International Journal of Asian Social Science

National Savings, Investment and Institutional Freedoms in Pakistan

Khalid Mahmood (Department of Economics, Bahauddin Zakariya University Multan Pakistan)

Imran Sharif Chaudhry (Department of Economics, Bahauddin Zakariya University Multan Pakistan)

Author (s)

Khalid Mahmood
Department of Economics,
Bahauddin Zakariya University
Multan Pakistan
Email: khalidmahmoodbzu@gmail.com

Imran Sharif Chaudhry
Department of Economics,
Bahauddin Zakariya University
Multan Pakistan
Email: imranchaudhry@bzu.edu.pk

National Savings, Investment and Institutional Freedoms in Pakistan

Abstract

Institutional freedom is considered one of the most important factor in the debate of economic growth of nations. Most prominent kinds of institutional freedom which actively take part in economic prosperity are democracy (political liberalization) and economic freedom (business liberalization). In the history of economic growth savings and investment issues have their unique importance. More or less economists of all schools of thought agreed on this point of view that savings and investment directly and indirectly play vital role in economic growth of nations. This study presents the overview that either both democracy and economic freedom are really important factors for national savings and investment in Pakistan. For empirical investigation this study measured the indexes of level of economic freedom and democracy on annual basis. "Alliance for Restoration of Democracy in Asia" (ARDA) and "The Fraser Institute Canada" methodologies are adopted for measurement of democracy and economic freedom in Pakistan respectively. For study period 1970 to 2007 this study constructed the data set of 38 annual observations. The most recent econometric technique ARDL approach is employed for examination of long run and short run relationships between targeted variables. On empirically grounds it is divulged that during study period democracy in Pakistan did not contribute remarkably toward national saving and investment proxies. According to results, democracy affected the national savings and investment in Pakistan positively but insignificantly. Economic freedom the other core explanatory variable is considered more conducive for investment while it hampered the national savings remarkably in Pakistan during study period.

Key words: Economic Freedom, Democracy, Savings, Investment

Introduction

In the history of economic growth savings and investment issues have their unique importance. More or less economists of all schools of thought agreed on this point of view that saving and investment play directly and indirectly vital role in economic growth of the economy. Undeniably, savings and investment received elegant attention of researcher in classical and modern growth theories. According to classical more investment mean more production and consumption of masses. Domar argued that savings are directly proportional to national income growth (Domar 1951). Lewis pointed out that more profit in industrials sector seems lavish for more investment, then in turn investors invest and economy starts to grow (Lewis 1954). High rates of increase in total factor productivity and high rate of structural transformation are relying on investment (Kuznets 1973). Similarly some other economists put their faith in savings and investment for economic growth (Solow 1956). History of the developed nations is evidence that growth and development of nations depend on factors efficient productivity whether these are employed in agriculture, industry, or services sector of the economy. Undoubtedly inventions and innovations in conventional

methods of production and investment initially enhance the productivity of factors of production, but the capital formation either in case of investment in land, increase in physical equipment or up gradation of human resources are dependent on national savings. That's why study includes the national savings and gross investment for comprehensive growth analysis of Pakistan economy during study period.

As far as the matter of previous lessons regarding the impact of democracy on national savings and investment, the researcher puzzled at variety of conclusions. Keech (1995); Alesina and Rodrik (1994); Persson and Tabellini (1994) found that democracy damages the investment through shifting of resources from more productive to less productive projects due to rent seeking, self interest and bribery. Barro and Gordon (1983) explained that democracy hinders the investment. Huntington and Dominguez (1975) concluded that democracy hampers the savings and investment through reducing the productive resources. Pastor and Sung (1995) found that democratic political system is considered more conducive for investment than nondemocratic regimes. Lohmann (1999) argued that higher output is correlated with democratic regimes through more advantageous investment environment. Gwartney and Lawson (2003) divulged that economic freedom of the world enhances the Foreign Direct Investment (FDI). Cole (2003); and Lin and Nugent (1995) explained that economic freedom enhances the economic growth of economies by way of better investment due to business liberalization and more security of property rights.

