Pakistan. The enthusiastic with dynamic strengthening and spiraling growth of agriculture sector persuade the

momentous contribution to the employment opportunities engaging more than forty-five percent of labor force. More than sixty percent of the total population is living in the rural areas of Pakistan utterly dependent on the agriculture sector directly or indirectly. The Agriculture sector has sturdy relation with economy. Agriculture sector is the key supplier to downstream industry in providing of raw materials, causative considerably to the exports of Pakistan as well, this sector is hefty market for industrial products too, like use of industrial machinery and equipments of agriculture sector, tractors, pesticides, fertilizer and agricultural related trappings.

Regardless of its decisive importance to economic growth, overall development, exports of primary goods, incomes generating, food security and provability to the individuals of the country, the Investment and growth in Agriculture sector of Pakistan has been anguish from secular decline continuously from 1960's. The agriculture productivity decrease from several decades and remains low throughout from 1960's; the core rationale behind this dwindle are, the crop sector experiences declines from three to four last decades, lack of new technology and modern farming techniques, most of the land has irrigated, the irrigated land has lack of availability of water, too much loss of water due to poor infrastructure system, lack of seed genetics and etc. Despite several problems, one is the solitary problem that cause downfall in the growth agriculture sector and

its contribution to the economic growth of Pakistan is the turn down of the Public investment in this sector.

(Hyder; 2001) empirically analyzed the impact of public investment on the agriculture sector of Pakistan using time series data for the period of 1962-2001. The Vector Error Correction Model (VECM) been used as regression technique and found the positive effect of public investment on the growth of agriculture sector of Pakistan. (Saeed et al; 2006) assessed the role of public investment in the agriculture sector of Pakistan at the aggregate level using Vector Autoregressive technique in the methodology. The study found positive and significant effect of public investment in agriculture sector as well as in providing the employment opportunities by engaging the maximum labor force. Further, it was too analyzed that public sector investment has crowding-in effect in the agriculture sector and crowding-out effect on the manufacturing sector of Pakistan. Earlier studies done from some more researchers related to public investment in agriculture sector are; (Khan; 1998), (Naqvi et al; 1983), (Naqvi et al; 1984), (Naqvi and Sarmad; 1986), (Janjua; 1997), (Matin and Wasow; 1992) and (Naqvi; 2002).

(Barnes; 2001) found that public sector investment has dominant role in the agriculture sector of the country, as it provide and help in engender the new equipments, infrastructure and modern technology. Further, increase of public investment in agriculture sector has additional significant effect on the reduction in poverty and unemployment by raising the employment opportunities both to skilled and unskilled labor. (Foster and Rosenzweig; 1995) emphasized that public sector investment has positive externality in the agriculture sector. Further, public sector investment in agriculture has also significant impact on the rural development, employment opportunities, use of modern technology and inputs as well as improvements infrastructure and equipments. A vast literature regarding to public investment in agriculture sector also been found in the studies of (Rao; 1994), (Rao and Gulati; 1994), (Rath; 1989), (Gulati and Bhide; 1993), (Sen and Ghose; 1993), (Sen and Ghose; 1995), (Dantwala; 1987), (Binswanger; 1989), (Shiferaw and Holden; 1999), (Fans et al; 2000), (Fans et al; 2008) and (Lewis, Barham, and Zimmerer; 2008).

Numerous economist and researchers have articulated a grim of anxiety regarding declining public investments in agriculture sector. The Gulati and Bhide (1993), Rao and Gulati (1994), Rath (1989) and Rao (1994) expressed their serious concern regarding to the declining role of public investment in the agriculture sector. The public investment in the agriculture sector is the responsibility of the government (both Of provincial and central government) to provide capital, infrastructure, credit as well as new

technology, inputs and equipments. The past studies focused on the impact of public investment on the agriculture sector. However, this research study will explore the factors that play as an accelerating role of public investment in the agriculture sector of Pakistan.

Public investment in agriculture sector is the vital factor to capture capital stock, formation in agriculture and sustain the economic growth not only in this sector but to also contribute significantly to the economic growth and development of the country. If the declining inclination of public sector investment is continue, projection of agricultural sector growth in the Pakistan is dim that will be a sever threat to not only food security but to employment, poverty, raw materials for industrial sector, contribution to economic growth and prosperous to the country etc too . To give importance to the agriculture sector of Pakistan and to attract the public investment towards this sector, this study is an attempt to find the factors that may be plays an important role in the agriculture sector to overcome the said major problems. The objective of this research study is to examine the accelerating factors of public investment in agriculture sector of Pakistan. Though the included factors may not be the whole factors but these may be gave help to the policy makers. Consequences of decline in the growth of agriculture will harm most of the economic sectors as well the income, employment and poverty too, especially in the rural areas of Pakistan where the main income and employment generating activity is the agriculture sector.

