# Possible development paths taken by global economies post-financial crisis

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***Abstract:*** We examine 75 economies that have displayed remarkable changes in the Global Competitiveness Index (GCI) scores. Additionally, the paper explores relationship between increase in their competitiveness over a period of eleven years (from 2007-08 to 2017-18) and the development pathways followed by them. While East Asian growth accelerations were driven by rapid industrialization (Rodrik & Diao, The recent growth boom in developing economies: A structural perspective, 2017) highlighting the linear route to structural transformation followed by most developed economies; we find that during the specified period of our analysis, certain developed and emerging economies have increased their competitiveness by following a different route. This paper closely examines the paths followed by these economies by identifying the factors attributing to maximum growth in competitiveness. Also, it highlights the pillars moving simultaneously and contributing the most to the GCI Score.

***Keywords:*** Competitiveness, Development Paths, Structural Transformation, Time Series

## I. INTRODUCTION

Though the macro-economic and eco- political strategies have been varying across the countries, some countries have typically followed certain development trajectories. While the claim to fame for the Asian Tigers was rapid structural transformation and avoiding the middle-income trap (Kasenda, 2014), this was supplemented with reforms and initiatives like free market norms (Felipe, Abdon, & Kumar, 2012). The global positioning of an economy in terms of competitiveness and ease of business regulations is increasingly gaining momentum over the past few years. Given the fact that Global competitiveness is a multidimensional concept, this paper builds on the conclusions based on the framework of competitiveness formulated by World Economic Forum. It states that competitiveness is determined by the productivity with which a nation uses its human, capital, and natural resources (Porter, 2007).

The theory of comparative advantage is based on achieving competitiveness by improving the business environment of an economy based on the diamond model developed by Porter, which involves a play of four critical factors. These factors are: Input Conditions (given by natural endowments, human resources, capital availability, physical infrastructure etc.), context for firm rivalry (determined by local rules and incentives that encourage investment and productivity), demand conditions determined by the needs of sophisticated customers, and strong cluster of local suppliers supporting openness to competition. Similarly, theories on competitive advantage of regions are based on regions competing with each other over attracting key markets, firms (capital), and workers (Michael, Martin, & Tyler, 2004).

Associations between macro-economic aggregates and competitiveness have highlighted the fact that economic growth as measured by GDP per capita growth rates is positively related to the growth in global competitiveness (Korez-Vide & Polona, 2016). Additionally, with regards to trade patterns and natural endowments different countries have gone with specialization in different industries, making their labour productivity a function of the nature of industry (export/import) (Wolff, 2003). Most researches have classified factor endowments as a fundamental pillar of competitiveness, eventually other factor categories like skilled human capital and ultimately deployment of superior technology enables the creation of strong competitive position on domestic and world markets (Lundberg, 1988). By classifying all the world economies into certain stages of development, the competitiveness framework proposes a typical pathway of development. However, it also gives a scope to individual countries to significantly diverge from this ‘average’ path. This leads to each economy developing on its core competency and defining its own path for increasing competitiveness (Ketels, 2017).

This paper analyses the Global Competitiveness scores of approximately 140 economies over a period of 11 years, from 2007-08 to 2017-18. It investigates the pillars that have accounted for a high increase in the GCI scores over these years. Further, it highlights which pillars have moved simultaneously and shown a considerable increase in the overall GCI score.

## II. THEORETICAL BACKGROUND & HYPOTHESIS

Innately, structural transformation has stressed upon the gradual evolution and shift of an economy from agriculture to industries to services sector, with the rate and direction of structural transformation a variable (Rodrik, Structural Change, Fundamentals, and Growth: an overview, 2013). Also, a parallel narrative development of fundamental capabilities in the form of human capital and institutions has been observed from select global economies. Though the overarching objective of structural transformation has been shifting the resources towards industrialization as a means to generating more economic growth and hence employment, the pathways of implementation have differed across the globe- some being state-led and some being purely governed by the market forces (Rodrik, The Past, Present, and Future of Economic Growth, 2013).

