

## Financial Sector, Democracy and Economic Growth: A Panel Data Analysis

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Economic growth depends on many factors like the traditional factors of capital, labour and technological advancement and the somewhat novel factors of financial development and the nature of political regime. The relationship between the nature of political structure and economic growth is quite complicated. There may be direct and indirect impacts of the nature of political set up on economic growth. However, these channels remain un-explored to larger extent. The present study is conducted to analyse economic growth under democracy and dictatorship for a considerably larger set of countries from 1974 to 2013. The indirect impact of democracy on economic growth is analysed through an unexplored channel of financial sector performance, which is expected to be sensitive to regime type. The direct impact of democracy is found to be positively significant on economic growth. Likewise, direct impact of financial sector performance on economic growth is also found to be positive and significant. However, democracy had negative indirect impact on economic growth through financial sector but the magnitude of this indirect negative impact is minute enough to be ignored as compared to large individual direct effects of democracy and financial sector.

*JEL Classification:* O40, O43, O16

*Keywords:* Economic Growth, Democracy, Dictatorship, Financial Sector Performance

### 1. INTRODUCTION

Economic growth is of great concern in today's modern world as it is the main yard stick to measure the development and progress of any nation. Economic growth depends on various variables leading from socio cultural values to political scenarios. Different studies are conducted which relates the economic growth to different variables like education, investment, remittances, law and order, infrastructure, corruption and financial sector. Similarly, there are various studies relating the economic growth to the political regime where both direct and indirect impacts of democracy upon economic growth can be seen.

Financial sector and political regime both have impact on economic growth. Therefore, it is of no surprise that any alteration in one can alter the impact of other. Main variables of financial sector like money supply, market capitalisation and credit provision can increase economic growth as evident from literature. However, the question is how financial sector and democracy together act to foster economic growth?

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Theoretical debate regarding the possible net impact of democracy on economic growth is very interesting. Many political scientists are of the view that democracy has no direct net impact but it influences economic growth indirectly. This indirect impact is seen through channels of human capital, physical capital, corruption, technological innovations, investment, education, governance, state strength and many others.

Critics of democracy argue that democratic regimes are connected to the pressures from median voters to increase consumption which reduces investment funds and hence retards economic growth. Huntington and Dominguez (1975) argued that democratic government remains under huge pressure from the public to increase current consumption. This increase in personal consumption of public causes shrinkage investment funds in productive venues which retards the rate of economic growth. Becker (1983) pointed out that rent seeking behaviour of interest groups who try to maximise their benefits by pressurising government under a democratic form of government creates a dead weight loss in economy.

Dictatorship is considered to be more favourable than democracy by some studies on the bases that dictatorship has control over unfavourable actor like labour unions and hence accelerates growth through the channel of investment and saving as suggested by Knutsen (2010). Olson (1982) also argued against democracy on the basis of its vulnerability to particular pressure blocks. He argued that government in democratic regime can be pressurised by interest groups and vote blocks which will lead to policies against majority of populace by protecting the interests of small pressure groups. Wade (1990) stated that under autocracy politicians and bureaucrats will be free from pressures of interest groups. Another argument against democracy is the presence of veto-players as discussed by Tsebelis (2002). These veto-players will block the reforms introduced by democratic government in order to protect their potential political loss or defeat.

Advocates of democracy argue that it is democracy which protects the property rights and hence increases economic growth. Olson (2003) argued that the negative impact of violation of property rights will be less in democracies as they redistribute less to itself than an autocrat. Halperin, *et al.* (2005) claimed a superior developmental role of democracies over dictatorships as they are more adoptive to technological innovations because of high education and human capital. Gerring, *et al.* (2005) stipulated that a long time prevalence of democracy can accelerate economic growth through four channels which can be considered as different types of capital. These channels are human capital, physical capital, social capital and political capital. Baghwati (1995) also argued in democracy's favour by stating that less military conflicts are there between democratic nations which supports world peace and played a positive role in economic growth.

## 2. LITERATURE REVIEW

There are number of empirical studies as well interlinking the democracy and economic growth. Barro (1996) investigated the relationship between democracy and economic growth for the panel of 100 countries from 1960 to 1990. A weak negative and non-linear relationship was suggested in this study.

Franciso (2002) studied the long run growth effect of democracy through channel of quality of governance for a panel of 59 countries over the period 1960-90. The results indicated that democracy has a significant impact on economic growth as it is one of the

main components of total factor productivity. It also influences growth through the channel of governance quality which gives scope to technology and reduces corruption.

Persson and Tabellini (2006) conducted a study for a panel of 150 countries for time span 1960-90. Among the sample 120 countries experienced a regime change during the study period. The results show that both democratisation and economic liberalisation are associated with some reforms which, in turn, enhance economic growth during the transition phase of the economy (i.e., regime switching into democracy).