2. Description of Data and Model

2.1. Data Analysis

This research study is consisting on time series data covering period of analysis from 1981-2014, as prior data year 1981 at a constant price is not available. The data collected from different sources, intensely observed and tried to use the most refine data after taken several steps of analyzing the data. The main sources from which the data collected are; Agriculture Development Bank of Pakistan (ZTBL), Agriculture Training Institute (ATI) Peshawar, Ministry of Agriculture and livestock, Economic Surveys of Pakistan, Federal Bureau of Statistics (FBS), State Bank of Pakistan (SBP), World Development Indicator (WDI) and Global Economic Indicator.

2.2. Description and Justification of INVESTMENT MODEL

The economists considered investment to be an important source of growth. However there is no agreed theory of investment as to how and why the investors adjust capital stock whilst, it is not at equilibrium. To be consistent with the theory, should consider various popular models of investment behavior in search for the determinants of investment. In particular, a well-recognized

theories of investment behavior known as the Accelerator principal, Keynesian theory, post Keynesian theory and the Neo-Classical theory.

The empirical model of (White; Sept.1956) that is more or less an extension of Keynes work been favored to employ in this research study. Investment can fairly and contentedly be regarded as the most erratic component of aggregate demand. It has long been termed as a major source of growth. Yet no single investment theory explains investment behavior in its entirety. Literature abounds with numerous investment theories that do not show wide differences from each other. As Keynes terms investment as a function of income and interest rate, the accelerator model links investment to the change in output that is a reflection of the change in demand. The marginal cost of funds approach links investment decision with the cost of funds and marginal efficiency of capital. The cost of capital varies with the demand for capital as well as the sources of funds i.e. whether funds are financed through borrowing or from one's own pocket. With an increase in demand for capital the marginal cost of getting funds for additional investment also increases. Quite recently in advance econometric techniques and the availability of latest computing facilities have made it possible to conduct empirical analysis of the investment behavior. This part of the study provides a theoretical framework for investment model.

A natural starting point of discussion of investment is the rationale of the Present Value (PV) criterion and its implication for the determinants of investment. Thus, by reducing current income, the owners can increase future by investing the firms retained earnings. The investment rule, that the firm should maximize its present value by investing in any projects with positive returns. In order to maximize its present value the government or firm should invest in all projects that have a $(PV>0)$. The present value ranking depends on the market rate of the interest – the rate at which earning can be reinvested.

Keynes also stressed the importance of expectations in determining investment since it is the expectation that determines the rate of return and thereby any change in expectation would shift the Marginal Efficiency of Investment (MEC). Due to frequent changes in expectation the investment behavior shows wide fluctuations. The Keynesian theory explains investment function with respect to the interest rate. It relates the marginal efficiency of capital (m) with the real rate of interest (r). The marginal efficiency of capital is defined as that rate of discount which equates the present value of net returns to the cost of capital. It declines with an increase in the price of capital and increases with the price of output as well as the quantity of output.

$$m = m(P_k, K, PQ, Q) \tag{2.1}$$

m = marginal efficiency of capital

P_k = price of capital

K = capital

PQ = price of output

Q = output

The optimal capital stock can be expressed as a function of (r), (P_k), (PQ) and Q

$$K^* = K(r, P_k, PQ, Q) \tag{2.2}$$

Hence PQ = f(Q)

So the optimal capital stock function equation becomes

$$K^* = K(r, P_k, f(Q), Q) \tag{2.2(a)}$$

Increase in output leads to increase in the level of desired capital stock, hence the partial derivative of (K*) with respect to (Q) shall be positive. However the partial derivative of (K*) with to the price of output shall be negative. The combined effect of these two variables shall be indeterminate. Hence

$$dK^* / dQ = (\partial K^* / \partial Q) + (\partial K^* / \partial P_k)(\partial P_k / \partial Q) \tag{2.3}$$

$$dK^* / dQ = (\partial K^* / \partial Q) + (\partial K^* / \partial P_k) f'(Q) \tag{2.3(a)}$$

