Interrelationships among Growth, Confidence and Governance in the Globalized World-An experiment of some selected countries

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Abstract

The countries in the world in the globalized era have faced heterogeneity in challenges in managing their growth factors as well as the stakeholders of such growth profiles. The political and economic turmoil of the last two decades around the world have opened the eyes of the consumers, business houses and the governments of different countries to read and follow the economic events. The paper has tried to study the causal relation and interrelationships among different growth factors like the confidence levels of the consumers and business houses, inflation, unemployment like economic factors and governance like non-economic factors over a selection of 17 countries across all continents for the period 1996-2010. Because of limited sources of data we have applied the pooled regression technique to justify our study. Confidence levels of both the consumers and business houses cause the growth rates whereas governance causes growth only under pooled data. But for individual country data we observe that in majority of the countries there are absences of causalities between the variables. It has been observed that pooled annual growth rates of GDP of the countries are significantly related to the business and consumer confidence indexes, unemployment rate, debt ratio and overall governance indicators that shows improvement over the individual country analysis where in majority of the cases there is no significant factor for growth and confidence. By segregating the entire data the study find a few countries where a few variables like BCI, stock prices and governance make significant impact upon growth rates. In majority of the countries BCI is explained by CCI, Stock prices and governance while CCI is explained by stock prices, governance and debt ratio.

Key words: Growth, Confidence, Governance, Granger Causality, Pooled Regression

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1. Introduction

The lessons from the recent crisis in the so called developed economies and its aftermath effects upon the rest of the world have compelled the economists, policy makers and governments of different countries to redefine the concept of long run growth states of an economy. It is proposed in the macroeconomic literature by the growth theoreticians that an economy will reach the long run growth path at a steady state level of growth which is usually a lesser rate of...
growth compared to the short run growth rates since a sizeable growth rate of GDP is required at the early stages of developments. If it is felt to work good then the growth rates of developed economies like the USA, France, Germany, UK etc. should follow a lower quantitative growth figures. During a few decades back these economies have followed the average growth rates of around 2 to 3 per cent annually. And hence, these economies can be concluded to have attained the long run growth paths so far as the postulates of the growth theoreticians are concerned. The occurrences of the crises have opened the eyes of the economists, planners and governments of different countries. The factors that need to be incorporated as crucial elements in analyzing the developmental status of the world economies in the post globalization scenario are the management of good and proper governance as well as to maintain good confidence level of the active economic agents. Hence the task was to reorient the working of the interlinkages among three prime indicators of developments—Confidence, Governance and Growth. An economy, to have a stable growth path, should have interlinkages among all three indicators to work in a bidirectional way. That means as the economy grows in quantitative terms the confidence of the economic agents, particularly of the consumers and the business houses, tends to rise. At the same time, if the consumers and business houses have better confidence upon the economy then the growth rate of the overall output will tend to rise. Similarly, if the quality of the governance, governance being the normative in nature, improves the growth rate of the overall economy will tend to rise and in the reverse way high growth rate of the economy demands active governance by the ruling government of the country. Likewise, as the quality of governance improves the confidence of the economic agents rise and as the level of confidence rises the government should manage to follow active governance.

By Confidence it is meant how the economic agents perceive the future economic events at least up to six months. Mainly of two economic agents’ (consumer and business houses) levels of confidences are taken into consideration in the study. There are several economic and non economic factors to determine the level of confidence of consumers and business houses. The economic factors that usually determine the consumer and business confidence levels are mainly the overall growth rate of output (GDP), rate of unemployment, inflation and interest rates, movements of stock indices and the government’s debt to GDP ratio. The non economic factor, among others, that strongly influences the confidence levels of consumers and businessmen are the governance indicators that are namely the Voice and Accountability (VA), Political Stability and Absence of Violence in the territory (PSAV), Government’s Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL) and Control of Corruption (CC).

The working of the interlinkages among all three indicators, confidence, governance and growth, is required by established as well emerging economies in the globalized world in order to achieve long run objectives. To quote Kofi Annan, former secretary general of UN, ‘good governance is perhaps the single most important factor in eradicating poverty and promoting development’. An economy may not require effective governance in its early stages of developments because of the closed structure as well the small areas of economic activities. The importance of governance is felt relevant in the early 1990’s after the boosting efforts of making all the countries beneath the cover of single umbrella—the global village. The opening up of the doors of most of the countries made possible of flowing resources from one country to another which means one country’s consumers and business houses tend to perceive not only the economic conditions of their own nations but also that of the other nations. Managing good governance was, therefore, a challenge to all the heads of the nations so as to sustain in the competitive world.

Over the last decade the world economies faced two major crises. The first one originated by the fall of Lehman Brothers in the USA in September 2008 that led the country and its associated trading partners into a financial crisis and after that as one of its aftermath effects and with a common currency problem under the low interest rate regimes, the Euro zone crisis originated through the fall of the countries of the southern Europe, namely Greece, Spain, Portugal, Italy and Ireland. The values of CCI and BCI of all the countries took a common dip in the year 2009. The confidence indicators of USA and the countries of European Union are relatively weak compared to the emerging nations of the south block. The BCI and CCI for UK and the countries of northern Europe are negative implying the future political turmoil to appear. Even the developed and risk free Germany have experienced anti
government decisions in the recent polls of different states where the ruling centre-right coalition government headed by the present Chancellor Angela Merkel were in power. Most of the governance indicators also took the downward trend in this particular year. The impact of such crises travelled throughout the world like an epidemic via trade and service channels. The shares of exports, imports and total trade volumes of USA, France, UK, Germany, Greece, Japan, South Africa, Brazil, etc in world trade have fallen during the phase of 2009-10. There was a remarkable decline in the world trade share of the European Union from 40 per cent in 2008 to 36 per cent in 2010. The same story also is heard for annual growth rates of these countries. There are negative growth rates for USA, UK, France, Germany, Japan, etc for the period 2009-10 but the magnitudes of negative growth rates of Greece aggravates till date. Greece is one of the worst sufferers of the twin crises.