Cervellati and Sunde (2014) investigated the inter connections between democratisation, growth and violent conflicts for a panel of 166 countries for time period 1960-2003. The main focus of the study was on the third wave of democratisation which took place after 1970. Results indicated that civil conflicts weaken the growth impact of democratisation. A non-violent democracy or transition to democracy is more fruitful for growth.

Drury, *et al.* (2006) discussed the impact of corruption on growth in two different political regimes, democracies and non-democracies for a panel of 100 countries with time span 1982-97. They found only an indirect growth enhancing impact of democracy through the channel of corruption. Corruption's negative impact on growth tends to be reduced in democracies as compared to dictatorships.

Zouhaier, *et al.* (2006) investigated the linkages between democracy, investment and country's economic performance for 11 countries from MENA region for time period 2000-09. Democracy's impact on investment was seen to be positive hence suggesting its role in growth through the channel of investment in the sample countries. Political rights and investment interaction was also observed to be positive.

Papaioannou, *et al.* (2008) investigated the with-in country effects of democratisation by studying the growth performance before and after the transition phase towards democracy. Results of this study showed 1 percent increase in the growth of real GDP per capita as result of democratisation. It was also revealed that growth declines during transition year/years but as time passes growth rate comes again on stable path. Transition on reverse path (Democracy to Autocracy) was found to have negative growth impact.

Helliwell (1994) studied the two-way linkages between democracy and economic growth for a data panel of 125 countries for 25 years (1960-85). Income was found to have a significant positive impact on democracy while the counter relation was found to be complex in nature. Democracy direct impact was observed to be negative but insignificant but its indirect impact through channel of investment and education was positive which offset the direct negative impact indicating an overall weak positive net impact of democracy on economic growth.

Rodrick, *et al.* (2005) studied the post democratisation growth patterns of developing countries. Transition towards democracy was seen fruitful while state failure was seen damaging for growth. This study as whole suggested democracy beneficial for growth both in long run and short run.

Baum, *et al.* (2003) tried to explore the indirect effect of democracy on growth through the channels of education and life expectancy. Two recursive equations were used to capture direct and indirect impact of democracy for a panel of 128 countries spanning from 1967 to 1997. Direct impact of democracy was found to be insignificant.

However, democracy was found to influence growth positively through channel of life expectancy in poor and through secondary education in non-poor countries.

Doucouliaagos and Ulubasoglu (2008) conducted a meta-analysis based on 483 estimates derived from 84 studies from the literature. The studies' results were widely spread between positive and negative impacts of democracy over growth. 15 percent showed a positive and significant impact of democracy on growth, 21 percent show positive but insignificant impact, 37 percent results were negative but statistically insignificant while proportion of significant results was 27 percent.

### **Impact of Financial Sector on Economic Growth**

Growth literature nowadays incorporates several things related to material world (Physical Capital, Investment, institutions) and immaterial world (social values, ethical values, human capital, law and order) but still financial sector development is a hot issue to discuss. Financial sector is believed to have a key role in shaping the growth and developmental path of an economy. It is evident from existing studies in growth literature that financial liberalisation and financial reforms play key role in growth of an economy by bringing in foreign investment or improved industrialisation. Among important studies discussing financial development and economic growth relationship, Walter Bagehot (1873) and Joseph Schumpeter (1911) are considered to be pioneers. These scholars termed financial sector development as the major component of economic growth. Other studies like Robinson (1952), Beck, *et al.* (2003) and Levine, *et al.* (1998) also indicated a positive impact of financial development over economic growth.

On other hand, Keynes (1936) oppose the positive growth impact of financial development by arguing that stock markets inherently possess speculative activities which increase with the degree of development of financial systems and hence put negative and destabilising impact on economy's growth. Several Empirical Studies like Gregorio, *et al.* (1995) and Andersen, *et al.* (2003) supported Keynes argument.

Bagehot (1873) held responsible the established financial system of England in mid-1800s as the main reason of its success and wealth which put it in distinguished position in comparison to other poor countries in that era. He also pointed out that financial systems are responsible to generate savings as aggregate saving is composed of both private and national savings.

Levine, *et al.* (1998) investigated the effect of stock market performance and financial intermediaries on economic growth for a cross sectional averaged data of time period 1976-93. This study found a positive and significant impact of both stock market and financial sector intermediaries on economic growth.

Beck, *et al.* (2003) examine the role of stock market in growth structure of an economy by bringing in concern the time variable nature of stock market data for a panel of 40 countries for time period 1976-98 Results from the estimation concluded that both stock market and bank development show a joint significant impact on the development of economy and foster economic growth.