This equation can be rewritten as

$$K^* = h(r, P_k, Q) \tag{2.3(b)}$$

Expressing the function in linear form gives

$$K^* = \alpha_0 + \alpha_1 r_t + \alpha_2 P_{kt} + \alpha_3 Q_t \tag{2.3(c)}$$

Where, $\alpha_1 < 0, \alpha_2 < 0, \alpha_3 > 0$

Net investment can be written as ;

$$NI_t = (\alpha_1 r_t + \alpha_2 P_{kt} + \alpha_3 Q_t - \alpha_1 r_{t-1} + \alpha_2 P_{kt-1} + \alpha_3 Q_{t-1}) \dots \dots \dots 2.4$$

Depreciation is proportional to the capital stock in the previous period

$$D_t = (\delta K_{t-1} = \delta \alpha_0 + \delta \alpha_1 r_{t-1} + \delta \alpha_2 P_{kt-1} + \delta \alpha_3 Q_{t-1}) \dots \dots \dots 2.5$$

Gross investment equals net investment and depreciation therefore

$$I_t = \delta\alpha_0 + \alpha_1 r_t + \alpha_2 P_{kt} - \alpha_1(1-\delta)r_{t-1} - \alpha_2(1-\delta)P_{kt-1} + \alpha_3(Q_t - Q_{t-1}) \dots \dots \dots 2.6$$

$$I_t = (\alpha_0 + \alpha_1 r_t + \beta_1 r_{t-1} + \beta_2 P_{kt-1} + \alpha_3 \Delta Q_t) \dots \dots \dots 2.7$$

The expected sign of the coefficient are;

$$\alpha_1 < 0, \beta_1 > 0, \beta_2 > 0, \alpha_3 > 0$$

It is an accelerator model as it shows the relationship between the level of net investment and growth rate of output.

2.3. Model for Public Investment in Agriculture Sector

Projection of government investment should be consistent with budget plans. In countries in transition, the investment projects of state-owned enterprises are also a major concern of the political authorities. As a consequence, the behavior of investment by public enterprise may not be determined solely by market-related forces but social, political and economic priorities as well as financial constraints. Model for Public sector investment in agriculture sector of Pakistan for this research study is derivative of investment accelerator model that is derived and showed in equation (2.7). Both federal and provincial governments take part in the investment. Over ninety (90) percent of expenditures are lumped under “commodities and services” and “transfer of payments”. The theoretical model function of public investment for agriculture sector of Pakistan is as follows:

$$I_{agri} = f(Vagri, CA_{agri}, Kstock, Dps, Popg, Iga_{(-1)}, Ipk) \quad 2.8$$

The corresponding regression/econometric equation of the above given function is given below:

$$I_{agri} = (\beta_0 + \beta_1 V_{agri} + \beta_2 CA_{agri} + \beta_3 K_{stock} + \beta_4 Dps + \beta_5 Iga_{(-1)} + \beta_6 Pop_g + \alpha_7 I_{pk} + \varepsilon) \dots \dots \dots 2.8a$$

The sign of the coefficient is expected to be;

$$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0, \beta_6 > 0, \beta_7 < 0$$

The niceties of variables that are included in the study are given below;

Iagri = Public Investment in Agriculture Sector

Vagri= Value-Added in Agriculture Sector

CAagri = Credit Available to Agriculture Sector

Kstock = Capital Stock in Agriculture Sector

Popg = Population Growth Rate

Dps = Dummy for Political Stability, (D=1 if the observation belongs to political stability period, and (D=0, Otherwise)

Iga(-1) = Lagged Investment in Public Agriculture Sector

Ipk = Index of Price of Capital

3. Analytical Technique and Results

In analytical techniques section of the study includes unit root test, Johansen co-integration test, regression analysis and interpretation of results.

3.1. Augmented Dicky-Fuller (The ADF) Unit root Test

Augmented Dicky-Fuller unit root test preordained test for the time series data. The data used in the present study is time series, therefore Augmented Dicky-Fuller been applied to examine the data for the unit root. The unit root test is very constructive in choosing the appropriate econometric framework and analytical technique for further regression analysis. Augmented Dickey Fuller mostly applied on the data having large samples. The data used in this research study was checked through Augmented Dicky-Fuller (ADF) unit root test for the stationarity. The results of unit root at Level are given in table 3.1.