Attempts towards evaluating the productivity of the global economies have been made by many research organizations and think tanks. This paper makes use of the World Economic Forum's Global Competitiveness dataset. The Global Competitiveness Index is a measure of productivity and takes into account twelve pillars, differentially weighed for each economy on the basis of which stage of development it is in. Out of the twelve pillars, the first four pillars make sub-Index A or the Factor Driving Conditions, the next six pillars make sub-index B or the Efficiency Driving conditions, and the last two pillars make sub-Index C or the Innovation driving conditions (see Exhibit 1). The competitiveness scores are in the range 1-7 with 1 representing least competitive economy and proximity to 7 representing the most competitive economy.

Exhibit 1: Global Competitiveness Index Framework

| **Sub-Index A (Basic Requirements)** | **Sub-Index B (Efficiency Enhancers)** | **Sub-Index C (Innovation & Sophistication)** |
|---|---|---|
| Institutions | Higher Education and Learning | Business Sophistication |
| Infrastructure | Goods Market Efficiency | Innovation |
| Macro-economic environment | Labour Market Efficiency | |
| Health & Primary Education | Financial Market Development | |
| | Technological Readiness | |
| | Market Size | |

*Source: World Economic Forum*

The pillars constituting Global Competitiveness are quantified by a total of 113 indicators, 74 of which are qualitative and capture responses from the business community/ entrepreneurs operating from that economy. These perception indicators measure various aspects of an economy like Government efficiency (government policy supports national competitiveness or not), Infrastructure (do they fulfil business requirements or not), and efficiency of operating businesses. They are ranked by the entrepreneur on a scale of 1-7 (with description on what each score captures clearly stated).

The remaining 39 indicators are quantitative in nature and are pooled in from various international and national databases like the World Bank macro-economic aggregates, ILO data, UNICEF data on social indicators, etc. In order to fit the quantitative data in the range 1-7, normalization of each indicator is done by taking the ratio of difference of an economy with the minimum value economy to the difference between maximum and minimum values over this indicator. Once all indicators are uniformly placed in the 1-7 range, the concept of differential weightages (See Exhibit 2) is applied to each economy

Exhibit 2: Weightages used for GCI computation

| | **STAGE OF DEVELOPMENT** | | | | |
|---|---|---|---|---|---|
| | Stage 1: Factor driven | Transition from Stage 1 to Stage 2 | Stage 2: Efficiency Driven | Transition from Stage 2 to Stage 3 | Stage 3: Innovation Driven |
| **Weight for basic requirements** | 60% | 40-60% | 40% | 20-40% | 20% |
| **Weight for efficiency enhancers** | 35% | 35-50% | 50% | 50% | 50% |
| **Weight for innovation & sophistication** | 5% | 5-10% | 10% | 10-30% | 30% |

*Source: World Economic Forum*

Much of the scholarly works on competitiveness have dealt with analysis at specific economy level and regional levels (Mihaela, 2016) (Martin, 2002) , with factors of competitiveness being disaggregated at various levels and assessment done for each for any economy/region. Further, some studies have associated the concept of competitiveness with a specialization strategy evolving to comparative advantage (Jiri & Ondrej, 2017). Firm level research has provided an insight on which factors affect a firm's competitiveness in emerging markets (Akben-Selcuk, 2016).

Pillar Specific studies emanating from the Global Competitiveness Concept have surfaced recently, highlighting the importance of a specific pillar on competitiveness of a nation (Sekuloska, 2014) (Alina Mihaela, Liviu, Maria Denisa, & Maria Alexandra,

2018). Our work is based on an empirical analysis of the GCI dataset that identifies the factors which have been moving together and impacting the competitiveness scores. Hence we test the following hypothesis through this paper:

Hypothesis 1: Post financial crisis a group of economies have taken alternative paths for increasing their competitiveness

## III. METHODOLOGY & DATA

GCI Data over the period 2007-08 to 2017-18 is taken for 140 economies and difference in delta is noted for each economy between the given interval of 11 years. Primary data source used is the GCI database from 2007-08 to 2017-18, Data from World Bank Development Indicators (export-import), and ITC Trade Maps.

1. Shortlisting GCI Accelerators: With an objective of shortlisting those economies that have shown fastest acceleration in this interval, a filter of Delta greater than or equal to 0.20 is applied. The rationale of applying this filter is that it accounts for approximately 3% of the improvement in the GCI Score. Since, the range of score in which all 140 economies are evaluated in from 1-7, which is extremely small, movements in score made by economies in ten years are rigid and may seem unnoticeable. This explains the reason of pegging delta at 0.20 which gives a derived sample of 75 economies (approximately 50% of the universe).

