

# The interrelationship between economic growth and stock market economics essay

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The interrelationship between financial development and economic growth has been a subject of extensive study following the seminal work of Schumpeter (1911) in which he discussed the importance of financial sector development in promoting economic growth. His study pointed out that a well functioning financial system advances technological innovations by providing sufficient funds to the entrepreneurs that eventually turn to enhance economic growth. According to Paramati, and Gupta (2011) the scope of this relationship between financial sector development and economic growth has further been broadened by studies such as Debreu (1959), Arrow (1964) and Patrick (1966). It was empirically tested by Goldsmith (1969) in his work by using the cross country data, where he indicated the relationship between financial development and growth. The role of financial sector development under the 'demand following' and 'supply leading' approach was studied by Patrick (1966). In the 'supply leading' role, the causality occurs from financial development to economic growth and in case of 'demand following' role it is from economic growth to financial development. Goldsmith (1969) provides evidence that there is a positive connection between financial development and economic growth. On the contrary, Ram (1999) study did not find any relationship between financial development and economic growth in his analysis of cross country data. Empirical studies of Atje and Jovanovich (1993); Demirgüçüç Kunt and Levine (1996); Korajczyk (1996); Levine and Zervos (1996 & 1998) showed that there exists a strong positive relationship between stock market development and economic growth. Alam and Hasan (2003) find that the stock market development has a sizeable positive impact on economic

growth in the case of US. In a similar study by Agarwal (2001) investigated the relationship between stock market development and economic growth for nine African countries with cross sectioned data for the period of 1992 to 1997. His study documents a positive relationship between several indicators of the stock market performance and economic growth. Atje and Jovanovic (1993), Caporale et al. (2004), Adjasi and Biekpe (2006) also show that financial intermediaries usually have less information as compared to stock markets and these markets efficiently allocate the resources and enhance economic growth. Likewise, Filer et al. (1999) find that an active equity market plays an important role in promoting economic growth in developing countries. Dailami and Atkin (1990) find that a well developed stock market can enhance savings and provide investment capital at lower costs by offering financial instruments to savers to diversify their portfolios. In doing so, these markets efficiently allocate capital resources to productive investments, which would eventually promote economic growth. The causal nexus between stock market development and economic growth was examined by Vazakidis and Adamopoulos (2009) for France for the period of 1965 to 2007. This study employed co-integration, Granger causality test and Vector error correction model; results indicate that there is a positive association from economic growth to stock market development and at the same time interest rate has a negative effect on stock market development. Similarly Brasoveanu et al. (2008) have studied the correlation between capital market development and economic growth in Romania for the period 2000 to 2006. Results indicate that capital market development is positively correlated with economic growth by way of feed-back effect. However, the

strongest link is from economic growth to capital market, signifying that financial development follows economic growth. Likewise, El-Wassal (2005) study also supports demand following hypothesis in 40 emerging economies, where emerging stock markets development is determined by economic growth, financial liberalization policies and foreign portfolio investment.

Arestis et al. (2001) have investigated the relationship between stock market development and economic growth, controlling the effects of banking system and stock market volatility by utilizing time varying quarterly data from five developed economies (France, Germany, Japan, United Kingdom and United States) for the time span of 1968 to 1998. Results addresses that both stock markets and banks seems to play an important role in promotion of output growth in France, Germany and Japan but in case of United Kingdom and United States the link between financial development and growth found to be statistically weak. Study concluded that bank-based financial systems may able to promote long-term growth than capital market based ones.

Oskooe (2010) also systematically investigated the relationship between stock market performance and economic growth in Iran by using real GDP and stock price indices for the period of 1997 to 2008. Results of the study indicated that stock price movements are influenced by the level of real economic activity in the long-run and in the short-run stock market plays an important role as a leading economic indicator of future economic growth in Iran. Uyanga and Suruga (2008) investigated the nexus between financial sector development and economic growth for 112 countries for the period 1970-2003. Significant positive effect of financial development on economic growth at the 5% significant was established. This results hold for both lower

and middle income countries, as well as upper middle and high income countries. The study did not look at the issue of causality which is important for policy decision. According to Asuamah et al (1012), finance – growth relationship study without causality is not enough because of its implication and importance to policy decision making. Contrary, studies of Shleifer and Summers (1988); Morck et al., (1990a) showed that stock market development would lead to harm the economic growth by easing counterproductive corporate takeovers. In a similar fashion, Devereux and Smith (1994) study also specified that greater risk sharing through internationally integrated stock markets can minimize saving rates and that would decelerate the economic growth. Some other empirical studies (Bencivenga and Smith, 1991; Naceur and Ghazouani, 2007; Adjasi and Biekpe, 2006) who could not determine any significant relationship between stock market development and economic growth, particularly in developing countries. Likewise, Barro, (1989) study also found evidence that stock market development doesn't support as a leading indicator of economy.

