Financial regulations and economic development – empirical evidences from upper middle income, lower middle income & low income countries

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Abstract

Financial regulations influence financial system operations. Financial stability and instability is very much dependent on these regulations on which system works. This study investigates impact of financial regulations impact on economic growth and development. For this purpose countries are selected among therein are upper middle income, lower middle income and low income countries. Time period covers 1995-2015. Current account balance regulation is positively affecting growth process in upper middle countries, lower middle income countries and low income countries where as Inflation regulation is only positively affecting growth process in lower middle income economies.

Based on paper finding suggests some policy conclusions that can help nations to grow faster. For a prosper growth all set of countries should focus more on current account balance regulation since it's the most significant regulation that that positively effects growth process. Secondly inflation regulations should be the focus area for countries from lower middle income. These countries if focus more on inflation regulation they can progress more in economic development and growth.

Introduction

Background and Motivation of Study

Financial regulations such as current account balance, interest rate, inflation and reserve related items regulations play the vital part on country's growth and economies steadiness. Their critical role in economy is for their platform they provide between savers and borrowers of funds in an economy. The more efficient, effective and regulated it would be, the more sound financial system would work. In the longer run, it affects long-term economic growth through efficient intermediation between the savers and final funds borrowers. This efficiency will eventually lead to smooth capital employment that contributes to economies growth. More capital will enhance income-generating capacity of the economy. The unstable economies has one or more ignored segments either it's on saving or borrowing or at times both which ultimately risks and the whole system will be unstable.

The main purpose of focusing this area is to examine the impact of financial regulations that influence on economic development or country's growth. Financial regulations along with macroeconomic variable on growth is examined by Alain de Serres,et al (1990:2001) in OECD countries. They conclude that financial system regulation has some statistically significant effect on economic growth of OECD countries. Since the evolvement of the governance issues in current century, it is worthwhile to check the impact of those financial regulations on economy's growth. Levine (2005) has empirically examined and finds that financial systems regulations have impact on growth. This has been examined by empirically studying cross country study of growth and finance, evidence from time series investigation, and more specifically country specific study. Lastly firm

level analysis also proves that there is a significant relationship between financial regulations and growth.

Problem Statement

After industrial revolution financial regulations has got an utmost importance. Financial innovations have been important for financial activities accordingly. Regulated financial activities of a country can play an integral part in economic growth and systematic approach to understand each regulation affect on growth over a period of time. Significant regulations can be regulated which can further enhance its growth effect. The overall purpose of the study is to examine the impact of financial regulations on economic growth in Upper Middle countries, Lower middle countries and low income countries. Moreover, study intends to examine affect of regulation on sample countries.

Research Questions

On the basis of objectives of study, following are main questions, being addressed during whole analysis:

1. What is the affect of financial regulations on economic growth for the sample countries?
2. How regulations, such as current account balance, interest rate, inflation, and reserves related item regulations affect the economic development in the sample countries?

Research Objective

- This study empirically examines the effectiveness of financial regulations on economic growth of upper middle, lower middle and low income countries.

Significance of Study

- The study will benefit research students to understand financial regulations impact on economic growth.
- Study will contribute to countries from upper middle, lower middle and low income countries by knowing effect of critical regulations that are significant to economic growth.
- Policy makers can use this work to further regulate regulations in upper middle lower middle and low income countries.

Review of Literature

Financial regulations play a vital role in country's growth. A lot of study has been conducted in past to figure out the horizon of this effect on country's growth. This growth depends upon each country's economic structure that varies from country to country. Studies have already been conducted considering different variables, different set of countries and different time periods. Few of the relevant studies are includes as below.

King & Levine's (1993) examine sample of total 80 countries in their study. On the basis of selected sample they have analyzed economy's growth being the dependent variable with other variables, the amount of liquid liabilities to GDP, The ratio of credit distribution to private entities to total local credit & to the private entities and total local credit divided by GDP. They have found that there is a positive relation that exist with economic growth of selected sample.

