International Journal of Multidisciplinary Research and Development
Online ISSN: 2349-4182, Print ISSN: 2349-5979, Impact Factor: RJIF 5.72
www.allsubjectjournal.com
Volume 4; Issue 7; July 2017; Page No. 436-443

Convergence or divergence: An analysis of regional disparities in South Asian countries

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Abstract
History of development and progress has seen divergence and convergence across regions both between countries and within the country throughout the history. The widespread regional disparity is an important economic and political issue. The forces of globalisation are expected to reduce the gap between rich and poor regions thereby reducing the disparities considerably due to overwhelming impetus of convergence forces. Many studies have studied the trends and patterns of regional convergence and divergence. South Asia has an important place in various regions of the world as it is home to around 24 percent of world population and it is both the most populous and the most densely populated geographical region in the world. The current territories of Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, India, Pakistan, and Sri Lanka form the countries of South Asia. In recent periods South Asia has been second largest growing region of the world but it is home to the largest number of people living amid poverty with widespread under-nutrition and other health related degradations. The present paper analysed inter-country disparities in the south Asian countries. The aim is to study the trends in various indicators of social and economic development with a view to identify the possible impacts of these divergences and convergences. Theoretically, a divergence in poverty and poor social outcomes would indicate that poor regions are trapped in low-level equilibrium traps. The paper analyses data obtained from World Bank data indicators and estimated convergence and divergence trends in various indicators. The paper found high level of regional disparity derived on the basis of both nominal GDP and per capita GDP.

Keywords: regional disparities, south Asia, convergence hypothesis

1. Introduction
History of development and progress has seen divergence and convergence across regions both between countries and within the country throughout the history. The widespread regional disparity is an important economic and political issue. Many studies have studied the trends and patterns of regional convergence and divergence. South Asia has an important place in various regions of the world as it is home to around 24 percent of world population and it is both the most populous and the most densely populated geographical region in the world. While almost a quarter of the world's population lives in the region, South Asia accounts for only 3% of global gross domestic product (GDP), 1.9% of world exports, and 1.7% of world foreign direct investment (FDI). In recent periods South Asia has been second largest growing region of the world but it is home to the largest number of people living amid poverty with widespread under-nutrition and other health related degradations. Development in South Asia has been noticeably uneven (Chen and Ravallion 2006; Ghani and Ahmed 2009; Devarajan and Shah 2006) [1, 7, 4].

The present paper analyses inter-country disparities in the south Asian countries. The aim is to study the trends in various indicators of social and economic development with a view to identify the possible divergences and convergences in the indicators. Theoretically, a divergence in poverty and poor social outcomes would indicate that poor regions are trapped in low-level equilibrium traps. The paper examines data obtained from World Bank data indicators and estimated convergence and divergence trends in various indicators. The paper found high level of regional disparity derived on the basis of both nominal GDP and per capita GDP. The main objective of the paper is to understand the level of inter-country disparities and the trends in the disparities, that is, whether they are increasing or decreasing.

2. Methodology
The methodology adopted in the paper is to analyse whether variability in various indicator has decreased or during the period under study, that is, from 1980-2015. The data for the purpose have been extracted from the database of World Development Indicators. The idea of convergence in economics (catch-up effect) is the hypothesis that poorer economies' will tend to develop at faster rates than richer economies. As a result, all economies should eventually converge in social and economic indicators of development. In economic literature the term "convergence" can have two meanings: σ-convergence and β-convergence. When the dispersion of a development indicator (generally "income") across a group of economies falls over time, there is σ-convergence whereas when the partial correlation between growth in a development indicator over time and its initial level is negative, there is β-convergence. Present paper explores only for the evidences of sigma convergence in South Asian Countries. Sigma convergence has been extensively used for measuring convergence across group of countries (*see* Young *et. al* 2008; Iancu 2009; Rapacki & Próchniak 2009; Simionescu 2014; Mongelli *et. al.,* 2017; Pandya & Maind 2017; Kong *et. al* 2017 among others) [18, 8, 13 10, 9]. The paper analysed disparities pertaining to three broad areas: (i) Health (ii) Income and (iii) Education. Various indicators comprising each broad area are presented for the year 2015 to know the extent of current level of disparities in South Asian countries. After highlighting extent of current disparities, time series data for the period 1980-2015 is analysed by plotting them on

graphs. We calculated time series of coefficient of variation (CV) of each variable to know whether they are converging or diverging.