The nucleus purpose of this study is injection of some empirical evidences into the ongoing discussion regarding the effectiveness of institutional freedoms for economic growth in Pakistan, especially for investment and national savings, which ultimately will enhance the policy decision and economic growth. Secondly, the provision of worthy theoretical and empirical evidences to other LDCs (have identical political and economic environment) to understand the complex relationships of above mentioned variables. The rest of this study is organized as follow. Next section explains the research design. The subsequent section provides the empirical results, and final section of this research is based on concluding remarks.

Research Design

Sample size and data
This study uses the time series annual statistics of concerned variables from1970 to 2007. In current study Economic Freedom Index (EFI) and Democracy Index (DCI) are core explanatory variables. Gross Domestic Product (GDP), National Savings (NS)**,** Gross Fixed Capital Formation (GFCF) and Gross Total Investment (GTI) are measured in billion of Pak. Rupee. Real Deposit Interest rate (RDR) and GDP are used here as supporting variables. Statistics of GDP, GFCF are taken from the international Financial Statistics (IFS) and information of GTI, NS, RDR are taken from the "Hand Book of Statistics on Pakistan Economy 2005" State Bank of Pakistan reports, whereas, statistics of EFI and DCI are developed by the current study by adopting the methodologies of The Fraser Institute Canada and Alliance for Restoration of Democracy in Asia (ARDA) respectively.

Unit Root Problem
The problem of non stationarity has its own implication in empirical analysis especially in time series investigation. The unit root process explains that either our given series are variant or invariant during a specific time period. If any series changed its attributes over time then in econometrics analysis one can say that the focused process is non stationary. Researchers depend on ADF (Augmented Dicky Fuller) and DF-GLS (Dicky Fuller Generalized Least Square) tests for unit root analysis. Because ADF investigate the order of integration that either focused variables are stationary at level / at first difference or not.

Due to less reliability of ADF for small data (Dejong et al. 1992, Harris 2003, Shahbaz *et al.* 2008) the DF-GLS is the second test which is used for scrutiny of unit root problem. It is considered more reliable test especially for small number of observations. Dejong *et al.* (1992) and Harris (2003) summarized that some time ADF committing type 1 and type 2 error when samples size are small. Then for more

reliability of research this study used DF-GLS as well as ADF test.

Model Specification

In empirical investigation determination of long run relationships between targeted variables is important. Econometrics literature offers a verity of co-integration testing techniques, the pioneering work of Engle and Granger (1987); Phillips and Hansen (1990); Johansen's multivariate tests (1991,1995), with unknown timing break ECM test Banerjee *et al.* (1998), and so on. But this research work employs a testing procedure for co-integration proposed by Pesaran *et al.* (2001). Pesaran *et al.* co-integration approach is also known as ARDL Bounds testing technique. The technique involves the comparison of the calculated F-statistics against its tables or critical values, which are generated for a focused sample size. F statistics are calculated through standard Wald test. The F-statistics tests the join significance of the coefficient on the one period lagged value of the variables. The ARDL model provides a substitute test for examining a long run relationship regardless of whether the underlying variables are I (0), I (1), or fractionally integrated.

In order to examine the upshots of economic freedom and democracy on growth pattern in Pakistan this study regressed a number of regression models for comprehensive analysis from all aspects. A general econometric equation which represents model is as follow:

$$(GrowthIndicators)_t = \beta_0 + \beta_1 (EconomicFreedomIndex)_t + \beta_2 (DemocracyIndex)_t$$
$$+ \beta_3 (ControlVariable)_t + \varepsilon_t -(5.1)$$

This study used above mentioned variables in natural logarithm form to asses the significance of economic freedom and democracy for growth purpose. So the log transformation of our general model will be as follow:

$$\ln(GI)_t = \beta_0 + \beta_1 \ln(EFI)_t + \beta_2 \ln(DCI)_t + \beta_3 \ln(Z) + \varepsilon_i - - - - - - -(5.2)$$

Where growth indicators (GI) are all those variables which study used as proxy of growth. β_0 is intercept and all other β_2 to β_n are slope coefficients. Z is representing the control or supportive regressors. ε_t is stochastic error term which capture the effectiveness of other variables affect growth but study did not include these in model.