In opposite, there are several other studies indicating negative impact of financial sector development on growth. Ram (1999) investigated the relation between growth of real GDP per capita and financial development by using data panel consisting of 95 countries spanning from 1960 to 1989. This study indicated a weakly negative or even negligible impact of financial development on growth of real GDP per capita.

There are several other studies suggesting positive impact of financial development on growth of an economy like Goldsmith (1969), Levine (1991) and Saint-Paul (1992). Other shows insignificant or no impact of financial development on growth as Lucas (1988) termed the role of financial sector development in growth structure of an economy to be minor and negligible. Stern (1989) also suggested no role of financial development in the growth process. A negative impact of financial development is also found in literature as suggested by Keynes (1936) and is empirically supported by Gregorio (1995) and Andersen (2003) and Ram (1999).

### Impact of Democracy on Financial Institutions

Similar to economic growth financial sector has also number of components in its development strategy. Several important components are discussed by many which can bring financial development like financial reforms, political stability [Roe, *et al.* (2013)], trade openness [Rajan, *et al.* (2003)] and legal system structure [Porta, *et al.* (1998)]. Among all determinants of financial developments, regime type and democratic structure of country's institutions are of vital importance.

Wittman (1989) argued that under democratic institutions the efficiency of financial markets improves and transaction cost is reduced. Similarly, a visit to the literature by Malmendier (2009) concluded that politics and political regimes' role can't be ignored in the discussion of financial sector development. Numerous other studies are there in literature linking other studies linking political regimes and financial sector development included Huang (2010), Rajan, *et al.* (2003) and Clague, *et al.* (1996).

Clague, *et al.* (1996) investigated the relationship between democracy and financial sector development. They argued that as democracy better protect individual and property rights which will give incentives for investment to private investors hence bring improvement in financial sector. Huang (2010) linked the political institutions with financial development. Study suggested a positive and significant impact of institutions' improvement on financial sector development. This study also concluded that democratic transformation brings a boom in financial sector growth in the short run.

### 3. MODEL AND METHODOLOGY

Econometric model is constructed by modifying the famous Cobb-Douglas production function. Cobb-Douglas production function states that output is the function of inputs and total factor productivity. Further, total factor productivity depends on several economic, political, social and technological factors. We have introduced the role of political regime and financial sector into the growth of an economy through total factor productivity. Our model is given below which is modified with different proxies for financial sector and also combine term whenever required for the statistical purposes [Griliches (1979 and 2000)] For the linearity of model and growth inertia we have adopted the precedence from the literature. [For details see, Barro (1996), Mankiw (2002)].

$$Y_{i,t} = \alpha_0 + \beta_1 \cdot Y_{i,t-1} + \beta_2 \cdot Pol_{i,t} + \beta_3 \cdot FS_{i,t} + \beta_4 \cdot K_{i,t} + \beta_5 \cdot L_{i,t} + \varepsilon_{i,t} \dots \quad (1)$$

$Y_{i,t}$  = natural log of real GDP per capita

i = 1, 2, 3 ..... n. (representing cross section)

$t = 1, 2, 3 \dots T$ . (representing time in years)

$\varepsilon$  = error term

FS = Financial sector (M2, credit availability and market capitalisation ratio to GDP)

Pol= Polity Scale IV

By introducing an interactive term of polity (regime time) and different financial sector variables, we are intended to capture indirect impact of polity through financial sector. This can be seen in Equation (2).

$$Y_{i,t} = \alpha_0 + \beta_1 \cdot Y_{i,t-1} + \beta_2 \cdot \text{Pol}_{i,t} + \beta_3 \cdot \text{FS}_{i,t} + \beta_4 \cdot \text{Pol}_{i,t} * \text{FS}_{i,t} + \beta_5 \cdot K_{i,t} + \beta_6 \cdot L_{i,t} + \varepsilon_{i,t} \quad (2)$$

We will also split our model into democratic and autocratic regimes on the basis of polity index where positive values are taken as democracy and negative values are taken as autocracy. Polity index has value between -10 and +10). [see Drury, *et al.* (2006)].

#### 4. DATA COLLECTION AND DESCRIPTIVE STATISTICS

Data is collected from various standard databases used widely in literature. Data on economic growth is taken as log of GDP per capita from World Development Indicators of World Bank WDI (2014).

For democracy we have extracted data from Polity IV index which is a 21-point scale ranging from -10 to +10, where -10 shows the extreme value for dictatorship while +10 indicates maximum of democracy.

Data of financial sector proxies which are Money supply ratio to GDP, market capitalisation ratio to GDP and Private credit to GDP is taken from the WDI (2014).