3. Level of Disparities in Development Indicators

South Asia is a land of sharp contrast and overwhelming disparities. It has more pronounced regional disparities than the rest of the world. In this paper, we attempted to look into the inter-country disparities in health, income and education using indicator based approach. In this section, we portray the current situation in the level of development among South Asian countries and inter-country difference among the nations of South Asia. In the following section, we would analyse, whether these differences are growing or shrinking.

3.1 Disparities in Health

The extent of disparities in various indicators of health is evidenced by the data presented in table 1. Since mortality is one the major goals of health improvements, we included mortality indicators such as Crude Death Rate (CDR), Infant Mortality Rate (IMR), Maternal Mortality Ratio (MMR). The data presented in the table shows large disparities in these indicators of health. The last row of the table showing ratio of lowest to highest figure of corresponding indicators depicts that MMR of Afghanistan is 13.2 times higher than that of Srilanka. It is well know that MMR is a general indicator of the overall health of a population and of the functioning of the health system. High MMR is a symbol of wider problems for health and health services. IMR ratio of best performer to worst performer is 8.96 times again indicating wide variation across countries in health service of the country. The infant mortality rate is not only seen as a measure of the risk of infant death but it is used more broadly as a crude indicator of: (a) community health status (b) poverty and socioeconomic status levels in a country and (c) availability and quality of health services and medical technology. Infant mortality in the South Asia remains high. Developed countries have an infant mortality rate of less than ten per 1000 live births. Sri Lanka and Maldives comes close to this target. Same trend can be seen in case of CDR and Life Time Risk of maternal death (LTR).

Table 1: Health Indicators South Asian Countries (2015)

	Maternal Mortality Rate[1]	Infant Mortality Rate[2]	Crude Death Rate[3]	Life Time Risk[4]	Health Expen -diture[5]	Life Expec-tancy	Under Nutrition[6]
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Afghanistan (AFG)	396	66.3	8.23	1.926	8.18	60.4	26.8
Bangladesh (BGD)	176	30.7	5.40	0.421	2.82	71.6	16.4
Bhutan (BTN)	148	27.2	6.23	0.325	3.57	69.5	n.a
India (IND)	174	37.9	7.34	0.453	4.69	68.0	15.2
Maldives (MDV)	68	07.4	3.76	0.167	13.73	76.8	5.2
Nepal (NPL)	258	29.4	6.39	0.648	5.80	69.6	7.8
Pakistan (PAK)	178	65.8	7.41	0.693	2.61	66.2	22.0
Sri Lanka (LKA)	30	8.4	6.76	0.063	3.50	74.8	22.0
Highest to lowest Ratio	*13.2*	*8.96*	*2.19*	*30.5*	*5.26*	*1.27*	*5.15*

Source: Data extracted from the World Development Indicators (online database)

Note: n.a. – data not available.

1. Maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births.
2. Infant mortality rate is the number of male infants dying before reaching one year of age, per 1,000 male live births in a given year.
3. Crude death rate indicates the number of deaths occurring during the year, per 1,000 population estimated at midyear.
4. LTR - Life time risk of maternal death is the probability that a 15-year-old female will die eventually from a maternal cause assuming that current levels of fertility and mortality (including maternal mortality) do not change in the future, taking into account competing causes of death.
5. Total health expenditure is the sum of public and private health expenditure. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation.
6. Population below minimum level of dietary energy consumption (also referred to as prevalence of undernourishment) shows the percentage of the population whose food intake is insufficient to meet dietary energy requirements continuously.