Empirical Results
Unit Root Test

This part of study scrutinizes the level of stationarity of savings and investment proxies and institutional freedom indicators. The analysis is conducted through the ADF and DF-GLS unit root tests. Results of ADF and DF-GLS unit root tests are given in tables 1 and 2 respectively. According to outcomes of ADF unit root investigation ln (DCI) and RDR are stationary at level, ln(GTI), ln(GFCF), ln(NS) and ln(GDP),at first difference, while ln(EFI) is stationary at both level and first difference. On the other hand DF-GLS reflects that ln (DCI), ln (EFI), RDR and ln (NS) are stationary at level but all other at first difference. So on the whole all variables are stationary at level or at first difference.

Co-integration Analysis

The ARDL co-integration test make available us that either there is long run relationships among variables exist or not. Focused variables of this study are partially stationary at level and at first difference, so ARDL technique is more appropriate for empirical analysis. Generally, investigation of co-integration is observed through bounds framework based on the comparison of the calculated F values and Paresh Kumar Narayan (2005) upper bound value. Vector is considered co-integrated if calculated F ratio exceeds the upper bound value, and vice versa.

The upshots of co-integration through ARDL are given in table 3. According to Narayan Paresh Kumar (2005) bound test approach all

models dependent variables are co-integrated at 5% and 10 % level of significance. In this regard one may reject the null hypothesis of no co-integration, and will accept the alternative hypothesis of co-integration. Stated differently, there is long run relationships exist between focused variables.

Long Run Elasticities

To investigate the long run contact of institutional freedoms ln (EFI) and ln (DCI) on national savings ln (NS), investment ln (GTI), and ln (GFCF)) research regressed the three different regression model numbered 1 to 3. Results are reported in table 4.

Economic and Statistical Interpretation

In model # 1 study scrutinized the crash of democracy and economic freedom on national savings. According to outcomes of model 1 democracy positively but insignificantly affect The national savings. Democratic governments of nineties of last century did considerable for financial sector growth through privatization of financial institutions. Savings banks also introduce new savings schemes to positively influence the national savings. Indubitably democratic governments augmented the national savings positively but inconsistency in economic policies due to short tenure and vulnerable political environment could not contribute at deserving potential for national savings. Similarly so called democratic government of Prime Minister Shoukat Aziz also tried to enlarge the national savings at some extend. So the positive and insignificant contact of democracy toward national savings is not surprising.

As concerned the economic freedom negative effect on national savings, it is may be due to lesser trust of citizens on fresh savings policies, inflationary effects, and more suitability of business (investment) environment than savings in comparatively free or liberalized economy etc. No doubt economic freedom is considered more conducive for investment rather than savings in financial institutions, because in economic freedom investor feel security of investment, freedom of decision making, and lesser government intervention in business affairs, plus economic freedom also stimulate the soundness and growth of financial sector which in turn proved encouraging for investors. Thus individuals prefer to invest than save. Due to these reasons this investigation found negative correlations between economic freedom and national savings in running year, while at first lag economic freedom positively but insignificantly affect the national savings. Because economic freedom is a market's quality and superiority, which proved its impact on economy after a time lag. For the reason that freedoms of financial markets enhance the credibility of financial institutions and confidence of citizen, which in turn, enlarge the national saving. Now come to the investment and institutional freedoms (democracy and economic freedom) connection in Pakistan during study period. Regression models # 2 and 3 investigate the impact of democracy and economic freedom on investment in Pakistan. Study found approximately identical conclusions from both models. According to fallouts of these models economic freedom significantly and positively affect the investment in Pakistan.