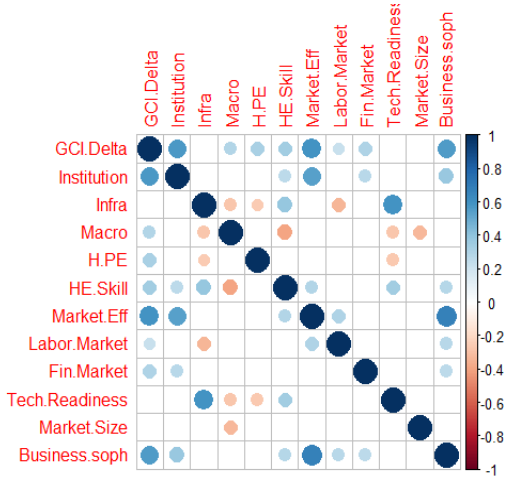
   Another caveat towards the selected sample is that since the data is used between the time period 2007-08 to 2017-18, many countries that may have already achieved a significant GCI score (reaching saturation value) before this time window, might not be featuring in the list of short-listed 75 economies.

2. Delta variation in pillars: Second objective is to check how improvement in the twelve pillars is leading to an improvement in the GCI Score (delta value for the given window of eleven years). Notwithstanding we have also taken into account that there might be associations between the constituent pillars of the index, and that improvement in these associated pillars might have led to a faster growth of GCI delta. Correlation matrix of Pillar delta for 75 Countries with GCI delta >0.2. The plot below only displays significant correlation between variables. $p<0.05$.

   The correlation matrix of the pillar delta scores highlights the pillars that have moved together during the chosen time frame. Circles in blue indicates positive correlation and circles in red indicate negative correlation. The bigger the circle, higher the correlation between the 2 variables. Based on the correlation matrix, following observations were made:

   - Between 2007-08 and 2017-18 for the 75 short-listed economies (scoped in this study), the improvement in the GCI delta has been strongly related with Improvements on Pillar 1: Institutions, Pillar 6: Goods Market Efficiency, and Pillar 11: Business Sophistication
   - Improvements made by economies on Pillar 6: Goods Market Efficiency were strongly correlated with improvements made on Pillar 1: Institutions and Pillar 11: Business Sophistication
   - Any economy making an improvement on Pillar 9: Technological Readiness was strongly correlated with improvements on Pillar 2: Infrastructure
   - Improvements on Pillar 3: Macro-economic Environment of an economy were negatively correlated with Improvements made by the economy on Pillar 5: Higher Education & Skilling and the market size

Fig 1: Correlation matrix of the pillar delta




Source: Own analysis using GCI scores from 2007-08 to 2017-18

Meanwhile during an initial analysis, we computed the delta values for pillars during 2017-18 and 2007-08 for all the 140 economies. Even though equal weightage is given to each pillar, some pillars have grown at a greater rate while some have shown lesser elasticity. In essence, the more rigid is GCI score movement for a particular pillar, lesser number of economies are showing improvement over it. From Table 1 it can be observed that Pillar 9- Technological Readiness has the greatest delta elasticity; and for that matter 127 out of 140 economies between 2007-08 and 2017-18 have shown a positive delta greater than 0.20. This also goes in line with the technology endogenizing theories of development. Similarly, for pillar 7: Labour Market Efficiency which has shown the least delta elasticity among all the 12 pillars, only 26 economies have exhibited a delta greater than the pegged value during the period of study.

Table 1: Pillar wise Elasticity in delta

| **Pillar** | **Elasticity in delta** | **Number of economies** | |
|---|---|---|---|
| Pillar 1: Institutions | 0.81 | 45 | Lowest delta of the sample fixed at 0.20 (countries showing an improvement only above this delta value are taken for analysis) |
| Pillar 2: Institutions | 1.58 | 102 | |
| Pillar 3: Macro-economic environment | 1.62 | 67 | |
| Pillar 4: Health & Primary education | 1.38 | 98 | |
| Pillar 5: Higher Education & Learning | 1.42 | 105 | |
| Pillar 6: Goods Market Efficiency | 0.79 | 53 | |
| Pillar 7: Labour Market efficiency | 0.52 | 26 | |
| Pillar 8: Financial Market Development | 1.33 | 21 | |
| Pillar 9: Technological Readiness | 2.05 | 127 | |
| Pillar 10: Market Size | 1.46 | 101 | |
| Pillar 11: Business Sophistication | 1.01 | 69 | |
| Pillar 12: Innovation | 0.60 | 64 | |
| | Greater elasticity | Lesser elasticity (rigidity) | |