But the calamities could not manage to affect the Asian Giants like China, India; rather they played the role of shock absorber of these crises. China, being front runner in the world trade, has improved, though slightly, in its trade share. India, although possessing a small share in world trade, made itself better off after the crises. The service channels have improved for China and India since there were increasing trends in the remittances of the non-residents of the countries as well as their deposits to the home avenues. The foreign institutional investors (FIIs) moved to India and China as the economies are safe to invest. Hence, the overall outcome is the rising confidence level of the agents of India and China and the agents of foreign nations upon the economies of Asia, particularly upon India and China. At the same time these two economies maintained a sound average growth rate of overall economy amid the crises. Most of the economic factors in determining the confidence levels of consumers and business houses in India and China have worked in favour of the countries and the net result is that the average CCI for India is 135 and for China it is 130 for the period January 2003 to January 2012. On the other hand from the investment perspectives the average BCI for China is 107 whereas it is 67 for India. These facts show the acceptability of India and China by the world consumers and producers. The political debacle of most of the European nations (where the judgments of the people went in favour of socialistic structure) has led the heads of the nations to concentrate in building confidence of the citizens. The newly elected socialist French President Francois Hollande, in his first meeting to his colleagues, put importance of how to rebuild confidence of the people who are the entities of outside the government as well as within the periphery of the government. Like the newly elected Greece President addressed to the people in favour of staying in the European Union and to move for all out reforms. After these comments the stock indices of these countries as well as world’s leading stock indices took an upward turn. This helps us to know how ‘Confidence’ becomes an important indicator in understanding development of a nation.

2. Literature Review

The essence of some of the useful literatures cannot be denied so far as our study is concerned. The study by Hussain (2000) tries to examine South Asia’s poverty and locates its roots in the structure of the economy and of governance in South Asia. The paper tried to indicate that not only is the incidence of absolute poverty higher than in any other region of the world but that the number of people deprived of basic services such as safe drinking water, health and sanitation is even greater than those in poverty. At the same time, the analysis proposes that the nature of governance currently being practiced in South Asia precludes certain resource allocation and economic policy initiatives that are necessary for economic stability, growth and poverty alleviation. The study proposed two initiatives for poverty alleviation. One is Institution building for Participatory Development at the grass roots level, and another is the policies for restructuring economic growth at the macroeconomic level so as to both accelerate economic growth and make it a more potent instrument of poverty reduction. The study of Kaufmann et al (2002) tried to show the interrelationship between growth and governance for 175 countries. They find a positive causal link from governance to growth but find a negative causal link from growth of per capita income to growth. In their effort Mourougane and Roma (2002) tried to investigate the usefulness of European Commission’s confidence in forecasting the real GDP growth in the short run for the countries including Belgium, France, Spain, Netherlands, Germany and Italy. They observed significant signs of forecasting by a linear regression of real GDP of these countries upon their confidence indicators. The results for Spain seemed not satisfactory. Bank of Thailand (2004)
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tried to prepare a report on the relation between the confidence indicators and consumption and investment activities of the Thai people. The report says that growth rates of real private consumption and real private investment seem to move in tandem with consumer confidence and business sentiment indices, respectively. Precisely it has shown that the Overall Consumer Confidence Index appears to be a coincident indicator of real private consumption. In contrast, it shows that Business Sentiment Indices appear to be leading indicators of real private investment. Resnick and Bimer (2006) tried to develop a conceptual framework that specified the linkages between different aspects of governance and pro-poor growth. The paper tried to review a range of quantitative cross-country studies that include measures of governance as independent variables and focuses on the dependent variable in at least two of the three notions of pro-poor growth: poverty, inequality, and growth. The study showed that governance indicators that capture a sound decision-making environment for investment and policy implementation, such as political stability and rule of law, were associated with growth but provide mixed results in regard to poverty reduction. In his pioneering work Keefer (2007) highlighted the important lesson from the fast growing countries like China and India that even with poor degrees of governance these two countries have maintained a sizeable growth rates in their territories. His observation from the 1980s to the present have shown that international risk rating firms report that investors have confronted frequently arbitrary government decision making and insecure contractual and property rights. Poor countries might infer from these experiences that countries can fall considerably short of achieving good governance and still grow rapidly. The reason of such high growth rates, as he pointed out, that China and India were able to leverage policy reforms into sustained, fast growth because of their large markets and abundance of low cost labor. In another theoretical work Aidt et al (2008) tried to show how political accountability work as a determinant of corruption and economic growth. In a system of considering governance as endogenous variable the study observed that the relation between growth and corruption is regime specific and in the system with good political institutions they found governance having negative impact on growth while with low quality political system corruption has no impact on growth because corruption may improve efficiency by allowing individuals to circumvent the worst institutional deficiencies. In another study Kaufmann (2008) on African countries tried to make link between governance and development. The observation was that for majority of the African countries, there was a strong positive effect of income on governance and at the same time there was causation from governance to growth in most of the countries. The work of Iqbal and Shah (2008) conceptualized the widely used governance indicators and they tried to in depth review of the widely used Worldwide Governance Indicators. They concluded that the governance indicators just were based on aggregation but omitted citizens’ evaluation of governance outcomes. The study tried to fill this gap up. Kaufman et al (2009) originally prepared the worldwide governance indicators by survey methods through different agencies that bear minimum margins of errors. In another working paper Khan (2009) tried to establish that reduction of poverty was a function of growth, distribution of income and governance. Based on the available data the study pointed out that poverty reduction can be made through proper income and wealth distribution where governance did not matter much. Based upon the data available for Turkey Celic et al (2010) examined the relationship between consumer confidence and financial markets for an emerging economy, Turkey. They modeled consumer sentiment as a function of high frequency financial market variables such as interest rates, exchange rates and the stock exchange index. They found and established that in emerging economies there might be existence of cointegration between consumer confidence and the financial market variables of interest. Hence, in emerging markets consumer confidence should be viewed as an endogenous variable.