Data on various control variables which are investments (used as proxy for capital), labour, government expenditure, inflation, population growth, trade openness, life expectancy and education is taken from WDI (2014). A table with definitions of different variables and sources is presented in the Appendix.

Table 1

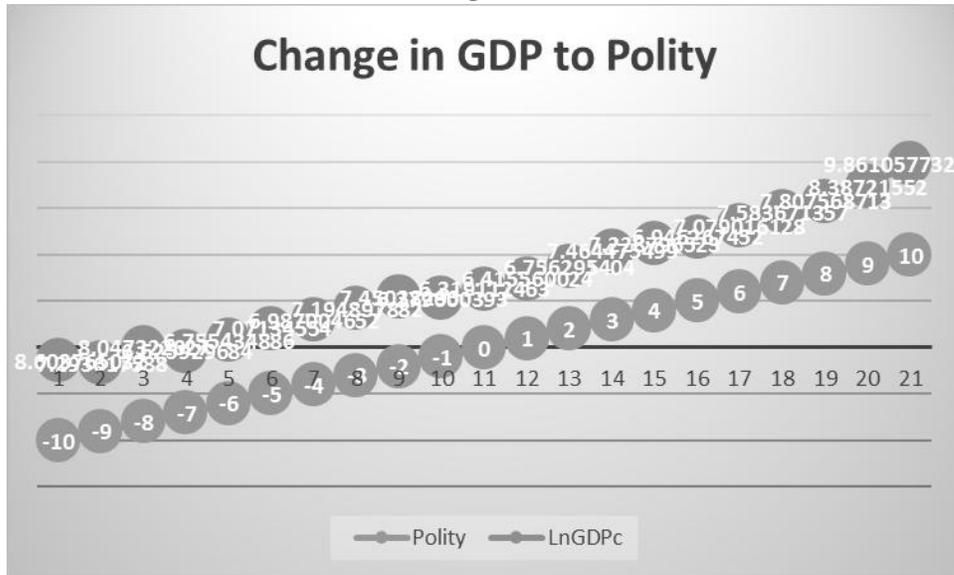
##### *Summary Statistics of Main Variables*

Variable	Total				
	Observations	Mean	Standard Deviation	Minimum	Maximum
Ln GDPc	1112	7.8192	1.6131	4.2596	11.3277
Investment	1083	3.029	0.3713	0.7333	5.1399
Labour	795	15.1529	1.6151	11.0015	20.4735
Money Supply	1056	3.6696	0.7052	1.4784	8.8445
Market Capitalisation	530	3.05372	1.3776	-3.4071	6.1733
Credit Availability	1090	3.0537	1.3776	-3.4071	6.1733
Polity	1173	1.4146	7.2087	-10	10

Figure (a) relating the change in GDP to change in points on polity scale shows positive relationship between regime type and development of an economy. The GDP shows a parallel continuous increase with every point movement from autocratic form of government towards the democratic. Polity scale starting from -10 being most autocratic

to +10 being most democratic shows a constant increase in real GDP per capita with every point improvement towards the most democratic.

Fig. (a)



Financial sector also shows a positive linear relationship with polity variables which shows that financial sector also derives benefits from democracy (Figure b). Similarly, Figure (c) relating polity IV scale and financial sector ratings [WDI (2014)] also show a positive relationship between financial sector and democracy's variables.

Fig. (b)