## **Direction of Causality between Stock Market Development and Economic Growth**

The causal nexus between economic growth and financial has gained considerable research attention in terms of identifying the causal direction. However, the empirical evidence from the literature suggests that the direction of causality between stock market development and economic growth has been inconclusive. Bangake and Eggoh (2010) indicate that the direction of causality between financial development and economic growth is crucial because two opposite streams of research have held different points

of views: the supply-leading and following demand hypothesis (Patrick, 1966). The supply-leading hypothesis posits a causal relationships running from financial development to economic growth. The idea is that deliberate creation of financial institutions and markets increases the supply of financial services and thus leads to real economic growth. However, the demand-following hypothesis postulates a causal relationship from economic growth to financial development. Indeed, an increasing demand for financial services might induce an expansion in financial sector as the real economic growth. Although many empirical studies have investigated the causal relationship between financial development and economic growth, the results are still ambiguous. According to Bangake and Eggoh (2010) two kinds of studies are done: the first generation's studies which used time-series and the second generation's studies which relied on panel data causality. According to them, contributions by Demetriades and Hussein (1996), Luintel and Khan (1999), and Arestis and Demetriades (2001) are in line of first generation studies. These studies have employed the Granger non-causality and the Johansen co-integration tests between financial development and economic growth and report mixed results. This shows that a consensus on the role of financial development in the process of economic growth does not so far exist. According to Bangake and Eggoh (2010), recent researches on long-run relationship between finance and growth use panel causality and co-integration techniques and fall under the second generation studies; Examples of which include the works by Rousseau and Wachtel (2000), Filer et al. (2003) Christopoulos and Tsionas (2004), Hurlin and Venet (2004) and Apergis et al (2007). Rousseau and Wachtel (2000) and Filer et

al. (2003) provided an empirical evidence of causality from finance to growth. Empirical attempts by Christopoulos and Tsionas (2004) also support a unidirectional causality from financial depth to growth. Contrary to previous works however, Hurlin and Venet (2004) find that causal relationship is from growth to finance and is more occurring in developed than in developing countries. A similar approach is used by Apergis et al. (2007) who examined whether a long-run relationship between finance and growth exists, employing panel integration and co-integration tests. Their results support a bi-directional causality between financial deepening and growth, which remains robust to various specification of the sample. These studies further reiterate the inconclusiveness of the debate and discussions on the direction of causality between finance and economic growth.

Following the intensification of the debate on the direction of causality between financial development and economic growth in recent times, there have been significant developments in the study of stock market performance vis-à-vis economic growth in sub-Saharan African countries especially, in the just past two decades. Empirical debates have intensified on the role of stock market performance in promoting economic growth and the vice versa. Whereas one stream of research suggests that stock market development causes economic growth another believes it is rather the opposite that is the case. Contrary to these opposing views however, is the opinion held by some other group of researchers who have argued that this effect is marginal or in some extreme cases even negative. There are a number of studies that have tested the direction of causation between financial development and economic growth both at developed and

developing country levels. This section of the literature reviewed presents four opposing findings of the direction of causality between financial development in general and more specifically stock market performance and economic growth, i. e. finance-led growth causal link, growth-led finance causal link, bidirectional or feedback causal link and the independence or no causality link, which reiterates the inconclusive nature of the causal discourse of finance and economic growth leaving room for research to continue in the area. According to Calderon and Liu (2003), the direction of causality between finance and economic growth is very crucial because it has significant implications on development policies. In case of supply-leading scenario, policy-makers should focus on the liberalization of the financial sector; whereas in the case of demand-following situation, more effort should be emphasized on growth-enhancing policies.