Source: Own analysis using GCI scores from 2007-08 to 2017-18

3. Clustering of economies: Since the overall objective of the paper is to propose alternative development pathways that economies around the world have been exhibiting post 2007-08 financial crisis, clustering was carried out on the basis of pillars' delta scores (pillar score in 2017-18 minus pillar score in 2007-08). We developed 8 clusters of countries based on 12 pillar delta scores for further analysis and evaluation, as to which pillars have contributed the most in increasing the GCI Score for a particular cluster. However, the median value for four of these clusters was lesser than the median value of the sample of 75 economies. So we took all those clusters that had median value greater than 3.47 (median of the 75 economies).

Table 2: Cluster components

| **Cluster** | **Countries** | **Median GCI Delta** |
|---|---|---|
| Cluster 1 | 5 | 0.702 |
| Cluster 2 | 13 | 0.368 |
| Cluster 3 | 10 | 0.418 |
| Cluster 4 | 14 | 0.279 |
| Cluster 5 | 17 | 0.245 |
| Cluster 6 | 2 | 0.349 |
| Cluster 7 | 8 | 0.357 |
| Cluster 8 | 6 | 0.259 |

Source: self-analysis using GCI scores from 2007-08 to 2017-18

This gives us a final sample of 38 economies. However, since cluster 1 & 6 did not factor into our assessment as they had lesser number of elements available for analysis.

4. Principal Component Analysis for selected clusters: In order to find which pillars have been moving together in a particular cluster and hence contribute the most to the GCI score improvement, we carried out individual cluster analysis. Additionally, Principal Component Analysis also helped us identify the key pillars that explain the maximum variation in the delta scores in each cluster

## IV. EMPIRICAL ANALYSIS

This section intends to explore the number of alternative development pathways that global economies have exhibited post-financial crisis. While some economies have emphasized on the improvement of institutional quality and governance as the levers for upgrading their productivity curve over a period of time, some have started with strengthening their human capital through primary education, health-care systems, and skilling as per evolving markets (Kasenda, 2014). The arguments that endogenize technology as a lever of growth in long term have led to some nations upgrading their industries ecosystem along with the work-force and integrating themselves to the global production networks of advanced products (Rodrik, New Technologies, Global Value Chains, and Developing Economies, 2018).

1. PATHWAY 1: Linear Translators (from factor Driven to Efficiency Driven) Economies making improvement on infrastructure, technological readiness, and higher education & learning

Ten economies constitute this cluster; They are Kyrgyz Republic, Bulgaria, Russian Federation, Georgia, Indonesia, Costa Rica, Bangladesh, Bosnia & Herzegovina, Poland, and Uruguay. Among the notable cluster characteristics are the pillars with greatest improvement in score, which are: Pillar 2- Infrastructure, Pillar 5- Higher Education & Learning, and Pillar 9- Technological Readiness. Also, economies falling in this cluster have shown a negative delta for Pillar 7- Labour Market Efficiency and Pillar 8- Financial Markets, over a period of ten years (2007-08 to 2017-18).

Table 3: Cluster 3 characteristics

| MEDIAN DELTA VALUES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCI Delta | PILLAR 1 | PILLAR 2 | PILLAR 3 | PILLAR 4 | PILLAR 5 | PILLAR 6 | PILLAR 7 | PILLAR 8 | PILLAR 9 | PILLAR 10 | PILLAR 11 | PILLAR 12 |
| 0.418 | 0.316 | 1.215 | 0.381 | 0.496 | 0.627 | 0.274 | -0.588 | -0.049 | 1.554 | 0.335 | 0.163 | 0.166 |