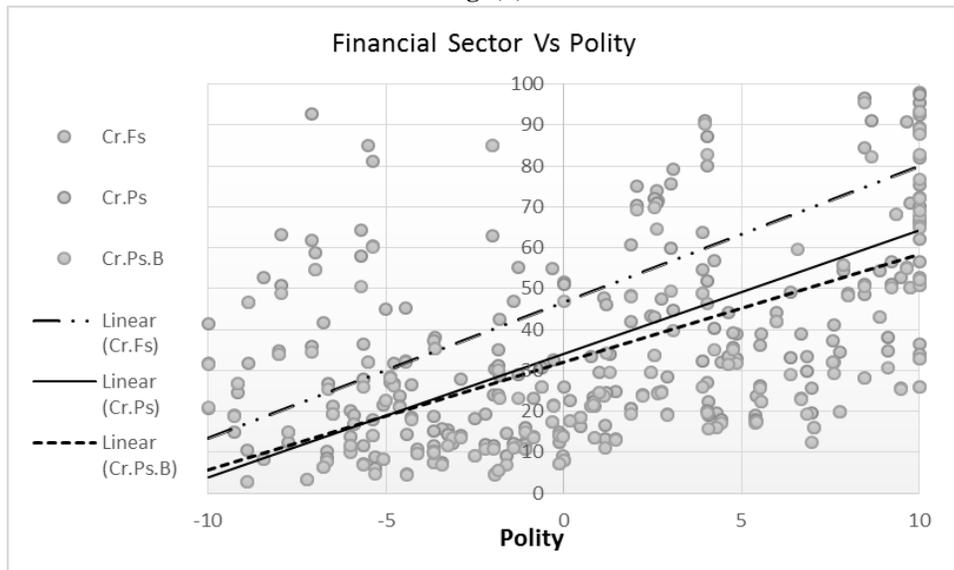
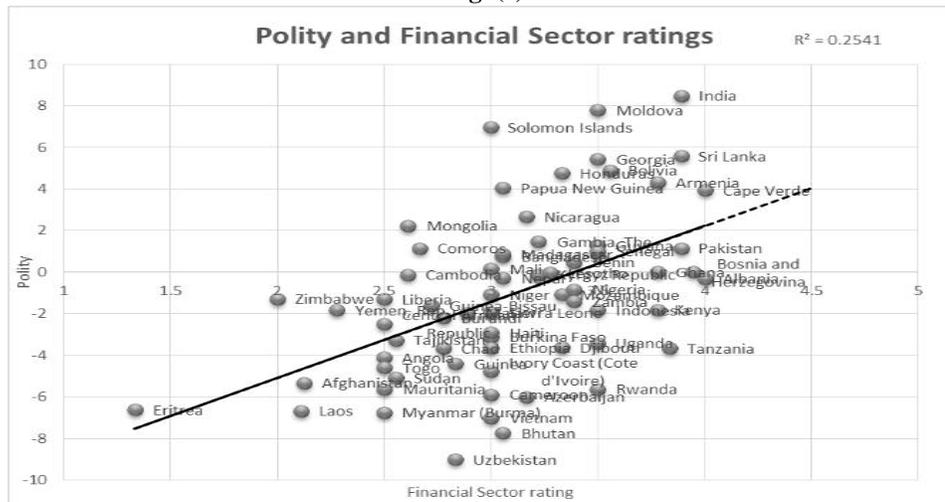


Fig. (c)



## 5. EMPIRICAL RESULTS AND DISCUSSION

We apply various econometrics tests to check the statistical problems like normality issues, heteroskedasticity, auto correlation, multicollinearity and endogeneity. We are using a larger data panel having issues of endogeneity which makes the OLS estimator biased and inefficient. We attempt to overcome the issue of endogeneity by estimating system Generalised Method of Moments with exogenous instruments as well as lags of independent variables as instruments. Exogenous instruments used in system GMM estimation are legal origin, regional dummies, time dummy, war count and religious fractionalisation.

### 5.1. Diagnostic Tests

Our basic data diagnostic tests reported below are shows no problem of multicollinearity which is check through variance inflated factor reported in Table 2. VIF value is far below the critical value of 10 suggested no relationship between the dependent variables. Linearity of the model is also confirmed through Ramsey Reset Test (Table 2) hence showing no misspecification of model form. Null hypothesis of no misspecification or correct functional form is accepted. In addition to that, results of Breusch Pagan test of heteroskedasticity confirm that the data panel is heterogeneous in nature as cross-section is enormously greater than time series.

Dependents variables don't have any explicit relationships hence there is no problem of multicollinearity. However, the problem of omitted variables and endogeneity in the model are the issue which make the OLS results bias and less efficient. No formal test of endogeneity has been conducted. But as evident from previous growth studies investment and growth inertia is always endogenous to growth. So, we also assume a default endogeneity in our model as well and use the lag of independent variables as the instruments in growth equation [Arellano and Bond (1991)]. Therefore, for final and robust results GMM with lags as instrument to control for endogeneity as well as hetero problem in the panel is estimated with hetero adjusted robust errors.

Table 2

*Variance Inflated Factor results*

Model Type	Variables	Money Supply	Market Capitalisation	Credit Availability
		VIF value	VIF Value	VIF Value
	Log of GDPpc	2.55	2.99	2.36
	Log of Financial Sector Variable	1.62	1.90	1.74
	Polity/ Democracy	2.05	2.11	2.54
	Investment	1.15	1.09	1.21
	Labour	1.81	1.63	1.74
	<b>Mean VIF</b>	<b>1.59</b>	<b>1.88</b>	<b>1.74</b>

Table 3

*Different Normality Tests*

Model Test		Money Supply	Market Capitalisation	Credit Availability
Shapiro-Wilk	Z-score	9.145	9.229	10.582
	P-value	0.0000	0.0000	0.0000
Jarque-Bera	P-value	0.0000	0.0000	0.0000
Skewness	P-value	0.0000	0.0000	0.0000
Kurtosis	P-value	0.0000	0.0000	0.0000