TABLE 3.1: Unit Root Test (The ADF) Results for the Stationarity of Data at Level

Variables	Abbreviations	Augmented Dickey Fuller	Critical Value (ADF)
Public Investment in Agri Sector	Igari	-2.147977	-2.9705
Value Added to Agri Sector	V _{agri}	-1.229213	-2.9705
Credit Available to Agri Sector	C _{agri}	-1.978764	-2.9705
Capital Stock to Agri Sector	Kstock	-2.041385	-2.9705
Dummy Variable for political Stability	Dps	-1.272727	-2.9705
Population Density or growth rate	P _{opg}	-2.265209	-2.9705
Lag of Public Investment	Iga ₍₋₁₎	-2.240575	-2.9705
Index of price of Capital	I _{pk}	-2.468468	-2.9705

Note: The variable are taken in their log form and Critical value is selected at 5% significance level

The results incorporated in above table showing the uni root, thus null hypothesis is accepted, that the variables has unit root and rejecting the alternative hypothesis in case of the ADF value at level. The Augmented-Dickey Fuller value has compared with the critical value selected at 5% significance level to test the hypothesis of the unit root. The ADF unit root test again applied on the data to check the stationary at first difference. The results of ADF first difference is given in table 3.2.

TABLE 3.2: Unit Root Test (The ADF) Results for the Stationarity of Data at First Difference

Variables	Abbreviations	Augmented Dickey Fuller	Critical Value (ADF)
Public Investment in Agri Sector	Igari	-5.206390	-2.9705
Value Added to Agri Sector	V_{agri}	-4.252524	-2.9705
Credit Available to Agri Sector	C_{agri}	-3.762040	-2.9705
Capital Stock to Agri Sector	Kstock	-3.915789	-2.9705
Dummy Variable for political Stability	Dps	-4.291975	-2.9705
Population Density or growth rate	P_{pop}	-3.840854	-2.9705
Lag of Public Investment	$Iga_{(-1)}$	-5.097237	-2.9705
Index of price of Capital	I_{pk}	-4.362324	-2.9705

Note: The variable are taken in their log form and Critical value is selected at 5% significance level

The results integrated in table 3.2 shows that all the variables are stationary at first difference, accepting the Alternative hypothesis and rejecting the null hypothesis that the variables are unit root. The situation when all the variables are stationary at first differences the researchers and economist prefer the Co-integration test that further gave direction for VAR or VECM for the regression analysis.

3.2. Co-integration Test

Johansen Co-integration test are applied to find out that either the public investment in agriculture sector of Pakistan is co-integrated with the accelerating explanatory variables included in the study or not. Secondly, co-integration test also indicates that these variables have long run or short run relation. As the ADF unit root test in table (3.2) confirms that the variables are stationary at first difference, further to find out the co-integrating factor and long run relation the Johansen Co-integration test has applied. The results are incorporated in table 3.3.

TABLE 3.3: Johansen Co-integration test Results				
	Likelihood	5 Percent	1 Percent	Hypothesized
Eigenvalue	Ratio	Critical Value	Critical Value	No. of CE(s)
0.863180	169.9270	124.24	133.57	None **
0.698565	114.2326	94.15	103.18	At most 1 **
0.634467	80.65497	68.52	76.07	At most 2 **
0.566990	52.47580	47.21	54.46	At most 3 *
0.401222	29.03998	29.68	35.65	At most 4
0.324087	14.67976	15.41	20.04	At most 5
0.124173	3.712431	3.76	6.65	At most 6
0.055190	1.589603	3.76	6.65	At most 7

*(**) denotes rejection of the hypothesis at 5 % (1%) significance level

L.R. test indicates 4 co-integrating equation(s) at 5% significance level

The Johansen co-integration test results signifying that the variables are co-integrated and have long run relation. It means that these accelerating variables have long term impact on public investment in agriculture sector. Further, the result obtained from co-integration regression shows that there four (04) co-integrating equations or factor in the included model variables of this research study. This explains that these variables are closely correlated with each other as well as with the dependent variable having strong effect on public investment on agriculture sector. Thus, here the ¹Null Hypothesis is rejected and ²Alternative is accepted. As the variables are co-integrated and have long run relation, so, in this situation the preferable analytical technique for the regression analysis is Vector Error Correction Model (VECM).

3.3. Public Investment in Agriculture Sector

¹ H_0 : the series has "NO" co-integrated factor.

² H_1 : the series has co-integrated factor.