Because in more liberalize and free environment investors feel freedom in decision-making, security of investment, and healthy business environment. Therefore positive and significant association between economic freedom and investment is not incredible. Democracy the other variable also affects the investment positively but insignificantly. Reason is very simple, in Pakistan existence of democracy with all its dimensions and characteristics is proved impossible up till now. More than half of our study period was the era of Martial Laws or authoritarian administration. Remaining period was characterized by motionless democracy. Motionless in a sense that any elected government did not complete its time tenure. No government continued the economic policies of last administration, plus poor political and economic performance everywhere in the economy. Vulnerable and partial democratic governments never maintained the political and economic stability, and also never ever give the time to economic policies that these policies trickle down their impact toward masses. Hence these threaten and half-done democracies never maintained the confidence of investors. Thus results are according to expectations.

Short Run Dynamic Behavior and Analysis
Short run investigations also consider vital as well as long run examination in comprehensive analysis, because it indicate the feed back mechanism in case of shock or imbalances in economy. In simple words one can say that short run examination tell us about how much error will be compensated during given lag of time. Outcomes of short run analysis are given inTable5

Table 1: ADF Unit Root Test Statistics

Variables	Intercept		Trend & Intercept.		None	
	Level	1st diff.	Level	1st diff.	Level	1st diff.
ln(EFI)	-3.69*	-7.00*	-4.43*	-6.99*	-0.41	-7.09*
ln(DCI)	-2.75***	-1.87	-3.57**	-1.59	0.18	-1.94***
ln(NS)	-2.39	-8.75*	-2.58	-9.20*	2.84	-1.80*
ln(GTI)	-1.63	-4.86*	-1.29	-5.09*	6.53	-1.41*
ln(GFCF)	-1.97	-3.84*	-0.83	-4.27*	5.70	-1.33*
RDR	-2.92***	-5.85*	-3.00	-5.76*	-2.40**	-5.94*
ln(GDP)	-2.42	-4.05*	-0.28	-4.98*	0.82	-0.95
Critical Values	L. of sign.	Intercept	L. of sign.	Trend & Int.	L. of sign.	None
	1%	-3.62	1%	-4.22	1%	-2.63
	5%	-2.94	5%	-3.54	5%	-1.95
	10%	-2.61	10%	-3.20	10%	-1.61

Table -2: DF-GLS(Dicky Filler Generalized Least Square) Unit Root Test Statistics

Variables	Intercept		Trend & Intercept.	
	Level	1st difference	Level	1st difference
ln(DCI)	-2.46**	-1.47	-2.96***	-1.64
ln(EFI)	-2.47**	-7.18*	-3.36**	-7.28*
ln(NS)	0.26	-1.24	-2.89***	-2.15
ln(GTI)	0.33	-4.92*	-1.39	-5.20*
ln(GFCF)	-0.05	-3.46*	-1.00	-4.00*
RDR	-2.94*	-5.92*	-3.02	-5.93*
ln(GDP)	-0.39	-3.22*	-0.66	-4.22*
Critical Values	Level of sign.	Intercept	Level of sign	Trend & Inter.
	1%	-2.63	1%	-3.77
	5%	-1.95	5%	-3.19
	10%	-1.61	10%	-2.89

Note *, **, *** indicate the ratio is significant at 1%, 5%, and at 10% respectively.

Table-3: ARDL Co-integration Bound Testing

Calculated F-statistics		
Dependent Variable	Model #	F statistics
ln(NS)	1	3.54***
ln(GTI)	2	3.73***
ln(GFCF)	3	4.21**
Critical Values		
Level of Significance	Lower Bound value I(0)	Upper Bound value I(1)
s1%	3.96	5.45
5%	2.89	4.00
10%	2.47	3.39

Note: *, **, *** represent that F ratio is significant at the 1%, 5% and 10% level of significance respectively. Where critical values are taken from Paresh Kumar Narayan (2005).