So far as the above set of literatures are concerned the present study feels that there is lacking of studies like the association among the growth, confidence and governance in world countries. Hence, the present paper tries to frame the following objectives.

3. Research and Methodology

3.1 Objectives of the Study
The present paper seeks to examine the following hypotheses:

I: Is there any direction of causality among Growth, BCI, CCI and Overall Governance

II: Which are the significant variables determining Growth, Confidence and Governance for individual countries over time

III: Which are the significant variables for a Pooled Data Series

3.2 Data Source and Methodology

Different agencies of different countries and organizations are continuously putting their efforts to estimate the levels of consumer confidence index (CCI) and business confidence index (BCI) for different countries in the world through the survey method. Consumer confidence index tries to estimate the degree of optimism that consumers feel about the overall state of the economy and their personal financial situation. It can capture the magnitude of how confident people feel about stability of their incomes determines their spending activity and therefore serves as one of the key indicators for the overall shape of the economy. If consumer confidence level is higher, consumers are making more purchases, boosting the economic expansion and the magnitude of CCI rises. On the other hand, if confidence is lower, consumers tend to save more than they spend, prompting the contraction of the economy and hence, CCI is lower. A diminishing trend of consumer confidence in time to time suggests that in the current state of the economy most consumers have a negative outlook on their ability to find and retain good jobs. On the other hand, business confidence index tries to estimate the degree of optimism on the state of the economy that business owners are expressing through their activities of investing and spending. Decreasing business confidence often implies slowing economic growth because business owners are likely to decrease their investment. The idea is that the more confident business owners and managers feel about the economy, their companies, their jobs and incomes, the more likely they are to make investments and purchases that can lead to economic progress and hence, the BCI will take higher values.

To carry out the entire study we have used the data of one of such agencies (www.tradingeconomics.com). The index value of less than 50 points up to negative values stands for the pessimistic view of the consumers and business houses regarding the future economic conditions of the country. An index value of over 50 points represents the optimistic view of the agents regarding the future state of the economy; a score of over 100 points is a good symptom of the economy as well as its citizens, although there are margins of errors in computing the results because the way of perceptions of different agents as well as of the agents across the same group may vary. World Bank compiles the data supplied by different survey agencies all over the world for publication of the results of government indicators for a club of 196 countries varying in different geographical locations. The average range of values of estimates in all six indicators is -2.5 to 2.5. A country with a value close to -2.5 in any of the indicators implies the working of bad governance and a value close to 2.5 means very good governance. We have interpolated some missing data with respect to the averages of nearest figures to maintain continuity of the series of data in all aspects, wherever felt necessary.

We have a set of seventeen countries from all continents covering the developed North America and European countries and emerging countries of Asia, Africa and Latin America. The countries are USA, UK, France, Germany, Greece, Spain, Poland, Japan, South Korea, China, India, Thailand, Turkey, Australia, South Africa, Brazil and Argentina. The time series data of all economic factors and indicators run from 1996 to 2010. There is one major break of the data series for the period 2008 to 2009 that resulted out of the financial crisis in USA and it spread like flame to the European countries.

To complete the study we have applied basic statistical measures like mean, standard deviation and correlation coefficients. The simple linear regression technique has been applied for the country specific relation between growth and all the economic and non-economic factors. To find the result of regression in all the selected countries combining both the time series and cross section behavior we have applied the pooled regression technique.
short run variability of growth, confidence and governance from their long run values have been analyzed by means of Granger causality testing through the Eviews software.

4. Application of the Study

Let us first start with some basic nature of the series of data of the selected seventeen countries for the period 1996-2010. We are presenting the trend of the series of Average Annual Growth Rate of GDP, Business Confidence Index (BCI), Consumer Confidence Index (CCI) and Overall Governance Indicators because of the intention to find the associations among them. Figure 1, 2, 3 and 4 present the trends of all four endogenous variables respectively that can perform as both dependent and independent ways. From Figure 1 we have the view that China and India like emerging countries stay at the upper slot and Japan, USA, France like developed countries in the lower order. All the countries faced a dip in their growth rates in the year 2009 that signify the impact of financial and euro crisis upon the economies. Figure 2 presents the trend of BCI where we observe an upward trend up to the year 2008 and after that all of them face a downward trend. India and China stand in the upper grade but Poland, Japan, and UK like developed countries lie at the bottom level. We observe falling trends of CCI for almost all countries except South Korea, Poland and Argentina where rising trends are observed. China, Turkey and USA stay at the upper stairs and UK and Greece at the lower position. Greece position of CCI is all time low.

![Figure 1. Annual Average Growth Rates of GDP of Countries](image-url)
Figure 2. Business Confidence Index of Countries over time

Figure 3. Consumer Confidence Index of Countries over time
The six indicators by which the governance of a country is measured are the PSAV, VA, GE, RQ, RL and CC. We have tried to capture all the indicators by a single indicator which we call *Overall Governance* that is a simple average of all indicators.