Source: self-analysis

We tried to delve deeper into the pillar specific indicators by analysing their performance over the period. Building from the axiom that ICT infrastructure[1] has a positive and significant effect on the growth in productivity of economies (Zohra, 2012), we observe that economies of this cluster had tremendously improved the telecom penetration between 2007-08 and 2017-18. While economies like Kyrgyz Republic, Bangladesh, Indonesia, and Costa Rica had exhibited steep surge in the 'mobile subscriptions per 100 population' between this period, indicating a strong penetration of telecommunication services post-financial crisis; countries like Bulgaria and Russian Federation had already achieved a peak performance and saturation over this indicator around 2013-14. Also, it was observed that for indicators: 'Individuals using internet, %' and 'mobile broadband subscriptions, per 100 populations'[2], economies like Bangladesh, Georgia, and Kyrgyz Republic that started with a very low base of internet penetration, picked up significantly in the eleven years post financial crisis. Similarly, the same three countries and Uruguay showed a rocketing user base of mobile broadband connections. Looking at the technology deployment as an instrument for efficient public distribution (Muralidharan, Niehaus, Sukhtankar, & Weaver, 2019) and hence greater productivity, many development projects carried out in the Asian countries have provided an evidence of mobile linked services as a tool for improving last mile service delivery, minimizing transaction costs, and hence facilitating the flow of savings into bank (DeMel, McIntosh, Sheth, & Woodruff, 2018). Developing countries, in the last ten years have increasingly displayed the significance of cellular handsets in not only ensuring last mile connectivity but also increasing primary-school enrolment, particularly for young girls as well as targeted improvements in teacher attendance and school facilities (Asim & Dee, 2016)

For the indicator 'Secondary Education enrolment, gross percentage', it can be observed that almost all the economies in this cluster have showed significant positive progress in Secondary enrolment rates[3], except for Bulgaria & Uruguay. As the enrolment rates in Bulgaria and Uruguay was already more than 100 percent in 2007-08, a slight downward movement over the indicator in 2017-18 skewed the two's performance. Among all the economies of this cluster Costa Rica showed the highest absolute improvement in terms of 'secondary enrolment, gross percentage', in spite of the fact that it started from a lower value base in 20008. Since education performance indicators get translated into an optimized performance in medium to long run and yield inter-generational results (Akresh, Halim, & Kleemans, 2018), evidences from some of the economies in this cluster corroborate that efforts towards increasing the enrolment rates began sometime in late 70's.

Similarly, it was observed that tertiary education enrolment climbed up for almost all the economies post-financial crisis. Among the ten economies studied in cluster 3, it was observed that the less developed economies that began with a comparatively lower enrolment rate in 2007-08 showed the maximum improvement- case of Costa Rica and Bosnia & Herzegovina. This is a stylized

[1] Pillar 2 consists of 9 indicators, of which 6 are qualitative indicators and 3 are quantitative indicators. We have tried to understand the Pillar performance by studying the quantitative indicators. Therefore, for Pillar 2: Infrastructure we have studied the communication infrastructure indicator 'Mobile telephone subscriptions per 100 populations'

2 Pillar 9 consists of 7 indicators of which 3 are qualitative and 4 are quantitative. We have tried to understand the performance of Pillar 9 by studying the quantitative indicators 'individuals using internet, %' and 'mobile broadband subscription, per 100 population'

[3] Pillar 5 consists of 8 indicators, of which 6 are qualitative and 2 are quantitative. Indicators used for analysing the Pillar performance are: Secondary education enrolment, gross %' and 'Tertiary education enrolment, gross %'

fact highlighted in many researches that competitiveness increases with increased labour productivity (Wolff, 2003). For developing countries, where manufacturing sectors are usually picking up, labour productivity tends to catch up with the productivity of developed countries, where technologies are the most advanced. The greater the distance from the productivity frontier, the faster the rate of productivity growth (Rodrik, McMillan, & Sepulveda, Structural Change, Fundamentals, and Growth: A framework and case studies, 2016).

2. PATHWAY 2: Institutions facilitating Markets (from factor Driven to Efficiency Driven)

Thirteen economies constitute this cluster. They are: China, Nepal, United States of America, Guinea, Guyana, Macedonia FYR, Paraguay, Burundi, Bhutan, Cote De Ivory, Cameroon, Senegal, Rwanda). The notable cluster characteristics include significant improvement in the scores of these pillars: Pillar 1- Institutions, Pillar 2- Infrastructure, Pillar 5: Higher Education & Training, Pillar 6- Good Market Efficiency, Pillar 9- Technological Readiness, and Pillar 12- Innovation.