Table-4: Long Run Results

Ind. Variables ↓	ln(NS)	ln(GTI)	ln(GFCF)
	Model #1	Model #2	Model #3
Constant	1.57	-2.20*	-1.06
ln(EFI)	-1.69***	1.01*	0.33**
ln(DCI)	1.20	0.29	0.68
RDR	0.01**	-0.01	-0.01
ln(GDP)	0.84*	---------	0.56*
ln[NS(-1)]	0.25	----------	0.64*
ln[GTI(-1)]	--------	0.05*	---------
ln[GTI(-2)]	--------	-0.20	
ln [GFCF(-1)]	--------	0.57*	0.98*
ln [GFCF(-2)]	--------	--------	-0.47*
ln[EFI(-1)]	0.51	-0.57*	--------
ln[DCI(-1)]	-1.80	-0.77	-1.06*
R^2	0.99	0.99	0.99
Adj. R^2	0.99	0.99	0.98
DW	1.93	1.96	1.84
F Statistics	628*	3455*	1981*
B.-Godfrey Serial Corr. F-stat.	0.11	0.46	0.52
ARCH Test: F-statistics	1.18	1.02	0.00

Note: *, **, *** represent that ratio is significant at the 1%, 5% and 10% level of significance respectively.

Table-5: Short Run Results

IND. VARIABLE	Δ[ln (NS)]	Δ[ln(GTI)]	Δ [ln(GFCF)]
	Model #1	Model #2	Model #3
Constant	0.06	-0.01	0.03
Δ [ln(DCI)]	-2.84	-3..36**	-2.49
Δ[ln(EFI)]	-1.85*	1.21*	0.53
Δ[ln(GDP)]	1.21*	0.97**	0.21
Δ[ln(RDR)]	0.95**	-1.01**	-1.21*
Δ [lnDCI(-1)]	4.64	--------	0.53**
Δ [lnNS(-1)]	1.10**	--------	-------
Δ [lnGTI(-1)]	--------	2.01*	-------
Δ[lnGFCF(-1)]	-------	-------	1.08**
ECM	**-1.20***	**-1.35***	**-0.96***
R^2	0.61	0.51	0.51
Adj. R^2	0.52	0.40	0.41
DW	1.84	2.16	1.76
F Statistics	7.27*	4.93*	4.94*
B.-Godfrey S.C. F stat.	0.01	1.12	1.85
ARCH Test: F-statistics	.85	1.52	0.17

Note: *, **, *** represent that ratio is significant at the 1%, 5% and 10% level of significance respectively

According to the results t ratios of all three error correction coefficients are statistically significant. This thing is provide support to decision, that, there is long run relationships exist between our targeted variables during study period. The results expose that the coefficients of error correction term (ECM) are negative in all 3 models. It is indicating that the feed back mechanism very effectual. Actually it is correction of growth imbalances in national savings, and in investment. In other words, Correction of shock in all three models seems to be very efficient. Error correction mechanism of Models # 1and 2 is indicating that the recovery of shock is faster than its occurrence. It mean any shock which is occurred in above mentioned sector growth will be definitely recovered within next year. But the case of model number 3 is little bit different. Its error correction speed is effective but the whole shock will not be recovered within the next year. In this model value of error correction coefficient is -0.96. It means 96 % shock in gross fixed capital formation will be recovered within next year.

Conclusion

The purpose of this research was to disclose the nature of relationships regarding the importance of institutional freedoms for national savings, and investment. On empirically ground it is divulged that during study period democracy in Pakistan did not contribute remarkably toward above mentioned variable. According to results, democracy affected the national savings and investment in Pakistan positively but insignificantly. Reason is very simple; in Pakistan existence of democracy with all its dimensions and characteristics is proved impossible up till now. More than half of this study period was the era of Martial Laws or authoritarian administration. Remaining period was characterized by motionless democracy. Motionless in a sense that any elected government did not complete its time tenure. No government continued the economic policies of last administration, political instability of vulnerable democratic administrations did not contribute significantly towards national savings and investments in Pakistan. Economic freedom the other core explanatory variable affect the investment

positively and national saving inversely, but significantly. Thus one can easily summarize that in the presence of economic freedom or more liberalized business environment people prefer to invest rather than save, so economic freedom is considered more conducive for investment while it hampered the national savings.

References

Aesina, A and Rodrik, D. (1994) "Distributive Politics and Economic Growth" *Quarterly Journal of Economics,* Vol.109, pp. 465-490.