Table 4

*Model Specification and Linearity Tests*

Model Test		Money Supply	Market Capitalisation	Credit Availability
Ramsey Reset (Omitted Variable)	F-stat	10.005	12.358	11.302
	P-value	0.0000	0.0000	0.0000
Ramsey Reset (Linearity)	Chi-square	3.81	4.22	3.57
	P-value	0.0926	0.05532	0.1081
Link Test	Hat (P-value)	0.0000	0.0000	0.0000
	Hat-square (P-value)	0.1283	0.119	0.1030

Table 5

*Breusch-Pagan/Cook-Weisberg test for Heteroskedasticity*

	Money Supply	Market Capitalisation	Credit Availability
Chi-Square	58.33	57.29	62.19
P-value	0.0000	0.0000	0.0000

## 5.2. Estimation Techniques

As evident from the literature that panel data have twin problems of autocorrelation and heteroskedasticity of time and space. Therefore, our main focus will be on the results of system GMM which is used to tackle these issues along with endogeneity arising from the endogenous nature of polity and investment variables.

Results of OLS show that polity has positive impact on economic growth under democracy and negative impact under dictatorship. Likewise, the impact of financial sector also fluctuates as we change the proxy variable which shows the inconsistency of OLS in an endogenous growth and democracy relationship. OLS is based on arithmetic mean formula where the estimated line passes through the average of data set. It is based on the minimisation of sum of squared errors criteria. OLS is assumed to be unbiased and best under certain set of assumptions like normality, no auto and no hetero problem. But our data panel doesn't fulfil the conditions of OLS which induces us to move to GMM estimations in order to control the problem of endogeneity as well as get rid of hetero and auto problems.

For this reason, we have estimated system GMM with lags as an instruments along with some exogenous instruments. GMM is based on the moment's conditions where the criterion for best parameter estimate is to minimise the sum of squared moments. Dynamic panel data is mostly estimated through system and different GMM technique by using some instruments of own lag value for dependent variable or some exogenous instrumental variables. [Arellano and Bover (1995) and Blundell and Bond (1998)].

Table 6

### *Financial Sector, Democracy and Economic Growth—OLS results*

	Combine	Democracy	Dictatorship	Combine	Democracy	Dictatorship	Combine	Democracy	Dictatorship
Lag of GDPpc Growth	0.981*** (0.00536)	0.975*** (0.00647)	0.981*** (0.0125)	0.973*** (0.00510)	0.973*** (0.00642)	0.949*** (0.0157)	0.975*** (0.00568)	0.971*** (0.00659)	0.974*** (0.0131)
Investment	0.207*** (0.0173)	0.149*** (0.0223)	0.246*** (0.0301)	0.239*** (0.0227)	0.245*** (0.0286)	0.216*** (0.0437)	0.201*** (0.0170)	0.144*** (0.0217)	0.243*** (0.0300)
Polity	-0.00633 (0.00543)	0.00826** (0.00337)	-0.00422 (0.00594)	0.00495** (0.00235)	0.00806** (0.00369)	-0.00859 (0.00622)	-0.00261 (0.00359)	0.00653** (0.00332)	-0.00390 (0.00593)
Labour force	0.00535 (0.00398)	0.000389 (0.00395)	0.0195* (0.0101)	-0.000354 (0.00390)	-0.00582 (0.00417)	0.0156 (0.0104)	0.00274 (0.00393)	-0.00170 (0.00384)	0.0150 (0.0102)
Money Supply	0.00700 (0.0118)	0.0320** (0.0130)	-0.0172 (0.0230)						
Money Supply*Polity	0.00225 (0.00142)								
Market Capitalisation				0.0219*** (0.00583)	0.0158*** (0.00594)	0.0448*** (0.0125)			
Market Capitalisation*Polity				-0.000590 (0.000686)					
Private Credit							0.0224** (0.00920)	0.0366*** (0.0101)	0.00811 (0.0181)
Private Credit*Polity							0.00128 (0.00104)		
Constant	-0.505*** (0.0828)	-0.342*** (0.0877)	-0.785*** (0.193)	-0.478*** (0.103)	-0.433*** (0.122)	-0.603*** (0.227)	-0.449*** (0.0836)	-0.252*** (0.0881)	-0.737*** (0.201)
Observations	658	448	203	453	358	93	673	463	203
R-squared	0.990	0.993	0.980	0.993	0.994	0.991	0.991	0.994	0.980

Standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

### 5.3. Financial Sector, Democracy and Growth- System-GMM results

The direct impact of polity variable is found to be positive and significant in the presence of different indicators of financial sector which are money supply, market capitalisation and credit availability to private sector. The coefficient sizes of polity are 0.024, 0.012, 0.020 in the models of money supply, market capitalisation and private credit, respectively (Table 6.7). These results indicate that democracies put direct effect on economic growth of about 2 percent on average with a point increase on polity scale. Our results are consistent with earlier studies showing direct positive growth impact of democracy because in democracies business activities increase [Baghwati (1995); Halperin, *et al.* (2005)].