De Gregorio & Guidotti (1995) investigates a similar kind of work in which he figured out the impact of financial regulations to growth. In this regard total of 98 countries were selected from sample size of 1960 till 1985. This study only included the ratio of bank credit to private sector to GDP. In this study he also explores relationship that exists between twelve Latin American countries out of the main data set. He concludes his study with some observations that financial development effect on growth in positive but its impact is variant to region, time period and level of incomes. The strength of this relationship is far higher in middle and lower income countries. Researcher also concludes that impact of this relationship is stronger in 1960 than in 1970 and in 1980. Finally he also concludes that what matter is the efficiency of financial intermediaries then of volume of

investments. That means when we talk about financial intermediaries' efficiency it matters more than investment volume.

Demetriades and Hussein (1996) examines effect of financial development to economy's growth. Upon making sample size of 16 developing countries it was observed that connection between dependent and independent variable varies from countries to countries. The relationship varies from growth to finance and it was suggested that it can be concluded that financial development can contribute to growth.

Berthelemy and Var-oudakis (1996) examines sample of 95 countries from the period 1960 till 1985. In work he tries to find convergence clubs based on financial Development level and human capital. On the basis of this criteria they organize the countries in four groups where two are especially interesting from the standpoint of finance and growth. They find out that in countries with very high starting levels of human capital, and low level of financial development, the financial variable (measured as ratio of M3 to GDP) does not have any effect on growth. It is interesting that in that group of countries government consumption has a positive effect on growth, probably because the undeveloped financial system inhibits the growth of private sector savings and investment.

Demetriades and Hussein (1996) examines data set of sixteen countries in which they have choose time period from 1960 to 1990. In their time series analysis they have concluded by studying variables ratios like bank liabilities to GDP & private sector to GDP. These variables shown as the financial development indicators of a country. This study suggested that the relationship between financial development and growth in long run varies country to country. There was also a part of conclusion that out of the panel selected very few of counties have shown that growth has caused financial development. The conclusion of the study is that we cannot conclude it as a universal principal that financial development causes growth and vice versa. This school of thought also agrees with the idea that financial development is driven by different institutions, different policies, different frameworks and different SOP's. Because of these different implementations they negate the idea of cross section equation use.

Odedokun's (1996) examines time series regression analysis in his study to study the effect of financial regulation effect on growth. The sample size includes 71 developing nations. The data collected by researcher in this regard is from 1960 to 1980. His research concludes that out of these 71 countries eighty five percent of countries shows a similar result that financial regulations promotes economic growth. It is also suggested that growth patterns in these countries almost same across different countries in different regions of the sample set. Rajun and Zingales (1998) examines a data that belongs to set of industries of different countries. Purpose of this data collection was to test a relationship that financial development reduces borrowing cost. Their study suggested that industries that were more dependent on external borrowings grows faster in countries that have better developed financial systems. Ram (1999) examines and work on similar opinion that financial regulation and growth relationship is not universal. It varies from country to country. In his study he has taken sample of ninety five counties for the period of 1960 to 1989. In his research he finds out negative correlation in fifty six countries and the mean of ninety five correlation is negative. Upon taking average of all countries it also comes in negative. Finally his study suggests that studying cross country estimates may give vague results, one can't generalize it on whole population. Not each country has the same result individually when we generalize them on overall finding bases on many countries data.

Levine et al. (2000) examines again with change in the panel set of data where he includes 74 countries in his research. The time period in which he takes 5 years averages is from 1960 to 1995. This research concludes that financial system which is highly regulated tends to more legal rights and reforms in a financial sector. These reforms in practice over the period of time tends to develop the economy in terms of systematic borrowings and lending which ultimately boosts up economic growth. Leahhy et al. (2001) conducted a study in which he examines financial regulations effect on

growth of an economy. The sample size collected in this research was only limited to only OECD countries. The results that were found were that there is a linkage between financial growth and economic development. This study is the part of those already conducted studies in similar field which also suggested that despite of the fact that sample size is different in different researches but the results are similar that financial development effects economic growth. Pelgrin et al. (2002) study suggests that financial development which is measured as financial intermediaries and finance relative to GDP has positive impact on growth. This relationship is either directly with productivity or indirectly with effects on buildup of physical and knowledge capital.