### **Finance-led growth causal nexus**

The finance-led growth causal nexus (or what in economics parlance is referred to as the supply-leading causal hypothesis) is the finance and growth relationship in which the causal direction is from finance to economic growth. This implies a strictly unidirectional causal relationship where it is found out that financial development of which is the stock market causes economic growth and not the other way round. Implying that economies with strong and active financial systems like strong and well performing capital markets will experience economic growth all other things being equal. There are a number of researchers that hold this view based on their empirical studies of which the following are worth citing. The supply-leading hypothesis is also supported by more recent studies by Calderon and Liu

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(2003) on 109 developing and developed countries, and Christopoulos and Tsionas (2004) on 10 developing countries. Both studies conclude that the supply-leading hypothesis is the dominant force behind the relationship between finance and the sources of growth in particular financial depth contributes more to the causal relationship in developing countries.

Christopoulos and Tsionas (2004) used panel co-integration analysis to examine whether a long-run relationship between financial development and economic growth existed for 10 developing countries over the period 1970-2000. Their findings support a unique co-integrating vector between growth, financial development, investment share and inflation, and unidirectional causality from financial depth to growth. However, this study limited its attention to only a few developing countries and employed only one measure of financial deepening. Using panel co-integration analysis Cavenaile et al. (2011) investigated the long run relationship between financial development and economic growth for five developing countries (Malaysia, Mexico, Nigeria, Philippines and Thailand), for the period 1977- 2007. From their findings they concluded that there is significant long run relationship between economic growth and financial development. Causality run from financial development to economic growth though evidence was found for weak bidirectional causality. This study unlike some of the previous ones included variables from stock market and the banks to capture the total effect of financial development. This allows for broader discussion of the effect of financial development on economic growth. In Africa, the most recent studies postulating the supply-leading hypothesis include: Agbetsiafa (2003, 2004), Ghirmay (2004), Abu-Bader and Abu-Qarn (2008), Johannes et

al. (2011) Agbetsiafa (2003) found that each of the financial development indicators and economic growth are integrated at the first order. The co-integration test results show that financial development and economic growth are linked in the long run in seven of the eight countries in the sample. Causality tests indicate a predominance of unidirectional causality from finance to growth in six of the countries. Ghirmay (2004) provided evidence in support of finance-led growth in eight out of the thirteen sub-Saharan countries investigated when he examined the causal link between the level of financial development and economic growth in 13 sub-Saharan African countries. The results of the co-integration analysis provide evidence of the existence of a long-run relationship between financial development and economic growth in almost all (12 out of 13) of the countries. With respect to the direction of long-term causality, the results show that financial development plays a causal role on economic growth, again in eight of the countries. However, at the same time, evidence of bi-directional causal relationships is found in six countries. The findings imply that African countries can accelerate their economic growth by improving their financial systems. In the same way, Agbetsiafa (2004) found unidirectional causality running from financial development to economic growth in seven African countries lending credence to finance-led growth hypothesis. Abu-Bader and Abu Qarn (2008) equally provided evidence in support of finance-led growth in Egypt, Morocco and Tunisia. Johannes et al. (2011) established a unidirectional causality moving from financial development to economic growth for Cameroon. The study used Johansen co-integration to establish a positive relationship between financial development and economic growth in

the long run and short run for Cameroon for the period 1970 to 2005. This implies that as the financial sector develops the economy also grows and if the financial sector does not grow the economy's growth will also suffer. It is worth noting however that the unidirectional causality was found only in the long run but not in the short run.

### **Growth-led finance causal nexus**

The growth-led finance causal nexus (or what in economics phraseology is referred to as the demand-following causal hypothesis) is the finance and growth relationship in which the causal direction is from economic growth to finance. This also implies a strictly unidirectional causal relationship where it is presumed that economic growth leads to financial development of which is the stock market and not the other way round. Though finance-led growth hypothesis seem to dominate the literature on the finance- growth debate, there is nonetheless a substantial body of literature that also promotes the growth-led finance hypothesis. For instance, Ibrahim (1999) found that macroeconomic forces have systematic influences on the prices of stocks through their influences on expected future cash flows. The relationship between stock prices and macroeconomic variables therefore, has been predominantly investigated assuming that macroeconomic fluctuations are influential on stock prices through their effect on future cash flows and the rate at which they are discounted (Chen et al (1986), Fama (1981)). For instance, Singh (1997) suggested that stock markets do not in any way lead to long- run economic growth due to macroeconomic instability, volatility and arbitrariness of pricing process; and that instead the macroeconomic activities have an upper hand in the interaction between the two variables.