Large scale disparities in health can also be seen in health related expenditure in a country. Column 6 of table 1 shows that expenditure on health services as percent of GDP has been lowest in Pakistan and highest in Maldives. The life expectancy across countries is another measure which reflected health status as well as general level of development in a country. Column 7 of the table again shows a significant difference of 16.4 years in life expectancy. The differences in the life expectancy across the member countries reflect the variations in the levels of social and economic development among these countries. The prevalence of undernourishment indicator also shows that there are large inter-country differentials in nutritional status of population. The wide dispersion in prevalence of undernourishment is indicated by highest to lowest ratio of 5.15 of this indicator.

3.2 Disparities in Income and Related Aggregates

The size of economy of South Asian countries measured by their GDP reveals that South Asian economies are dominated by India which constitutes 82.3 of their combined GDP followed by Pakistan (7.7 percent) and Bangladesh (5.6 percent). The appropriate indicator of income disparities is per capita income and on this indicator also we found significant disparities in the level of per capita real GDP (hereafter PCGDP) as the PCGDP of Maldives is 11.65 times higher than Afghanistan.

Table 2: Indicators of Income Disparities in South Asian Countries (2015)

	GDP (constant 2010 billion US$)	PC GDP constant 2010 US$	GDP growth rate 2003-15	PCGDP growth rate 2003-15	GFCF (% of GDP)	Share of Services in GDP	Share of Manuf. in GDP	Trade (% of GDP)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Afghanistan (AFG)	20.2	620	7.5	4.2	19.8	55.0	12.0	57.0
Bangladesh (BGD)	156.6	973	6.0	4.7	28.9	56.4	17.6	42.1
Bhutan (BTN)	2.1	2668	7.4	5.3	54.3	39.4	8.3	92.9
India (IND)	2295.2	1751	7.6	6.1	29.3	53.2	16.2	42.4
Maldives (MDV)	3.0	7222	6.8	4.2	n.a	73.7	5.1	171.2
Nepal (NPL)	19.7	690	4.3	3.1	27.8	51.6	6.3	53.3
Pakistan (PAK)	215.9	1143	4.4	2.3	13.9	54.9	13.4	27.6
Sri Lanka (LKA)	76.3	3638	6.2	5.3	26.5	60.6	19.5	48.5
Highest to lowest Ratio	1093	11.65	1.76	2.65	3.91	1.87	3.82	6.20

Source: Data extracted from the World Development Indicators (online database)
Note: GDP – Constant GDP in billions at US PCGDP- Per capita GDP in US$ at 2010 constant prices

Not only there are disparities in the level of GDP but there are marked disparities in growth rates of GDP and PCGDP. India achieved highest rate of growth in the period 2003-15 both in GDP and PCGDP. The structure of South Asian Economy has significant variations as the contribution of service in national GDP ranges from 73.7 percent for Maldives to 39.4 percent for Bhutan. Similarly contribution of manufacturing has ranged from 5.1 percent to 19.5 percent. The level of integration of South Asian countries also shows significant variation as the size of trade in comparison to the nations' GDP has varied significantly from a high of 171.2 percent to a low of 27.6 percent. Ghani (2010) opined that pro-growth policies, initiated in early 1980s accelerated South Asia's real gross domestic product (GDP) growth rate to 5.3 per cent per year (1980–2000) from 3.7 per cent per year (1960–80). Growth accelerated further to 7 per cent per year during the period 2000–8. Data presented in table 2 indicate that India has been leading South Asia in the rate of growth of both GDP and PCGDP.