In Figure 4 we have presented the trend of overall governance indicators of all the countries. Except Japan, France and S Korea all the countries follow a downward trend in the overall governance level. Australia, UK, Germany and USA are at the top position but China, India and Argentina are at the bottom level, although they have good experience in growth rates. The level of overall governance levels for almost all the countries take a dip in the year 2009 that can be attributable to the financial and Euro crisis.

### 4.1 Granger Causality Test

To go for testing causality between any two variable X and Y for any time period t with lag t-j and for country i we follow Granger (1969) technique for this purpose. Granger test of causality is a short run concept that involves estimating the following regressions:

\[
Y_t = \sum_{i=1}^{n} \alpha_i X_{t-i} + \sum_{j=1}^{n} \beta_j Y_{t-j} + u_{1t} \tag{1}
\]

\[
X_t = \sum_{i=1}^{n} \lambda_i X_{t-i} + \sum_{j=1}^{n} \delta_j Y_{t-j} + u_{2t} \tag{2}
\]

where \(Y_t\) = time series values of the variable Y at period t

\(Y_{t-j}\) = time series values of the variable Y at period t-\(j\)

\(X_t\) = time series values of the variable X at period t

\(X_{t-i}\) = time series values of the variable X at period t-\(i\)
\(u_{1t}, u_{2t}\) are normally distributed error terms that are serially independent

\( \alpha_i = \text{responsiveness of } Y_t \text{ w.r.t. } X_t \text{ for } i^{th} \text{ country} \)

\( \delta_j = \dots \dots \dots X_t \text{ w.r.t. } Y_t \text{ for the } i^{th} \text{ country} \)

\(X\) variable causes \(Y\) if \(\Sigma \alpha_i = 0\) is rejected or \(\Sigma \alpha_i \neq 0\) is accepted in equation (1) and \(\Sigma \delta_j = 0\) is rejected by equation (2). On the other hand, \(Y\) causes \(X\) when the null hypothesis of \(\Sigma \alpha_i = 0\) in equation (1) is accepted and \(\Sigma \delta_j = 0\) in equation (2) is rejected. There will be bidirectional or feedback causality between \(X\) and \(Y\) if the null hypotheses of \(\Sigma \alpha_i \neq 0\) is accepted in equation (1) and \(\Sigma \delta_j \neq 0\) is accepted in equation (2).

We have four variables viz Growth, BCI, CCI and Governance for which we are interested to test the causality between each of the pairs. First we do such causality test for a pooled data of all 17 countries at different lags which are not more than three because of the loss of valuable information from the data set through the omissions. We have 17x15 i.e 255 pooled data for all four variables. The result of pooled causality test in a formal way has been presented in Table 1.

Table 1: Granger Causality results in a pooled data

| Hypotheses         | Lag | F     | P   | Remarks |
|--------------------|-----|-------|-----|---------|
| Grth don’t BCI     | ≥ 3 | 1.49  | 0.21| No      |
| BCI don’t Grth     | ≥ 3 | 2.21  | 0.08| →       |
| Grth don’t CCI     | ≥ 2 | 1.99  | 0.13| No      |
| CCI don’t Grth     | ≥ 2 | 3.32  | 0.03| →       |
| Grth don’t Govern  | 1   | 11.97 | 0.0006| → |
| Govern don’t Grth  | 1   | 0.03  | 0.86| No      |
| BCI don’t CCI      | 1   | 0.347 | 0.55| No      |
| CCI don’t BCI      | 1   | 0.016 | 0.89| No      |
| Govern don’t BCI   | 1   | 1.314 | 0.25| No      |
| BCI don’t Govern   | 1   | 0.276 | 0.59| No      |
| Govern don’t CCI   | 1   | 0.55  | 0.45| No      |
| CCI don’t Govern   | 1   | 0.66  | 0.41| No      |

It is observed from the table that Growth do not cause both BCI and CCI respectively at any lags equal and greater than 3 and 2 but the reverse that is BCI and CCI do cause to Growth. That means high confidence levels of both the business houses and consumers influence the sound economic growth in the overall data. On the other hand Growth causes Governance but not Governance influences Growth that does not support the observation of Kaufmann et al (op cit). That means good governance cannot be a precondition of growth of the economies in the globalized era. A healthy growth of a country may lead to provision of good governance by any political regimes. This does not also match the observation of Kreefer (op cit) for China and India where there are high growths with very poor quality of governance.

There are no way causalities between business and consumers confidences and governance and confidences of business houses and consumers. Rise in perception levels of consumers in the all country levels regarding the state of the economy does not lead to rise in the business perception levels and vice-versa. Again rise in quality of governance does not lead to better perception of the consumers and business houses regarding the activities of the political institutions and social lives as par our study.
We have tried to run the causality test only at lag 1 for all the individual countries to compare the results across the countries. Table 2 and Table 3 together present the results. We observe unidirectional causalities from Growth to BCI for eight countries in the group which are namely, UK, Greece, Spain, S. Korea, Brazil, Poland, Turkey and but BCI is causing Growth South Africa only. There are bidirectional causalities between growth and CCI for Germany, Spain and Thailand whereas there are unidirectional causalities from growth to CCI for S. Korea only but CCI causes growth for UK, France, Greece, Spain and Brazil. Growth causes governance indicators as a whole for Turkey only and governance causes growth for China, Australia and Spain. For China the mostly effective governance indicator is Governments’ Effectiveness that did the trick for huge growth rates over a long span of time. There is bidirectional causality between growth and governance for UK and South Africa.