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According to him, the nature of the economy therefore plays a prominent role in determination of stock prices and a complex set of factors are seen to influence the movement of prices at the stock market. However, even if an economic report is negative, the outcome of the stock market and the financial markets in general may occasionally rise making the stock market perhaps one of the most dynamic components of the world market, alongside other components such as foreign exchange market. Charkavarty (2005) also noted that stock exchange prices are highly sensitive to some fundamental macroeconomic indicators. When the real sector expands, the demand for certain financial instruments increases, leading to the growth of these services and the end result is that the developments in macroeconomic activity influences the stock market performance. Notable example of such work is Nieuwerburgh, et al (2006), in which the authors studied the relationship in Belgium and established that growth in GDP caused stock market development. Although dynamic linkages exist between stock markets and macroeconomic variables, such linkages have been investigated extensively only for the developed markets by authors such as Lee (1992). This leaves the dynamic linkages in the emerging markets and the less developed countries much more ignored, with only a few exceptions. Reason cited by authors such as Bekaert and Harvey (1998) and Muradoglu et al (2001), for the lack of extensive literature for the developing economies includes the overwhelming influence of governments in economic activity, and that most of the stock markets are at their infancy stages therefore the volume of trade is low, and company-specific information is not always timely or of high quality. This therefore leaves the stock markets more prone

to influences from economic policy, but the relationship is assumed to be unidirectional from macroeconomic variables to stock returns. In their book "Financial Markets and Institutions", Howells and Keith (2000) argue that, equity prices just like the price of all assets will respond to changes in interest rates. That is to say, if the Central Bank raises the interest rates, for instance, the rate available on the risk-free assets goes up and if more can be earned on risk-free assets, then the holders of risky shares will want a higher return as well. The share prices will also fall if the equity market as a whole becomes more risk averse and demand a higher premium for any level of risk. Ehrmann and Fratzscher (2004) pointed out that, more research is needed to understand why individual stocks react so differently to some macroeconomic factors such as monetary policy shocks which are cited as being a driving force behind their reaction with market prices. In another study, Bernanke and Kuttner (2003) concluded that very little of the market's reaction can be attributed to the effect of monetary policy on the real rates of interest. Robinson (1952) argued that the financial system does not spur economic growth; and that, instead financial development simply responds to developments in the real sector. Thus, many influential economists give a very minor role, if any, to the role of financial system, particularly the stock market in economic growth.

### **Bidirectional (feedback) causal nexus**

The bidirectional causal nexus or what is referred to as the feedback effect is the finance and growth relationship in which the causal direction can be both from finance to economic growth and from economic growth to finance.

Demetriades and Hussein (1996) find a little evidence in supporting the

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hypothesis of finance-led growth, while growth-led finance hypothesis is confirmed in some cases. They however, conclude that the bi-directional causality relationship is found in majority of the countries investigated. Choong and Chan (2011) indicate that after formalizing both supply-leading (finance-led growth) and demand-following (growth-led finance) hypothesis, Patrick (1966) suggests another stage of development hypothesis, which links the feedback causality between financial development and growth. According to this framework, supply-leading financial development can stimulate domestic capital accumulation in the early stages of economic development. Innovation and development of new financial arrangements in the financial system opens up new opportunities for investors and households (especially surplus units). Resulting from new innovations in terms of technologies, financial instruments and asset-risk management skills, savers will increase their savings and investors can induce higher level of profitable investment or project at a low cost of borrowing. This inaugurates self-sustained economic growth until the supply-leading characteristics of financial development diminish gradually and then, the process will be dominated by demand-following financial development. Investigation of Demetrides and Hussein (1996) and Greenwood and Smith (1997) provide strong evidence to support this hypothesis. According to Choong and Chan (2011), investigations of Demetrides and Hussein (1996) and Greenwood and Smith (1997) provide strong evidence to support this hypothesis. Demetriades and Hussein (1996), for example, examined a variety of causality tests between financial development and economic growth for 16 developing countries and conclude that " considerable