Methodological framework and data description

Empirical Model

Panel data is very useful data set for studying different cross-sections over time. Variable data is arranged using panel data so that heterogeneity effect can be taken into consideration in our study. Panel data set is made for the countries from Upper middle countries, Lower Middle countries and Low income countries. Panel data also provides more informative data easy to refer, more degree of freedom and more efficient way by combining time series of cross-sectional observations. Panel data can better measure effects that are normally not possible in pure cross-section or pure time series data. Panel data also enables researchers to study more complicated behavioral models. For example, phenomena such as regulations changes can be better handled by panel data than by pure cross section or pure time series data. By making data available for several thousand units, panel data can minimize the bias that might result if we aggregate individuals or firms into broad aggregates. In nutshell, panel data enriches empirical analysis in ways that may not be possible if we use only cross section or time series data.

We have used panel data in this paper because of its above mentioned benefits. In this study we have classified countries set into three different categories. Upper middle income countries, lower middle countries and low income countries for same time period against each independent variable mentioned in below equation.

$$GROWTH_{it} = a + \beta_1 (Current\ account\ balance)\ it + \beta 2\ (Interest\ rate)_{it} + \beta 3\ (Inflation)_{it} + \beta 4\ (Reserves\ related\ items)_{it} + e_{it}$$

A lot of studies have been conducted to check financial regulations effect on growth. Financial regulation directly or indirectly contribute to growth. This study contains panel data set of three main bifurcation of economies worldwide. These are Upper middle income economies, Lower Middle income economies and low income economies. This bifurcation is as per World Bank classification 2016. We limit our study to independent variables name current account balance BOP, Deposit interest rate, Inflation consumer prices and reserve related items moreover Growth is our depended variable in this regard.

The main focus of earlier study was mostly with different geographical locations. Different sets of countries were selected on the basis of researcher's origins. In this study we will have taken standard set of list of counties which are categorized by World Bank listing of lower and middle income economies. World Bank has their own set of standard KPI's on basis of which they distribute countries list. Our research work is specific to only these countries which are not studied before in a panel with latest data for the period of 1995 to 2015. This study will also help that at lower and middle income economies to know potential importance of financial regulations to country's growth. Where growth is the dependent variables and refers to growth rate of GDP. This growth vary from country to country depending upon different factors that contributes to GDP.

Empirical results and Discussion

We have got different results for different set of countries in our study against each variable. Independent variable behavior on growth variable is not uniform in every case because every country has different circumstances and environment they are located. In general most significant

variable in all set of countries remain the current account balance regulation. This area is the most significant factor that majorly contributes towards country's development in all of list of countries being studied in this panel. Inflation regulation is the only has significant impact in lower middle income countries whereas interest rate regulation has negative significant impact in lower middle income countries.

In detail result discussion of each set of countries is as below:

Upper Middle Income Countries:

The below table showing the results of regression model results of upper middle income countries. The most significant variable is current account balance of payment having probability of less than 5% with t-stats value 8.00. This variable has positive impact on GDP current account balance of payment as the coefficient of respective variable showing. Like if there is 4.73 unit increase in current account balance there will be 1 unit increase in GDP current account balance of payment. After that deposit interest rate have significant impact on GDP current account balance of payment as the t-stat is 1.951922 with the probability value 0.051400 having coefficient 0.021184. This variable also has positive and significant impact on GDP current account balance of payment as the if there is 0.021184 unit increase in deposit interest rate there will be 1 unit increase in GDP current account balance. After that consumer inflation rate and reserve related items have insignificant impact on GDP current account balance as the t-stats and probability is showing the insignificance level of these two variables. Overall, the model is fit as the probability value of F-stats are showing significance of the model. Last the main indicator that is R-square whose value is 0.6809 showing that this model have capability to explain 68.09% variation in dependent variable of proposed model.