**Table 2: Granger Causality results in country wise data**

| Hypotheses    | U S A | U S K | U K | FRA | F RA | GE R | GE I | CH I | C I | NY D | IA | IA P | J A | J A P | TH A | T H A | S A | SA |
|---------------|------|-------|-----|-----|------|------|------|------|-----|------|----|------|----|------|------|------|----|----|
| Value of F and (P) | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P |
| Grth BCI | .21 | N | 3.3 | .12 | N | .08 | N | .41 | N | .42 | N | .58 | N | 1.7 | N | 1.07 | N | N |
| (dnt) | (.65) | (.09) | (.72) | (.7) | (.5) | (.5) | (.4) | (.2) | (.3) | |
| BCI Grth | .02 | N | .9 | N | .00 | N | .54 | N | .19 | N | .53 | N | .69 | N | 1.35 | N | 3.8 |
| (dnt) | (.87) | (.36) | (.93) | (.4) | (.6) | (.4) | (.4) | (.3) | (.07) | |
| Grth CCI | .91 | N | 1.7 | N | .29 | N | .4 | N | .98 | N | 1.2 | N | 1.2 | N | 3.5 | N | .79 | N | N |
| (dnt) | (.36) | (.24) | (.59) | (.06) | (.3) | (.3) | (.3) | (.08) | (.4) | |
| CCI Grth | .02 | N | 6.16 | .37 | N | .0 | N | .37 | N | .21 | N | .09 | N | .4 | N | 3.3 | N | .36 | N |
| (dnt) | (.87) | (.02) | (.07) | (.07) | (.2) | (.7) | (.2) | (.09) | (.5) | |
| Grth Gov | .15 | N | 2.5 | .35 | N | .00 | N | .26 | N | 1.2 | N | .35 | N | 2.6 | N | 9.2 |
| (dnt) | (.7) | (.07) | (.26) | (.92) | (.6) | (.3) | (.3) | (.13) | (.01) | |
| Govt Grth | .47 | N | 3.73 | .06 | N | 1.5 | N | 7.3 | N | 51 | N | .04 | N | .08 | N | 40 |
| (dnt) | (.5) | (.08) | (.79) | (.24) | (.6) | (.3) | (.3) | (.13) | (.00) | |
| BCI CCI | .07 | N | .91 | N | .28 | N | 9.4 | N | 1.09 | N | 6.6 | N | 1.2 | N | .32 | N | 3.3 |
| (dnt) | (.78) | (.36) | (.6) | (.01) | (.3) | (.3) | (.3) | (.09) | |
| CCI BCI | 1.01 | N | .05 | N | .92 | N | 1.7 | N | 2.05 | N | 1.5 | N | 3.6 | N | 1.6 | N | 7.3 |
| (dnt) | (.33) | (.21) | (.35) | (.21) | (.2) | (.2) | (.08) | (.7) | (.02) | |
| Govt BCI | .19 | N | .34 | N | .28 | N | .00 | N | 6.6 | N | .79 | N | 3.6 | N | .14 | N | 5.9 |
| (dnt) | (.66) | (.62) | (.6) | (.9) | (.02) | (.4) | (.08) | (.7) | (.03) | |
| BCI Gov | .31 | N | .13 | N | .15 | N | .1 | N | .95 | N | .07 | N | 1.15 | N | .31 | N | 3.7 |
| (dnt) | (.58) | (.72) | (.7) | (.7) | (.3) | (.7) | (.3) | (.5) | (.08) | |
| Govt CCI | .38 | N | .29 | N | .59 | N | .00 | N | .49 | N | .46 | N | 1.74 | N | .26 | N | .89 |
| (dnt) | (.54) | (.11) | (.45) | (.9) | (.5) | (.5) | (.2) | (.6) | (.4) | |
| CCI Gov | .16 | N | .02 | N | .59 | N | .18 | N | 1.7 | N | 7.5 | N | 1.96 | N | 5.7 | N | 15 |
| (dnt) | (.68) | (.86) | (.76) | (.6) | (.2) | (.3) | (.2) | (.03) | (.00) | |

Note: All causality tests are done at lag 1 for each country. N stands for no causality, → and ↔ directions stand for unidirectional and bidirectional causally respectively.

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The interplay between the sentiments of consumers and business houses is also of immense importance for a market economy to function in an effective way. We observe that BCI causes CCI for Germany and India but CCI causes BCI for Japan and Spain only. Both way interplay between them works for South Africa, Greece and S. Korea. The interlinkage between power of governing a country and business and consumers sentiments are pointed out in the similar tables. Governance leads to BCI change for two neighboring countries China and Japan but the reverse causality works for Poland only. That means for the government tries to adjust itself from the requirements of the business houses. However, there are bidirectional causalities between governance and BCI for Greece and South Africa. On the other hand, governance does not have any influence upon the consumers’ sentiments of any country except S. Korea where we observe feedback causality between the two. But CCI influences governments to rule properly for India, Thailand and South Africa, leaving a lot of countries in the sample in this regard.