evidence of bidirectionality and some evidence of reverse causation". As a consequence, they argue that accepting the generalization of finance leading growth is dangerous and is not helpful for countries in the developing world. Chakraborty and Ghosh (2011) also used panel data for five Asian countries (Thailand, Korea, Indonesia, Malaysia, and the Philippines) for the period 1989 to 2006 to examine the link and causality between financial development and economic growth. The results indicated that the series were integrated and are co-integrated. There is significant long run relationship between financial development and economic growth. Results from the granger causality test shows that financial development proxied by market capitalization Granger causes economic growth. Economic growth also Granger causes financial development. This indicates a bidirectional causality link between financial development and economic growth. The study concluded that economic growth helps the banking sector to grow. Bangake and Eggoh (2010) in reassessing long-run relationship between financial development and economic growth using panel integration and co-integration techniques for a dynamic heterogeneous panel of 71 countries both developed and developing over the period 1960 to 2004, find that financial development does cause growth and the reverse relationship is also true. According to them their results are in line with Apergis et al. (2007), Luintel and Khan (1999), Demetriades and Hussein (1996) which show that the causal relationship between financial development and growth is bi-directional. However, Bangake and Eggoh (2010) indicate that their results bring further evidence which shows that the magnitude of the causal relationship depends upon the income level, i. e. the causal relationship

running from finance to growth is dominant in low income countries than in middle and high income countries. Nonetheless, considering the causal relationship from growth to finance, the panel causality results provide clear evidence in favour of middle income countries. Akinlo and Egbetunde (2010) used VECM to establish co-integration relationship between financial development and economic growth in selected ten Sub-Saharan Africa countries from 1980 to 2005. Significant long run relationship between financial development and growth was established. The study revealed different direction of causality in the countries. Bidirectional causality was found in Chad, Saraland, Sierra Leone, South Africa, and Kenya. It was also found that economic growth granger causes financial development in Zambia while financial development also granger causes growth in Nigeria, Gabon, Central Africa Republic and Congo Republic. Colle (2010) identified co-integration and statistically significant long run relationship between financial development and economic growth, which shows that if financial sector develops the economy grows and if the economy grows the financial sector also develops in the long run. Bidirectional causality was found for some of the countries in the study but not for some other countries. This indicates that finance positively affect growth whereas growth also affect finance. Luintel and Khan (1999) provide the same findings in their study by focusing on 10 less developed countries. They concluded that there exists a bidirectional causality all countries under concerned and argued that a consensus on the role of financial development in the process of economic growth does not so far exist. Ahmed and Hasnu (2009) report the similar results for the case of Pakistan from 1974 to 2007.



## **Independent or no causality nexus**

Dabos and Gantman (2010) examined the link between financial developments and economic growth for the period 1996 to 2005 for 98 countries. The econometric method is dynamic panel's method. The regression results revealed that there is no statistical significant relationship between financial development and economic growth. Based on these findings the authors brought to the fore the evidence of independence or no causality relationship between finance and economic growth. They therefore conjecture that " the finance-growth link is not as firm as portrayed in the literature" The methodology of this paper is of interest for using panel analysis which solved the problem of omitted variable in the model specification. Their model also included control variables to avoid biasness. The control variables were institutional quality and the size of the economy. A study by Ghimire and Giorgioni (2009) for group of countries from 1970 to 2006 found that the series (private credit, bank credit, capitalization, value traded, capital formation, and education) were integrated. It was also revealed that private credits have significant negative effect on economic growth in addition to turnover. This means credit facilities to the private sector do not improve economic growth but rather worsen it. The study again established no strong positive relationship between private credit and economic growth in the long run, for various countries in the study. The conclusion from these findings is that the stock market does not promote economic growth. The study did not take into account the causality direction of the variable to discuss cause and effect. A study by Vuranok (2009) on Turkey for the period 1991 to 2008 found no significant long run relationship

between financial development and economic growth, though one Proxy for financial development which is the ratio of M2 to GDP and GDP were co-integrated at 5% level of significance. That is a development in the financial sector does not influence economic growth in the long run. There was also no significant causality among the variables under investigation. Financial sector development does not cause economic growth. Economic growth does not result from financial sector development. Hurlin and Venet (2008) investigated the causality between economic growth and financial development for 63 industrial and developing countries (1960 to 2000). There was homogenous non causality from financial development to economic growth at 5% significant level. Based on these findings the authors conclude that: "either there is no empirical evidence of a casual influence of financial depths on economic growth in the short run or that the causality from fiancé to the real side of the economy is too complex relationship to be identified by a bivariate Granger causality test" Chang (2002) provides neither the demand following nor the supply-leading hypothesis for Mainland China. In his study, he uses multivariate VAR models for Mainland China over the period 1987: Q1 to 1999: Q4 to test both the demand-following and supply-leading hypotheses. Based on Johansen co-integration test, the findings indicate that there exists one co-integrating vector among GDP, financial development and the degree of openness of three variables. The results from Granger causality tests based on multivariate error-correction models (ECM) however, suggests independence between financial development and economic growth.