The investment motives are expected to be different in public and private sector because for public sector, profits may not be the main objective, and as such investment will take place in the public sector in those projects which may be rejected by the private sector either due to very high cost or due to high risk and uncertainty. It may happen in any investment category. Agriculture is one of the prevailing sector of the economy contributes one fourth to the Gross Domestic Product of Pakistan, as a major suppliers of raw materials to the industry as well as market for the industrial products and contributes substantially to Pakistan's exports earnings. After analyzing the importance investment in agriculture sector, this research study examining the public sector investment in agriculture sector of Pakistan. To find out the role of accelerating factor of public investment in agriculture sector (Igari), model are regressed including Value-Added in Agriculture Sector (VAgri), Credit Available to Agriculture Sector (CAagr), Capital Stock in Agriculture Sector (Kstock), Lagged Investment in Public Agriculture Sector (Iga(-1)), Dummy for Political Stability (Dps), Population Growth Rate of Pakistan (Popgand Index of Price of Capital (I_{pk})). The Investment Accelerator Model is regressed through Vector Error Correction Model (VECM) and the results are in below table 3.4.

Table: 3.4. Regression Results of Private Investment in Agriculture Sector as Dependent Variable are:

Dependent Variable	Independent Variables							
	C	V_{agri}	C_{agri}	K_{stock}	$Iga(-1)$	Dps	P_{opg}	I_{pk}
$Igari$ (1)	0.089 (5.527)	0.095 (2.258)	0.365 (3.707)	0.058 (1.891)	0.061 (2.315)	0.345 (1.964)	0.315 (5.036)	-0.146 (-2.193)
R -Squared	0.793118		Adj. R -Squared		0.736536	F -Statics Value		329.6861

Note: () parenthesis shows t -statistics values.

The result incorporated in table 3.4 obtained from the regression analysis of model through Vector Error Correction Model (VECM) shows that the recitation of the model is substantial. The F -stat value is (329) viewing the significance of the whole model. The R -squared value is (0.79) explaining the gleaming variation and response of independent variables towards the dependent variable signifying the goodness of fit of the model. The variables included in the model too are significant with correct signs.

Value-Added in Agriculture Sector has momentous affirmative impact on public Investment in Agriculture Sector. The coefficient value of Value-Added in Agriculture Sector is (0.09), that means that one percent increase in Value-Added in Agriculture Sector of Pakistan will bring nine (09) percent enlargement in intact investment of public sector in agriculture. The outcome is reasonably consistent and the result shows that Value-Added in Agriculture Sector is very imperative for investment in this sector.

Credit Available has a vital role in investment. The results drawn from the regression analysis of the study showing that credit availability playing an important role in Public investment in Agriculture Sector of Pakistan too. The coefficient of Credit variable is highly significant and having positive value. The coefficient value credit is (0.36), demonstrates that 1% percent availability of credits stimulate overall Thirty-Six (36) percent public investment in the Agriculture Sector of Pakistan.

The capital stock had always played an important role in any sector of the economy. The results obtained from the regression analysis showing that stock of capital is performing an imperative function in public investment in

agriculture sector of Pakistan. The coefficient value of capital stock is (0.05) having significant positive value, indicating that one percent increase in stock of capital will hoist five (05) percent of Public investment in agriculture sector

The results incorporated in table 4.3 demonstrating that of lagged variable of public investment in agriculture sector is significantly affected by previous investment decisions. The Dummy variable for stable political and economic condition is highly significant, explaining that a stable government with sound economic policies and implementation will play keen role an increasing the level of public Investment in agriculture sector of Pakistan.

The Population Growth Rate also playing an important role in of public Investment in agriculture sector of Pakistan having co-efficient value (0.31) with positive value and highly significant, which means that one percent increase in population will result an increase of thirty one percent on average in Public investment in agriculture sector. Increase in population will enhance demand for food and agriculture related goods creating pressure on agriculture, which will ultimately raise overall investment level in agriculture sector of Pakistan.

There is negative and significant effect of Index of Price of Capital on Public investment in agriculture sector. The coefficient of Index of Price is (-0.14), indicating that one percent increase in Index of Price of Capital will bring fourteen percent decrease in Public investment in agriculture sector respectively.