**Table 3:** Granger Causality results in country wise data

| Hypotheses | BR A | B R A | GR E | G R E | AU S | A U S | SP A | S P A | KO R | K O R | T U R | T U R | PO L | P O L | AR G | A R G |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Value of F and (P) | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P | F P |
| Grth dnt BCI | 6.2 → 3.9 → 2.9 N .31 → .03 → .33 → .38 → .00 → . |
| BCI dnt Grth | .8 N .06 N 2.3 N .00 N .01 N .95 N .73 N .11 N |
| Grth dnt CCI | 1.1 N .01 N .00 N 5.5 ↔ 10 → 1.4 N 2.6 N .33 N |
| CCI dnt Grth | 3.5 → 3.6 → 1 N 26 ↔ 0.0 N 0.0 N 1.9 N .95 N |
| Grth dnt Govr | .15 N .43 N .06 N .02 N .05 N 1.6 N .13 N |
| Govr dnt Grth | 1.3 N 2.8 N 6 → 3.3 → .00 N 1.6 N .04 N .00 N |
| BCI dnt CCI | 1.9 N 4.8 ↔ .00 N 2.1 N 4.9 ↔ 2.1 N 3.0 N .00 N |
| CCI dnt BCI | .41 N 4.6 ↔ .25 N 3.7 → .63 ↔ .25 N .81 N .00 N |
| Govr dnt BCI | .03 N 8.6 ↔ .7 N 1.8 N .05 N .03 N 2.2 N .00 N |
| BCI dnt Govr | 1.7 N 3.4 ↔ .35 N .37 N .25 N .16 N 3.6 → .22 N |
| Govr dnt CCI | 1.3 N 2.3 N 1.3 N 1.5 N 3.7 ↔ 1.9 N 1.4 N .08 N |
| CCI dnt Govr | .00 N 2.8 N 1.3 N .11 N 5.6 ↔ 1.3 N 2.1 N .03 N |
Note: All causality tests are done at lag 1 for each country. 'N' stands for no causality, \( \rightarrow \) and \( \leftrightarrow \) directions stand for unidirectional and bidirectional causality respectively.

Therefore, in testing causality among all four endogenous variables in a paired form, we conclude that in majority of the countries there are absences of causalities between the variables. USA is the single country where we do not find any causal relation among the variables. Most cases of causality are found for South Africa and the least cases are for USA followed by Argentina and Australia. After pooling the data we find that both BCI and CCI are causing growth to change while governance is causing to growth. Hence, there are some evidences of interrelationships among Growth, Confidence and Governance in an era of economy where most of the countries in the world are interlinked by the process of globalization.

4.2. Factors affecting Growth and Confidence for Countries

There are several economic and non-economic factors explaining growth and confidence in an economy in the globalized era. The economic factors considered here with available continuous data are Inflation Rate, Unemployment Rate, Rate of Interest, movements of Stock Indices and Government Debt to GDP Ratio along with both BCI and CCI. The non-economic factor which needs more importance is the Governance Indicators. Here we use the average of all governance indicators and name it as Overall Governance. We have excluded so many explanatory variables for the ground of non availability of data in the same source for running regression analysis that can lead to low value of \( R^2 \) but the variables considered for our study are very much expected to determine growth trend and confidence levels of the consumers and business houses.

We first try to determine the significant variables in explaining growth and confidence for individual country levels by regressing first Growth upon BCI, CCI, Inflation, Unemployment, Interest, Stock values, Government Debt to GDP Ratio and Overall Governance. After that we do regression of BCI upon the rest of the variables and at last we regress CCI upon all the variables excluding Growth and BCI from the list. Since each country has the observation of 15 years (1996-2010) and number of explanatory variables is 8 and hence the degree of freedom of such regression is 7 that is very poor in power which will lead to non significance of most of the variables. We have three regression equations for each of the dependent variables Growth, BCI and CCI that are as follows:

\[
\text{Growth} = a + b_1 \text{BCI} + b_2 \text{CCI} + b_3 \text{Infl} + b_4 \text{Unempl} + b_5 \text{Interst} + b_6 \text{Stock} + b_7 \text{Debt R} + b_8 \text{Overall Govern} + u \quad (3)
\]

\[
\text{BCI} = a + b_1 \text{CCI} + b_2 \text{Infl} + b_3 \text{Unempl} + b_4 \text{Interst} + b_5 \text{Stock} + b_6 \text{Debt R} + b_7 \text{Overall Govern} + u \quad (4)
\]

\[
\text{CCI} = a + b_1 \text{Infl} + b_2 \text{Unempl} + b_3 \text{Interst} + b_4 \text{Stock} + b_5 \text{Debt R} + b_6 \text{Overall Govern} + u \quad (5)
\]

Since the data on all the variables are for a length of 15 years so the chance of having unit root problem of the data series and hence, no test of stationarity has been carried out. We have separately done the regression analysis for all the variables as depicted in equation (3), (4) and (5). The estimated coefficients and the probability values are presented in Table 4.
We observe from the analysis of country wise data that there is no significant growth determining factors for 10 countries out of 17. Most of the countries in the set of 10 are emerging in nature like that of China, India, Thailand, Brazil, etc. BCI becomes a significant variable for Germany, Japan and Spain which are traditionally known to be advanced countries. Interest rate, Inflation and Governance are the significant factors for France and Greece. This leads to the result that the correlation coefficient between growth rates of France and Greece is 0.59 which is significant. Unemployment as the common factor of explaining growth works for USA and Argentina with usual signs.

In most of the countries CCI becomes significant determining factor for BCI that is supported by Table 5. Movement of stock indices in seven countries, namely, France, Germany, China, India, Thailand, Turkey and Argentina, play significant role in determining business sentiments for investment and supply decisions. Five out of seven are the emerging countries where the business houses take decision with respect to the interlinked stock price movements in the world. Governance plays the role of business decisions in the countries of Thailand, Greece, South Africa and Poland. No factor explains BCI for Brazil and Australia.