Table 3: Indicators of Development Disparities in South Asian Countries (2015)

	Unemployment rate (%)	Urbanization (% of population living in cities)	Access to Electricity (%)	Per Capita Electricity Consumption (Kwh)	Bank Branches (Per 100,000 Adults	Internet Users (per 100 of Population)	Per Capita health expenditure (current US$	Employment in Agriculture (% of total employment)	Age dependency ratio (% of working-age pop.)	Account at a financial institution (% age 15+)	Population growth (annual %)
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
Afghanistan (AFG)	9.1	26.7	43.0	n.a	2.3	8.3	56.6	n.a	87.0	10.0	2.8
Bangladesh (BGD)	4.3	34.3	59.6	293.0	8.4	14.4	30.8	47.2	52.5	29.1	1.2
Bhutan (BTN)	2.8	38.6	75.6	n.a	15.4	39.8	88.8	56.3	46.9	33.7	1.3
India (IND)	3.6	32.8	78.7	765.0	13.5	26.0	75.0	49.7	52.4	52.8	1.2
Maldives (MDV)	11.6	45.5	100.0	n.a	12.1	54.5	1165	13.5	47.4	n.a	2.0
Nepal (NPL)	2.7	18.6	76.3	128.1	8.9	17.6	39.9	66.5	61.8	33.8	1.2
Pakistan (PAK)	5.2	38.8	93.6	450.0	10.0	18.0	36.2	43.7	65.3	8.7	2.1
Sri Lanka (LKA)	4.6	18.4	88.7	525.9	18.6	30.0	127.3	31.5	51.2	82.7	0.9
Highest to lowest Ratio	4.30	2.47	2.33	4.11	8.09	6.57	37.82	4.93	1.86	8.27	3.11

Source: Data extracted from the World Development Indicators (online database)
Note: n.a – not available

Data presented in table 3 depicts significant variation in the level of urbanization. It ranges from 45.5 percent to 18.4 percent. Urbanization is usually considered as an indicator of development. The rates of urbanization are low in several South Asian countries. As evidenced from last row of the table there are significant differences in indicators of development such as access to electricity, per capita electricity consumption, bank branches per 100,000 adults, internet users per 100 of population, per capita health expenditure, age dependency ratio, accounts in financial institutions, employment in agriculture and population growth. The occupational structure differed significantly as persons employed in agriculture ranges from 66.5 percent (Nepal) to 13.5 percent (Maldives). A vast difference was observed in per capita health expenditure as health expenditure of Maldives is 37.82 times of the corresponding figures of Bangladesh.

3.3 Disparities in Education

Education is fundamental to economic development of any country and is building block of human capital. No country

can achieve sustainable economic development without substantial investment in human capital. Education raises people's productivity and creativity and promotes entrepreneurship and technological advances (Ozturk 2001) [11]. Literacy is a fundamental requirement for participating in society. The data presented in table 4 reveals that South Asian countries have wide difference in adult literacy rates, ranging from near universal literacy rate of 99.3 percent to a very low literacy rate of 38.2 percent. The ratio of highest to lowest values for adult literacy is 2.60. The difference in female adult literacy rate is more apparent as the ratio of highest to lowest is significantly higher to 4.14 percent. The differences in education inclusiveness is also indicated by Gross Enrollment Ratio (GER) which specify the general level of participation in a given level of education. Gross enrollment ratio is the ratio of total enrollment to the population of the age group that officially corresponds to the level of education. The GER is low for all South Asian countries and there are considerable variations across countries especially in case of higher education. The student-teacher ratio in South Asian countries is also low with sizeable variations across countries. Education being a merit good requires considerable government efforts both at the level of policy and at the level of budgetary allocation. Results presented in column 5 reveals significant variation in general government expenditure on education (current, capital, and transfers) expressed as a percentage of GDP. It includes expenditure funded by transfers from international sources to government. General government usually refers to local, regional and central governments. The figures presented in column 5 depicting government expenditure in education as percentage of total government expenditure also underline the difference in budgetary allocation on education among South Asian countries.