All the interactive terms of money supply, market capitalisation and private credit with polity have negative and significant sign. This shows that although democracies accelerate growth by providing better economic conditions but in financial sector its role is different. Although supply of money affects growth positively in its individual capacity (0.0267) implying that whenever money supply is increased by 1 percent, it will increase economic growth by approximately 2.6 percent. But in democracies the combine impact is negative with a negligible co-efficient of interactive term (-0.005). This can be due to the fact that in democracies some part of increased money supply is used in non-productive activities. These non-productive activities can be advertisement and vote bank extension by ruling party, or taking pressure of public to fulfill current consumption demands by subsidising different consumable products [Huntington (1992)].

Market capitalisation shows positive direct impact of (0.162) implying that 1 percent increase in market capitalisation will accelerate economic growth by 1.62 percent. Like money supply here as well indirect impact of democracy is -0.3 percent through market capitalisation which can be ignored in the presence of 1.16 percent direct impact of democracy. The indirect negative impact of democracy through market capitalisation can be linked with the non-liberalisation of capital markets even in presence of democracies.

As suggested by Thomas Apolte (2011) that institutional structure matters for implications of democracy on growth. Likewise, financial sector can lead to high growth in democracies only when democratisation is followed by financial liberalisation as well. Baghwati (1995) in his theoretical discussion asserted that democracies enhance growth where capital markets are liberalised. Therefore, we can say that market capitalisation and democracy will not have combine positive and favourable growth impact because financial sectors are not necessarily liberalised with democracies. Mostly the financial liberalisation occurred in the economies years after they have evolved into democracies. [Baert, *et al.* (2005)]. In case of third variable private credit availability ratio to GDP, the direct impact is positive but insignificant due to sensitivity to polity variable. The sensitivity of credit availability to polity variable is in line with earlier literature showing that whenever we bring the democracy variable into growth equation, it draws out the impact of credit availability making it insignificant [Baert, *et al.* (2006)].

The combine effect of credit and polity shows negative effect of credit on growth when it is democratic form of government. However, the co-efficient size is very small of about -0.05 percent. In democracies the credit is extended on political bases to widen the vote bank of ruling party or credit schemes are devised which are not pro-growth but pro-vote.

In second step, we split sample into democracies and dictatorships. For democracies we have applied the data where the polity variables show a value in positive and for dictatorships a value in negative, respectively. The control variables show stable and significant signs to the changing proxies of financial sector. Investment as the main control variable for growth shows stable and significantly positive impacts on growth in both combine and split samples. We found that investment enhanced economic growth in democracies and is consistent with studies of Zouhaier, *et al.* (2006) and Persson, *et al.* (2006).

Labour force is seen to have negative growth impact in case of democracies but positive for dictatorships. It is due to the fact that democracies mostly faced enormous pressure from public to bring an immediate increase in their current consumptions shift funds from production sector to subsidies [Helliwell (1994)].

The direct impact of polity/democracy is positive in all cases of combine sample which is indication that democracy does have a favourable role in growth economics. This favourable role can be in form of conducive growth environment [Diebolt, *et al.* (2013)], protection of property rights [Przeworski, *et al.* (2002), liberalisation of other institutions [Thomas (2011)] and improved human capital [Baum, *et al.* (2003)]. In split sample analysis the polity variable keeps its positive and significant sign in case of money supply and credit models.