ARDA. (2005), Pakistan *Democracy Index,* Pattan Development Organization, Islamabad.

Barro, R. and Gordon D.B. (1983) "Rules Discretion, and Reputation in a Model of Monetary Policy" *Journal of Monetary Economics, Vol.*12, pp.101-121.

Cole, J.H. (2003) "The Contribution of Economic Freedom to World Economic Growth, 1980-99" *Cato Journal* Vol.23, No.2, pp.189-198.

Dejong, N., Nankervis, J. and Savin, N. (1992), "Integration versus Trend Stationarity in Time Series" *Econometrica,* 60, pp.423-433.

Engle, R. and Granger, C. (1987), "Co-integration and Error Correction Representation, Estimation and Testing" *Econometrica* Vol.55, No.2, pp.251-276.

Gwartney, J.D. and Lawson, R. A. (2003) "The Impact of the Economic Freedom of the World Index" Working Paper in Regional Meeting of the Mont Pelerin Society Chattanooga, Tennessee USA, September, pp.18-21, 2003.

Hand book of statistics on Pakistan Economy (2005), Published by State Bank of Pakistan.

Harris, R. and Sollis, R. (2003), *Applied Time Series Modeling and Forecasting,* Wiley: West Sussex.

Huntington. S.P. and Dominguez, J.I. (1975) "Political Development" *In Handbook of Political Science, Vol.3*, pp.1-113.

Hye,Q. M. A. and Wizarat, S. (2011), "Impact of Financial Liberalization on Agricultural growth: A Case Study of Pakistan" *China Agricultural Economic Review*, Vol.3, No.2,pp.191-209.

Johansen, S. (1991), "Estimation and Hypothesis Testing of Co- integration Vectors

in the Presence of Linear Trend" *Econometrica,* Vol.59, pp.1551-1580.

Johansen, S. (1995), "A Statistical Analysis of I(2) variables" *Econometric Theory* ,Vol.11, pp.25-59.

Keech, W.R. (1995), *"Economic Politics: The Costs of Democracy"* New York: Cambridge University Press.

Kuznets, S. (1973), "Modern Economic Growth: Findings and Reflections" *American Economic Review, Vol.* 63, No.3, pp.247-258.

Lewis, L.A. (1954), "Economic development with ultimate supplies of labour" *Manchester School,* Vol.22, pp.139-191.

Lin, J.Y. and Nugent, J.B. (1995) "Institutions and Economic Development' In Behrman, J. and Srinivasan, T.N. (eds), Handbook of Development Economics, Vol.3, pp.2301-70.

Lohmann, S. (1999) "What Price Accountability? The Lucas Island Model and the Politics of Monetary Policy"American Journal of Political Science, Vol.43, pp.396-430.

Paresh, K.N. (2005), "The saving and Investment Nexus for China: Evidence from Co-integration Tests" *Applied Economics,* Vol.37, No.17, pp1979-1990.

Pastor, M. and Sung, J.H.(1995) " Private Investment and Democracy in the Developing World" *Journal of Economic Issues*, Vol.29, pp.223-243.

Persson, T. and Tabellini G. (1994) "Is Inequality Harmful for Growth?" *The American Economic Review, Vol.*84, pp.600-621.

Pesaran, M.H., Shin, Y. and Smith, R.J. (2001). Bound Testing Approaches to the Analysis of Level Relationships" *Journal of Applied Econometrics,* Vol.16, No.3, pp.289-326.

Shahbaz, *et al*. (2008), "Rural-Urban Inequality under Finance and Trade Nexus: An Econometric evidence" paper in PSDE 23rd Annual General Meeting and Conference.

Sollow, R. (1956), "A Contribution to the Theory of Economic Growth" *Quarterly Journal of Economics,* Vol.70, No.1, pp.65-94.

Wizarat, S. and Hye, Q.M.A. (2010), "Financial Reforms and Industrial Sector Growth: Bound Testing Analysis for Pakistan" *South East European Journal of Economics and Business*, Vol.5, No.2, pp.75-81.