Table 4: Cluster characteristics of Cluster 2

| MEDIAN DELTA VALUES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCI | PILLAR 1 | PILLAR 2 | PILLAR 3 | PILLAR 4 | PILLAR 5 | PILLAR 6 | PILLAR 7 | PILLAR 8 | PILLAR 9 | PILLAR 10 | PILLAR 11 | PILLAR 12 |
| 0.368 | 0.407 | 0.501 | 0.159 | 0.218 | 0.471 | 0.428 | 0.103 | 0.292 | 0.520 | 0.308 | 0.334 | 0.558 |

Source: self-analysis

It has been established that quality of institutions positively impacts the entrepreneurship rate in an economy and hence the overall productivity (Autio & Fu, 2015). Also easier business entry/exits and other related regulations tend to support the growth of the economy. On these lines, a parallel can be drawn from the characteristics of this cluster, with pillar 1 and pillar 6 facilitating each other's' performance. While Pillar 1 explains the quality of regulatory processes necessary for improving competitiveness, pillar 6 details the the market conditions like Imports, Exports, Custom Procedures, FDI etc.

We studied the trade statistics (export & import data of economies in Cluster 2) using database from International Trade Centre; we observed that economies of this cluster except Nepal & Bhutan have shown increased exports during the period of study. Further, the imports for all nations have gone up indicating their integration in the global value chains. (Kurul & Yalta, 2017) have shown the significance of institutional factors in FDI flows in developing economies by using a panel data estimation from 2002-2012. Since a range of indicators on legal and political institutional quality including business conducive economic policies play a determining role in increasing trade (Robert & Whelan, 2010), the increase in exports and imports can be seen as impacted by the doing business environment of the economy.

We studied Cluster 2 by analysing the indicators: 'Number of procedures to start a business' and 'Number of days to start a business'[4]. It was observed that the average number of days for the 13 economies of this cluster, between 2017-18 and 2007-08, came down to 13.9 from 38.6. In essence, all the countries minimized the transaction time with Senegal, Paraguay & Burundi minimizing 52 and 39 days respectively in time taken for starting a business. Similarly, the number of procedures to start a business for the Cluster 2 economies, came down from 10 in 2007-08 to 6 in 2017-18. Notably, Senegal, Paraguay & Burundi Cameroon are the economies that most simplified their business procedures. Again, this can be corroborated by observing the rate of change of exports & imports during the period 2007-08 to 2017-18, which has led to a significant improvement in the GCI scores for the economies of this cluster.

These observations assert the underlying fact that institutions act as a source of trade and thus facilitate markets (Levchenko, 2006).

3. PATHWAY 3: Non-linear translators or Disruptors

Eight economies constitute this cluster (Cluster 7). They are: Malta, Kenya, Luxembourg, Italy, Cape Verde, Mauritius, Netherlands, and New Zealand). The notable cluster characteristics include significant improvement in the scores of these pillars: Pillar 2: Infrastructure, Pillar 3: Macro-economic environment, Pillar 7: Higher Education & Learning, Pillar 7: Labour Market Efficiency, and Pillar 12: Innovation

Table 7: Cluster characteristics for cluster 7

| MEDIAN DELTA VALUES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GCI | PILLAR 1 | PILLAR 2 | PILLAR 3 | PILLAR 4 | PILLAR 5 | PILLAR 6 | PILLAR 7 | PILLAR 8 | PILLAR 9 | PILLAR 10 | PILLAR 11 | PILLAR 12 |
| 0.357 | 0.039 | 0.692 | 0.415 | 0.373 | 0.478 | 0.270 | 0.330 | -0.779 | 1.011 | 0.250 | 0.289 | 0.558 |

[4] Doing Business indicators are taken from the World Bank annual study on Ease of Doing business. It consists of 10 major areas that impact doing business in any economy. This dataset captures information for 190 nations on procedural, capital, and time aspects an entrepreneur undergoes for carrying out his business.

Source: self-analysis

The term 'non-linear translators' implies that notwithstanding the agriculture sector witnessing a rapid decline post financial crisis in these economies, the economy has bypassed the industrial sector growth phase and a majority share of the GDP now is accounted by the services sector. This cluster is characterized by the new means of production based on a wide range of factors enabled by technological developments (Alessandrini, Pietro, Gramillano, & Lilla, 2017).