Table (A)

Variable	Coefficient	t-Statistic	Prob
RRITEM	0.00597	0.116964	0.906900
INF	5.2713	1.310037	0.190600
DIR	0.021184	1.951922	0.051400
CAB*	4.7311	8.009559	0.000000
C	-4.014270	-31.748100	0.000000
R-squared	0.680917		
Adjusted R-squared	0.662508		
F-statistic	36.98895		
Prob (F-statistic)	0.000		

Result of my study is similar to book written by McCombie & Thirlwall (2016) in which he has stated that Current account of balance of payment effect country growth performance. When there is surplus current account balance it leads to more growth whereas a deficit account balance will lead to weak economy growth. Upper middle income economies are showing a positive effect of current account balance (BOP) on growth. "Commonwealth Bank Why do Interest Rates Change" Deposit interest rate effects growth either it slow down or speedup economy. My results also implies that deposit interest rate positively contribute to growth in upper middle economies. Jean-Claude Trichet (2004) Inflation and GDP are interrelated and inflation contributes to GDP if it is caused by investment and increase in wage rate level in an economy. My result shows that inflation has insignificant effect on GDP. Result of my study is similar to book written by McCombie & Thirlwall (2016) in which he has stated that Current account of balance of payment effect country growth performance. When there is surplus current account balance it leads to more growth whereas a deficit account balance will lead to weak economy growth.

Lower Middle Income Countries:

The below table showing the results of regression model results of lower middle income countries. The most significant variable is current account balance of payment having probability of less than 5% with t-stats value 23.36. This variable has positive impact on GDP current account balance of payment as the coefficient of respective variable showing. Like if there is 7.80 unit increase in current account balance there will be 1 unit increase in GDP current account balance of payment. After that consumer inflation has significant impact on GDP current account balance of payment as the t-stat is 4.1970 with the probability value 0.000000 having coefficient 0.01188. This variable also has positive and significant impact on GDP current account balance of payment as the if there is 0.0118 unit increase in deposit interest rate there will be 1 unit increase in GDP current account balance. After that deposit interest rate and reserve related items have insignificant impact on GDP current account balance as the t-stats and probability is showing the insignificance level of these two variables. Overall, the model is fit as the probability value of F-stats are showing significance of the model. Last the main indicator that is R-square whose value is 0.7774 showing that this model have capability to explain 77.74% variation in dependent variable of proposed model. The adjusted R-square indicates the explanatory power of the regression model that 76.43% variation in the dependent variable is explained by the variation in different number of predictors.

Table (B)

Variable	Coefficient	t-Statistic	Prob
RRITEM	-8.6212	-0.2848	0.775900
INF*	0.0118	4.1970	0.000000
DIR*	-0.1430	-5.6066	0.000000
CAB*	7.8010	23.3629	0.000000
C	-2.8630	-12.8896	0.000000
R-squared	0.7774		
Adjusted R-squared	0.7643		
F-statistic	59.1729		
Prob(F-statistic)	0.0000		

(* denotes the significance of the variable at 5% level of significance)

Low Income Countries:

The below table showing the results of regression model results of low income countries. The most significant variable is current account balance of payment having probability of less than 5% with t-stats value 14.9947. This variable has positive impact on GDP current account balance of payment as the coefficient of respective variable showing. Like if there is 6.7309 unit increase in current account balance there will be 1 unit increase in GDP current account balance of payment. After that consumer inflation rate and reserve related items and deposit interest rate have insignificant impact on GDP current account balance as the t-stats and probability is showing the insignificance level of these two variables. Overall, the model is fit as the probability value of F-stats are showing significance of the model. Last the main indicator that is R-square whose value is 0.7556 showing that this model have capability to explain 75.56% variation in dependent variable of proposed model. The adjusted R-square indicates the explanatory power of the regression model that 73.78% variation in the dependent variable is explained by the variation in different number of

predictors. Results of this study is also similar to the Zahid juma 2008 study where they have check the impact of the financial regulations in upper middle income countries, the also chosen the