Table 4: Estimated Intercepts and Coefficients of Regression of Growth on several Variables

| Country | Intercept | BCI | CCI | Infla | Unemp | Interest | Stock | DebrR | Govern | R² |
|---------|-----------|-----|-----|-------|-------|----------|-------|-------|--------|----|
| USA     | -7.1      | .11 | .03 | .36   | -1.78 | -66      | -000  | .10   | -2.2   | .94|
| UK      | -6.8      | .07 | -1  | .18   | .01   | -4        | .00   | -.10  | 7.14   | .87|
| France  | 63.3      | .13 | .03 | 2.04  | .24   | -.75      | -00   | 0.019 | -60.21 | .88|
| Germany | -15.1     | .13 | -.004 | -.36 | .50   | .17       | .00   | -.08  | 1.08   | .91|
| China   | -14.4     | .06 | .11 | .07   | 1.2   | .05       | .00   | -.10  | -1.7   | .89|
| India   | -20.2     | .01 | -.00 | .08   | .12   | -.39      | .00   | .28   | 4.5    | .61|
| Japan   | -6.4      | .08 | .03 | -.35  | 1.5   | 1.28      | .00   | -.03  | 2.9    | .82|
| Thailand | -5       | .05 | .06 | 1.53  | -.75  | -1.18     | .005  | -.012 | 14.3  | .78 |
| SA      | -5.42     | .04 | -.01 | .15   | -.19  | -.03      | .00   | .11   | 15.4   | .68|
| Brazil  | -8.9      | .06 | .17 | .03   | 1.84  | .04       | .00   | .11   | 15.4   | .68|
| Greece  | -12.1     | -.12 | -.16 | -2.07 | -.62 | 1.17     | -001  | -.016 | 40.13  | .88|
| Australia | -25.75 | .02 | .02 | -.15  | 1.4   | .10       | .00   | -.07  | 11.6   | .77|
| Spain   | -5.12     | .11 | .02 | -.39  | -.18  | .30       | .00   | .001  | 6.72   | .87|
| S Kor   | -5.5      | .03 | .16 | -.56  | -1.03 | .29       | .004  | -.57  | 5.91   | .63|
| Turkey  | -83.8     | .16 | .72 | -.03  | 3.17  | .00       | -.00  | -.49  | 29.86  | .61|
| Poland  | 3.28      | .12 | -.05 | -.008 | -.12  | .29       | .00   | -.18  | -.59   | .81|
| Argentina | 68.15  | .31 | -.15 | 1.13  | 1.066 | -2.37     | .002  | -.02  | 9.78   | .87|

Note: Bold large and small fonts values are respectively significant at 5% and 10% levels

Table 5: Estimated Intercepts and Coefficients of Regression of BCI on several Variables

| Country | Intercept | CCI | Infla | Unemp | Interest | Stock | DebrR | Govern | R² |
|---------|-----------|-----|-------|-------|----------|-------|-------|--------|----|
| USA     | 38.9      | .43 | 2.47  | 1.18  | -2.66    | -00   | .26   | 35.07  | .80|
| UK      | 14.6      | 1.84 | 8.32  | -3.46 | -3.33    | .00   | 1.0   | -13.8  | .63|
| France  | 63.8      | -18 | 7.11  | 8.3   | -1.37    | .009  | -.88  | -10.4  | .90|
| Germany | 22.59     | -.00 | -1.89 | 6.14  | 2.11     | .005  | .46   | -30.18 | .82|
| China   | -107      | 2.09 | .54   | 12.89 | -7.43    | .006  | -1.7  | -22.6  | .82|
| India   | -248.3    | 1.07 | 2.07  | -.74  | 1.38     | .003  | 4.09  | 63.3   | .90|
| Japan   | -60.66    | 3.45 | 8.12  | -11.12 | 3.3      | -.002 | .26   | -52.31 | .80|
| Thailand | 57.16     | .16 | -.21  | .65   | -2.3     | .03   | -.58  | 41.63  | .83|
| SA      | -61.2     | .91 | 5.2   | 0.17  | -4.53    | -.00  | .03   | 349.89 | .89|
| Brazil  | 46.36     | -.4  | .34   | -.43  | .06      | .00   | .7    | -8.06  | .37|
| Greece  | 64.74     | -.02 | -.77  | -.58  | 1.76     | .002  | -.10  | 61.6   | .93|
| Australia | -167.2 | -.20 | 1.06  | 13.26 | 1.21     | .006  | -.86  | 48.73  | .49|
| Spain   | -7.2      | .59  | .91   | -1.32 | .33      | -.00  | -.11  | 22.8   | .67|
| S Kor   | -31.2     | -.58 | 2.66  | 1.64  | 3.24     | .02   | -1.71 | 65.74  | .66|
| Turkey  | 209.02    | -.89 | -.48  | -.1276 | .09      | .001  | 1.41  | -.79   | .80|
| Poland  | -23.4     | .55  | 1.49  | -1.42 | -1.15    | .00   | 98    | -76.45 | .93|
| Argentina | 55.35 | -.23 | .009  | .85   | -1.08    | .01   | -.01  | 9.4    | .71|
The results of CCI as depicted in Table 6 show that movement of stock prices become a significant variable for France, China, Japan, Brazil and Poland. We find four countries, viz USA, South Africa, Greece and Argentina where Governance plays a significant role in determining consumers’ sentiments in taking decisions to spend and save. All the estimated governance coefficients are of usual positive signs. But the irony is that in all these four countries falling growth trends are associated to the falling governance levels. Debt Ratio works significantly for France, China, Brazil, Greece, Spain and Turkey. For the emerging countries like China, Brazil and Turkey rising debt ratio is conducive to CCI i.e. government borrows for development purpose that are related to consumers’ activities. But in developed countries like Greece and France the sign is negative implying the fact that the rising trend of Debt Ratio are associated to falling trends of CCI. Consumers in these two countries think of public debt as non desirable.

But the scenario of Spain is different. Both the trends of CCI and Debt Ratio are falling for it. There are the countries like UK, Germany, India, Australia and South Korea where no factors concerned are significant in determining consumers’ confidences of their territories.