Table 7

*Financial Sector, Democracy and Growth—System GMM Results*

	Dictator-ship			Dictator-ship			Dictator-ship		
	Combine	Democracy	Dictator-ship	Combine	Democracy	Dictator-ship	Combine	Democracy	Dictator-ship
Lag of GDPpc Growth	0.990*** (0.00519)	0.982*** (0.00584)	0.989*** (0.0113)	0.983*** (0.00564)	0.983*** (0.00525)	0.997*** (0.0144)	1.002*** (0.00819)	0.980*** (0.00690)	0.978*** (0.0125)
Investment	0.282*** (0.0322)	0.310*** (0.0357)	0.128*** (0.0359)	0.313*** (0.0267)	0.315*** (0.0362)	0.215*** (0.0440)	0.296*** (0.0356)	0.300*** (0.0380)	0.155*** (0.0347)
Labour Force	0.00347 (0.00329)	-0.000738 (0.00298)	0.0331*** (0.00513)	0.00454 (0.00369)	-0.00260 (0.00337)	0.0451*** (0.00630)	0.00407 (0.00398)	-0.00226 (0.00274)	0.0293*** (0.00456)
Polity	0.0243*** (0.00802)	0.00664*** (0.00217)	0.00356** (0.00160)	0.0116*** (0.00420)	0.00136 (0.00277)	0.00214 (0.00224)	0.0200*** (0.00628)	0.00771*** (0.00222)	0.00392** (0.00179)
Money Supply	0.0267* (0.0146)	0.0159 (0.0149)	0.0816*** (0.00914)						
Money Supply*Polity	0.00553*** (0.00207)								
Market Capitalisation				0.0162** (0.00802)	0.00423 (0.00740)	0.0389*** (0.00798)			
Market Capitalisation*Polity				-0.00302** (0.00125)					
Private Credit							0.00853 (0.0139)	0.00936 (0.0141)	0.0703*** (0.00746)
Private Credit*Polity							0.00503*** (0.00182)		
Constant	-0.848*** (0.0937)	-0.797*** (0.103)	-1.028*** (0.121)	-0.835*** (0.116)	-0.686*** (0.145)	-1.361*** (0.130)	-0.899*** (0.117)	-0.707*** (0.115)	-0.887*** (0.133)
Number of Instruments		77	68	26	79	68	20	71	63
AR (1)		0.042	0.066	0.122	0.033	0.078	0.171	0.071	0.199
AR(2)		0.086	0.166	0.202	0.097	0.113	0.264	0.082	0.119
Hansen J. Test		0.273	0.515	0.492	0.551	0.388	0.814	0.263	0.411
Observations	500	377	139	319	316	64	499	392	139
Countries	114	93	44	83	76	21	113	93	44

Standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

The impact of money supply is positive in split sample analysis and confirms the result of combined sample. Here we can see in second column of Table 7 that under democratic regime the impact of money supply turns insignificant although positive. Which means that democracies do not perform well when it comes to achieve growth targets through use of money supply tool.

In split sample analysis the impact of market capitalisation is seen to be insignificant in case of democracies but in dictatorships it turns to be positive and significant. But it should be seen that the results in split sample is not negative for democracies which is the indication that democracies don't derive extra growth benefits from financial sector but it is not harming the current growth as well.

Impact of credit availability is insignificant for combine and in split sample of democracies. While in dictatorships a positive significant impact is seen which is similar to our other two variables from financial sector, money supply and market capitalisation. Insignificant impact of credit in combine sample and its negative interactive impact with polity indicate that credit itself has no impact on growth when we bring the democracy in picture. China can be a bright example of positive impact under dictatorships where home scale production industries were developed by extending credit to the skilful labour which gives boost to production on low cost.

## 6. CONCLUSION

From the results we conclude that all the variables used as proxies for financial sector are directly affecting the economic growth positively and significantly. Likewise, direct impact of democracy on growth is also found to be positive and significant. However interactive term of financial sector and democracy insert negative impact on economic growth. This indicates that financial sector does not behave efficiently under democracy. The reason maybe that it is not necessary that financial markets are liberalised under democracy to gain maximum benefits in terms of growth. While it has been observed that financial markets are liberalised years after democratisation. The results provided by combined sample are supported by split sample analysis as well. The co-efficient of financial sector variables are significantly positive in dictatorship's models and insignificant in democracies' showing that democracies do not outperform dictatorships in financial sector performance. It is because democracies are more vulnerable to political violent activities which influence the financial sector performance in worse manner.

We conclude our study here by answering the question about direct impact of democracy on economic growth and also its indirect impact through financial sector variables. The answer is that democracies positively influence economic growth directly as it ensures property rights and improves business environment through advanced technological innovation and improved human capital. But its indirect impact through channels of money supply, market capitalisation and credit availability to private sector is negative.

## APPENDIX

## A1. Data Variables Definitions and Sources

Variable	Description	Source
Growth	Natural log of annual percentage growth of GDP.	WDI (2014)
Democracy	Two measures are used for democracy	Freedom House (2014) and Polity (2014)
Polity IV	Measure of democracy based on several indicators from free and fair election to the constraints on executive.	Polity IV index (2014)
Financial Sector Performance	Measure by three different variables. i) M2/GDP ratio Total money supply as a percent of GDP ii) Market Capitalisation to GDP ratio Total share of market capitalisation as a percent of GDP iii) Private Credit to GDP ratio Volume of credit to private sector as a percent of GDP	World Bank's Global Financial Development Database (GFDD), 2014
Investment	Gross domestic investment as percentage of GDP.	World Bank Database (2014)
Labour Force	Growth in labour force over a year	World Bank Database (2014)

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