Table (C)

Variable	Coefficient	t-Statistic	Prob
RRITEM	6.3111	0.1446	0.885200
INF	0.0228	1.1198	0.264000
DIR	-0.0140	-0.3826*	0.702400
CAB	6.7309*	14.9947*	0.000000
C	-4.4706	-10.4084*	0.000000
R-squared	0.7556		
Adjusted R-squared	0.7378		
F-statistic	42.5086		
Prob(F-statistic)	0.0000		

(* denotes the level of significance of the variable at 5% level of significance)

Results for upper middle economy is same as per study conducted by King & Levine's (1993) in which there were in total 80 countries that were selected. On the basis selected sample they have analyzed economy's growth being the dependent variable with deposit interest rate and other variables. They have found that there is a positive relation that exist in positively proportionate to economic growth of selected sample. In case of lower middle and lower economy the results doesn't come along since deposit interest rate has negative relation to growth. This difference in result is because of those structural changes in economies that are different in upper middle, lower middle and lower income economies. My paper result also comply with another study made by Odhiambo (2009). In his paper he has studied the relationship between interest rate reform and economic development. The studied focused on banking sector in South Africa and suggested that there is a casual relationship that exist between interest rate reforms economic development. As per our panel defined according to World Bank country classification this county comes under upper middle economies and our study shows significant coefficient with growth. This difference in result is because of those structural changes in economies that are different in upper middle, lower middle and lower income economies. Loría, and Fujii, (1997) examines panel of Mexican manufacturing unit from 1950 to1996. His study suggest that current account balance is significant coefficient that effects country's GDP. And result is similar to our results in case of upper middle economies.

Summary of finding, policy recommendations and conclusion

Table (D)

Nature of variable	Variable name	Upper middle income	Lower middle income	Low income
independent	Reserve related items	Insignificant impact	Insignificant impact	Insignificant impact
Independent	Deposit interest rate	Insignificant impact	Negative & significant impact	Insignificant impact
Independent	Inflation	Insignificant impact	positive & significant impact	Insignificant impact
Independent	Current account balance	Positive & significant impact	positive & significant impact	Positive & significant impact

Note: if the probability is less than 0.05 % then it is significant at 5% level of significance. If it is greater than 0.05 % then it is insignificant.

Starting from low income economies, current account balance shows a significant impact on GDP which means that this is the key factor contributing to GDP. Low income economies can

further enhance their current account balance by making policies and structural changes which will lead to more current account balance that will enhance country growth. In nutshell low income economies should focus more on this area.

Secondly for middle income economies it is suggested that the two factors which are positively contributing to GDP are inflation and current account balance that should be the focus area for these economies. A more friendly policies towards these two independent variables would lead to country growth in more efficient and effective way.

Thirdly upper middle economies, current account balance shows a significant impact on GDP which means that this is the key factor contributing to GDP in these economies. These economies can further enhance their current account balance by making policies and structural changes which will lead to more current account balance which will enhance country growth. Upper middle income economies should focus more on this area for maintained growth.

Recommendation

The motive behind writing this paper is to contribute to the discussion about the relationship between financial regulations and economic performance of a country. Based on our empirical analysis I have attempted to examine panel of three set of economies over the period 1995-2015, using regressions with independent variables. The results show that some regulation in each list of economies are significant and some variables effect of growth is not significant and this effect on growth is not obvious.

My findings have some implications for financial policies It suggests that reforms, and regulated changes can improve business environment which would ultimately help nations in upper middle, lower middle and low income economies nations to grow faster.

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