Combining the regression results of growth, BCI and CCI with respect to the levels of governances we get the result that all the significant governance coefficients determining all three dependent variables are with expected positive signs except France for growth and Poland for BCI. All CCI results are with usual positive signs. There may be other factors for France’s growth and Poland’s BCI other than governance that can explain the declining growth trend and rising trend of BCI.

**Table 6:** Estimated Intercepts and Coefficients of Regression of CCI on several Variables

| Country  | Intercept | Infla | Unemp | Interst | Stock | DebtR | Govern | R²  |
|----------|-----------|-------|-------|---------|-------|-------|--------|-----|
| USA      | -86.7     | 2.2   | -15.7 | -98     | .001  | 1.18  | 134.2  | .85 |
| UK       | -77.6     | -2.14 | -6.17 | .30     | -0.001| .29   | 70.6   | .73 |
| France   | 216.8     | -2.66 | 2.46  | -1.77   | .005  | -1.23 | -61.3  | .74 |
| Germany  | -856.2    | 7.56  | 17.41 | -1.83   | -.009 | 5.2   | 272.5  | .39 |
| China    | 68.5      | -5.6  | -4.11 | 5.31    | -.001 | 1.97  | 4.64   | .67 |
| India    | 150.3     | -7.9  | 4.19  | -2.01   | .00   | -1.01 | 85.04  | .63 |
| Japan    | -27.86    | .44   | 3.3   | -98     | .001  | .02   | 24.26  | .62 |
| Thailand | 60.86     | 3.93  | -2.3  | -5.24   | .01   | .46   | 18.74  | .87 |
| SA       | .24       | -2.06 | -1.47 | 1.96    | .001  | -.59  | 105.49 | .71 |
| Brazil   | 42.9      | -23   | -2.12 | -.03    | .00   | 1.12  | -12.47 | .85 |
| Greece   | -34.25    | -3.51 | 3.25  | 3.79    | -.001 | -.47  | 53.92  | .96 |
| Australia| 114.3     | .05   | -2.64 | 2.06    | -.001 | -.38  | -59.5  | .42 |
| Spain    | -2.58     | 4.19  | -2.24 | 39      | .00   | 2.59  | -26.6  | .78 |
| S Kor    | 78.9      | -4.75 | 3.49  | -1.25   | .01   | -.41  | 18.02  | .64 |
| Turkey   | 138.9     | -.004 | -6.06 | .08     | -.001 | .54   | 30.68  | .94 |
| Poland   | 62.5      | .68   | -1.2  | .86     | .000  | .82   | -30.98 | .68 |
| Argentina| 70.16     | -.03  | -1.17 | -1.44   | .002  | .04   | 16.89  | .82 |

Note: Bold large and small fonts values are respectively significant at 5% and 10% levels

4.3. Factors affecting Growth and Confidence for Pooled Data

The advantage of pooling of individual country data is that which an individual cannot do an aggregation or club can do it easily. That means the pooled data regression is more powerful in the sense that it runs under a degrees of freedom which is very large in size. The individual country’s interlinkages through the process of globalization is captured in the pooled data and the regression in pooled data gives sophisticated results compared to the results of the individual country regression analysis. We follow the same regression equations as mentioned in the equation (3), (4) and (5). The estimated equations are given as follows:

\[
\text{Growth} = 4.70 + 0.01 \cdot \text{BCI} + 0.008 \cdot \text{CCI} - 0.03 \cdot \text{Infl} - 0.08 \cdot \text{Unempl} - 0.01 \cdot \text{Interst} + 0.00002 \cdot \text{Stock}
\]
The estimated regression equation of Growth in a pooled system shows that the significant determinants are BCI, CCI, Unemployment, Debt Ratio and Overall Governance. The usual signs are not observed for Debt Ratio and Overall Governance. A rise in debt of government, if used for development purposes, then the corresponding sign would be positive. A negative and significant sign for Debt Ratio implies the fact that there may be channelization of government borrowed fund towards the activities other than development like that of repayments of loans, etc. On the other hand, a negative sign of estimated coefficient of governance leads us to conclude that the countries with sufficient lacking in good governance have grown at a high rate. This is the feature of emerging economies. Rise in the confidences of business houses and consumers positively make impact upon growth factor and a rise in extent of unemployment in the overall countries leads to fall in growth magnitudes. Hence, we get five significant factors in explaining the growth factor in a pooled system which is an improvement over the individual country results where majority of the countries did not find any significant factors for their growth dimensions. BCI and CCI are also significantly and inversely dependent upon the Governance factor. Another common factor of determining BCI and CCI is the Stock Indices of different countries. Debt Ratio and Unemployment explain CCI only with the latter having usual sign.

5. Conclusions

The study we made so far has established that there are causal relations from business and consumer confidences to growth for the pooled data whereas governance causes growth. There are no way causalities between business confidence and consumer confidence along with no causalities between both concepts of confidences and governance. The result differs when we take up the individual country’s causality tests. In majority of the countries there are absences of causalities between the variables. USA is the single country where we do not find any causal relation among the variables. Most cases of causality are found for South Africa and the least cases are for USA followed by Argentina and Australia.

The evidence for finding the significant factors in determining variables for growth and confidences we observe that there are majority of cases in the individual country case where we do not find any significant variable especially with respect to the growth equation. When we pool the data and do the same regression analysis we find BCI, CCI, Unemployment, Debt Ratio and Overall Governance as the significant growth determining variables. The significant variables for BCI are CCI, Stock and Governance but for CCI they are Unemployment, Stock, Debt Ratio and Governance. In all cases the governance coefficients are negative implying there may be non linear way of work of this factor. The future course of action can be the finding of other factors like that of labour force, capital stock and the segments of governance along with non linear forms of governance that can broaden the power of the study.

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