The economies of this cluster are distributed on two broad contours: (i) across geographical expanse that covers the African and European Continents; (ii) across all three income-grop classification ranging from Kenya & Cape Verde in Lower Middle Income, Mauritius in Upper-Middle Income, and the remaining five countries in High Income Groups. So, we tried to understand the variations in economic structure of Cluster 7 economies, by studying the economic indicators' database from the World Development Indicators. The following characteristics were observed:

- All the remaining economies of the cluster registered a sharp decline in agriculture, except for Kenya where it continued to rise. Understandably, this is well supported from the income-group Kenya lies in, with its factors of production predominantly utilized in the primary sector.
- Share of industries in GDP declined between 2007-08 and 2017-18, with Malta marking the steepest decline (from 51% in 2007-08 to 13% in 2017-18)
- Share of services in the GDP increased for all the economies in this cluster, with Malta (highest rise) and Kenya (lowest rise) lying at the extremes.

The three African economies of this cluster display their integration with global economies through preferential market access. For Cape Verde growth has been sustained by the service sector, namely transports, hotel and restaurants and communications, and also due to increased spending on education and improved governance (Macedo & Pereira, 2010). Similarly, Mauritius which was pioneering manufacturing in late 90s through its export promotion zone adjusted to the trade shocks through a right-policy mix that offered the share of services to rise, especially tourism, financial services, and information and computer technology (ICT) (Frankel, 2010)

Additionally, for the Cluster 7 economies it was observed that, a saturation improvement is marked by the indicators of factor-based pillars[5]. In essence values for indicators like 'Mobile subscriptions per 100 populations' have increased tremendously, with all the countries increasing their mobile subscription base. in fact, a steep hike in value for this indicator for some of the economies was achieved by 2015-16, post which the increase is nominal. Additionally, the primary education enrolment rate, net % for majority of economies in this cluster is in top 10 percentile.

Among the efficiency driven pillars[6], the economies in this cluster have shown greater improvements on indicators like 'Women Workforce Participation Ratio', 'Individuals using internet, %'. Between 2017-18 and 2007-08, all the economies have shown a surge not less than 25% over the indicator 'individuals using internet'. Additionally, Malta, Kenya, and Mauritius have shown more than 100% growth over this indicator, which can be also attributed to their lower base at 2007-08.

Among the innovation driven indicators[7], a significant improvement is registered over the indicator 'PCT patent applications, per million population', marking the shift of all the countries towards Knowledge-Driven economies focusing on R&D.

## V. CONCLUSION

The development paths explored in the previous section support Hypothesis 1: Post financial crisis a group of economies have taken alternative paths for increasing their competitiveness

Also, it was found out that Pillar 1: Institutions, Pillar 6: Goods Market Efficiency, and Pillar 11: Business Sophistication have contributed the most to the improvement in GCI scores of economies post financial crisis (Refer Figure 1). Alternatively, pillars that have been moving simultaneously and giving a significant GCI score improvement over these years have been:

- Combination 1: Pillar 2- Infrastructure & Pillar 9- Technological Readiness
- Combination 2: Pillar 1- Institutions, Pillar 6- Goods Market Efficiency, and Pillar 11- Business Sophistication
- Combination 3: Pillar 2- Infrastructure & Pillar 5- Higher Education & Learning

[5] Factor Based Pillars include Pillar 1 to Pillar 4 that deal with subjects of Institutions, Infrastructure, Macro-economic environment, and Primary Education and Health

[6] Efficiency Driven Pillars include Pillar 5 to 10 that deal with subjects of Higher Education & Training, Goods Market Efficiency, Labour Market Efficiency, Financial Market Development, Technological Readiness, and Market Size

[7] Innovation Driven Pillars include Pillar 11 & Pillar 12 that deal with Business Sophistication and Innovation respectively

Economies falling in Cluster 3 and taking development pathway 1 have been utilizing Combination1 for marking a greater GCI score growth between 2007-08 to 2017-18. Similarly, economies falling in Cluster 2 and taking development pathway 2 have been utilizing Combination 2. The above arguments support Hypothesis 1 that states post-financial crisis a group of economies have taken alternative development paths.

Additionally, it was also found from Cluster 7, that economies like Burundi, Macedonia FYR, and Paraguay that increased their exports commendably between 2007-08 and 2017-18, had strong correlations with their easing of business regulations (Indicators: Number of procedures and days taken to start a business). By eliminating 8-10 procedures for business entries, they made doing businesses in them efficient by approximately 37 days, which led to growth in trade.

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