## **The Inconclusiveness of Causality Direction between Financial Development and Economic Growth**

According to Choong and Chan (2011), the issue of causality direction between financial development and economic growth has been one crucial aspect of discussion among researchers. A number of theoretical and empirical studies have attempted to deepen the understanding of the different aspects of this relationship by exploring the existence of this relationship. According to them, there are a few explanations that have been pointed out to explain the inconclusive and mixed direction of causality.

Firstly, according to Al-Yousif (2002), most of the existing studies have emphasized on the correlation between financial development and economic growth. However, the high correlation between two variables does not necessarily demonstrate the presence of causality direction from one to another. What this seems to suggest is that some of the reported causality between financial development and economic growth could actually be a mere indication of the existence of a strong positive correlation between them and not necessarily a causal relationship. To buttress this view Gujarati and Porter (2009) indicate that although regression analysis deals with the dependence of one variable on other variables it does not necessarily imply causation. Put in another way, the existence of a relationship between variables does not prove causality or the direction of influence. The second explanation given for the disparities in the causality direction between financial development and economic growth is that some existing studies used cross-sectional data, which do not resolve the issue of causality King and Levine, (1993a; 1993b) Thirdly, Wang (1999) argues that the use of an augmented production function approach would produce misleading

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conclusions because a measure of financial development is added as another argument in the production function. Under this approach, it is assumed that economic growth is an endogenous (or dependent) variable so that the causality is running from financial development to economic growth.

Nevertheless, as discussed above, there is a possibility of growth-led finance relationship. Hence, this will lead to the problem of model misspecification.

In line with this argument, Rajan and Zingales (1998) find that financial development facilitates economic growth in a large sample of countries over the 1980s and that "this result is unlikely to be driven by omitted variables, outliers, or reverse causality". Fourthly, the use of different measures of financial development indicators contributes to this inconclusive and debatable causality direction. Al-Yousif (2002) reports that the results of some studies of causality direction between financial development and economic growth are country specific and therefore tend to vary with the kind of proxies used to measure financial development. This can be attributed to the fact that these countries differ in their level of financial development due to differences in policies and institutions. Fifthly, the causality direction remains unobvious resulting from the various applications of econometric techniques. In particular, the use of inappropriate techniques leads to serious econometric problems such as ignorance of unobserved country specific effects, joint endogeneity of the explanatory variables in lagged dependent variable models and potential parameter inconsistency arising from simultaneity bias (Levine et al., (2000); Beck et al., (2000); Al-Yousif, (2002); Calderon and Liu, (2003)). Besides, the segmentation of sample data also results in the ambiguous relationship between financial

development and economic growth. The longer the sampling interval, the greater the effect of financial development on economic growth. This suggests that the impact of financial deepening on the real sector takes time (Calderon and Liu, 2003). To sum up this controversial causality literature, Levine (1997) postulates that: "the preponderance of theoretical reasoning and empirical evidence suggests a positive, first order relationship between financial development and economic growth. The body of work would push even most sceptics toward the belief that the development of financial markets and institutions is a critical and inextricable part of the growth process and away from the view that the financial system is an inconsequential sideshow, responding passively to economic growth and industrialization". There are alternative views about the role stock markets play in economic growth. Some have argued in the literature that stock market development may hurt economic growth. The argument is that due to their liquidity, stock markets may hurt growth as saving rate may be reduced due to externalities in capital accumulation. Moreover, diffuse ownership may negatively affect corporate governance and invariably the performance of listed firms thereby impeding the growth of the stock markets (Bhide, 1993; Shleifer & Vishny, 1986; Stiglitz, 1985, 1994). In general however, the extent to which stock markets contributes to growth might be affected by such factors as the size, liquidity and efficiency of the market as well as the quality of the environment. The quality of the environment relates to the social and economic conditions of the countries involved. The effect of the stock markets would no doubt be constrained in countries with high political instability and perceived risks. Christopoulos, D.

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