3. Conclusion

The study has been an attempt to identify the factors, which affect Public Investment

significantly and that can be used as policy variables to get the desired results for Agriculture sector, and in determining the Public investment behavior in Agriculture sector Pakistan. The results reveal that number of factors such as credit availability, profitability, government policies, population growth and capital stock held by Public Sector the is the most important determinant of investment activity, employing that the 'accelerator model' explains the investment behavior for agriculture quite significantly. While estimating public investment functions the level of political stability and favorable economic condition of a country and their possible effects towards government policies are also captured through dummy variable. The result indicates that this qualitative factor is considered as the important determinant of public investment in agriculture sector of Pakistan.

Public Investment seems to have positive relationship with past values of output and investment. To further enhance the investment opportunities, the concerned authorities can create additional demand for agriculture products by exploring the world market through various export

promotion measures. Besides these, government should ensure the one desk facilitations service to domestic as well as overseas investors especially in major cities. For the public investment the credit availability is the major factor, showing that for public investment credit is the binding constraint. The reason may be that government invests in projects not only with long development period but also heavy investment outlays are required.

A democratic political system and its stability are also the necessary conditions to convince the business community that the government's industrial policy is based on nation's aspirations rather than being derived from some temporary motives of a dictator. Although the nation at present is experiencing a positive change in our politics, there is a lot more to be done to realize a mature democracy and political stability in the country. An investor is primarily interested in maximizing his expected profits with the minimum risk. In the absence of political stability the investor cannot predict future and he would remain quite uncertain of the outcomes of his investment adventure. Under such uncertain conditions the investor's would avoid risk.

REFERENCES

- Fan, S., P. Hazell, and Haque T., (2000), "Targeting Public Investments by Agroecological Zone to Achieve Growth and Poverty Alleviation Goals in Rural India." *Food Policy* 25 (4): 411–428.
- Fan, S., P. Hazell, and Thorat S., (2000), "Government Spending, Agricultural Growth, and Poverty in Rural India." *American Journal of Agricultural Economics* 82 (4): 1038–1051.
- Fan, S., B. Yu, and S. Jitsuchon (2008), "Does Allocation of Public Spending Matter in Poverty Reduction? Evidence from Thailand." *Asian Economic Journal* 22 (4): 411–430.
- Fan, S., and X. Zhang (2008), "Public Expenditure, Growth and Poverty Reduction in Rural Uganda." *African Development Review* 20 (3): 466–496.
- Fan, S., B. Yu, and A. Saurkar (2008), "Public Spending in Developing Countries: Trends, Determination, and Impact." In *Public Expenditures, Growth, and Poverty*, 20–55, edited by S. Fan. Baltimore, MD: Johns Hopkins University Press.
- Foster, A., and M. Rosenzweig (1995), "Learning by Doing and Learning from Others: Human Capital and Technical Change in Agriculture." *Journal of Political Economy* 103 (6): 1176–1209.
- Gulati, A., and Rao. N., (2008), "Investment, Subsidies, and Pro-poor Growth in Rural India." *Agricultural Economics* 39 (2): 163–170.
- Herzer, D. (2011), "Does foreign aid increase investment? Evidence from panel co-integration", *Applied Economics*, 11(2).
- Hyder, K. (2001), "Crowding-Out Hypothesis In A Vector Error Correction Framework: A Case Study of Pakistan," *The Pakistan Development Review* 40: (4) pp. 633–650.
- Janjua M. Y. Y., (1997), "Business Fixed Investment: Role of Autonomous Shocks (A Stochastic simulation Approach).
- Khan H. A. (1998), "Macro-economic Policies and Private Investment in Pakistan", *The Pakistan Development Review* XXXVII (3): 277-291.
- Matin K., and Wasow B., (1992), "Adjustment and Public Investment in Kenya", Washington D.C. The World Bank Working Paper No. 878.
- Naqvi H. (2002), "Crowding – In Or Crowding Out? Modeling The Relationship Between Public And Private Fixed Capital Formation," *Pakistan Development Review*, 41(3), pp. 255 – 76.
- Naqvi S. N. H., and Sarmad (1986) "Preliminary Revised P.I.D.E. Macro-econometric Models of Pakistan Economy," *The Pakistan Development Review*.
- Rao. N., (2008), "Public Investment, Growth and Rural Poverty." In *Public Expenditures, Growth, and Poverty*, 56–108, edited by S. Fan. Baltimore, MD: Johns Hopkins University Press
- Saeed, N., K. Hyder, and A. Ali., (2006), "The Impact of Public Investment on Private Investment: A Disaggregated Analysis." *Pakistan Development Review* 45 (4): 639–661.