Table 4: Indicators of Health in South Asian Countries (2015)

	Adult literacy rate			**Govt Exp. on Edn. as percentage of**		**Pupil-Teacher Ratio**			**Gross Enrollment Ratio**		
	Total	**Male**	**Female**	**GDP**	**Govt. Exp**	**Primary**	**Sec.**	**Higher**	**Primary**	**Sec.**	**Higher**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Afghanistan (AFG)	38.2	51.5	23.9	4.80	18.40	44.3	30.7	23.9	112	55.7	8.7
Bangladesh (BGD)	61.5	64.6	58.3	1.99	13.82	38.9	33.2	22.9	112	58.3	13.4
Bhutan (BTN)	63.9	71.1	55.1	5.90	17.82	26.7	10.6	7.8	102	84.2	10.9
India (IND)	72.2	80.9	63.0	3.83	14.10	32.2	32.1	21.6	111	69.2	23.9
Maldives (MDV)	99.3	99.8	98.9	5.21	15.30	12.0	8.3	n.a	108	70.8	12.7
Nepal (NPL)	64.7	75.8	54.8	4.72	22.09	23.9	21.9	60.1	135	67.2	15.8
Pakistan (PAK)	56.4	69.6	42.7	2.47	11.30	46.5	21.7	22.0	94	41.6	10.4
Sri Lanka (LKA)	92.6	93.6	91.7	1.62	9.81	23.7	18.1	45.2	101	99.9	20.7
Highest to lowest Ratio	2.60	1.94	4.14	3.64	2.25	3.88	4.00	7.71	1.44	2.40	2.75

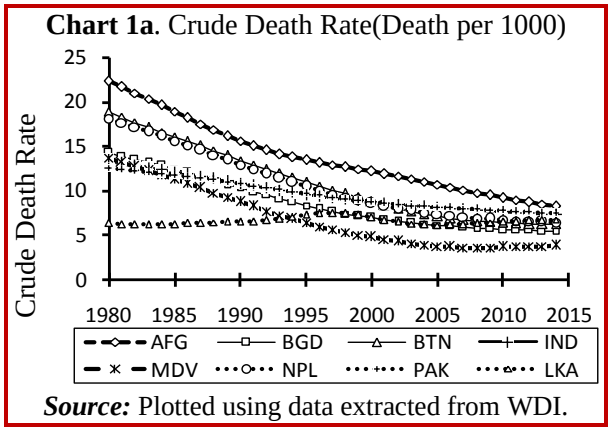
Source: Data extracted from the World Development Indicators (online database)
Note: na – not available

4. Testing Convergence/Divergence in Select Indicators

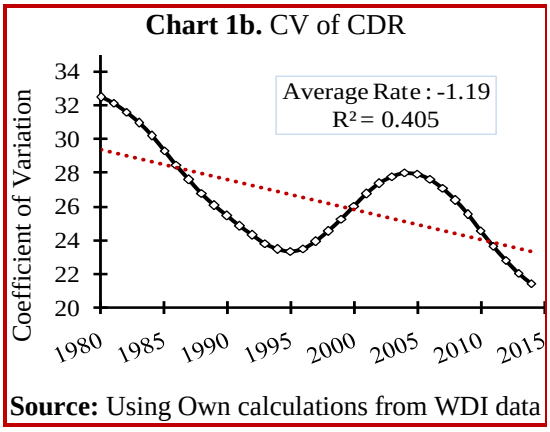
The preceding section described the current situation in the level of development in South Asian countries and inter-country difference among the nations. In this section, we would analyse, whether these differences are growing or shrinking over time. Due to data constraints, the paper would test for convergences in selected indicators only. The concept of sigma convergence is used to examine the behavior of cross-sectional CV of per capita GDPs over time. A reduction in the cross sectional CV of GDPs over time is interpreted as evidence of convergence. The methodology for testing would be twofold: firstly, we would look into the graphs of the variable for the time under consideration and secondly, we would compute the coefficient of variation for each year, and plot them adding trend line. The slop of trend line would be used to infer whether the countries are diverging or converging on the selected indicator.

4.1 Testing Convergence in Health

The paper applies concept of σ-convergence using the coefficient of variation as the indicator of disparity and the results are shown in accompany charts. Convergence occurs when the slacker finally catch up with the leaders and ultimately closes the initial gap. Chart-1a displays trends in crude death rate of the eight South Asian countries since the early eighties. It is evident from the chart-1a and chart-1b that South Asian countries have experienced catch-up effect but the speed of convergence is slow. Convergence in CDR clearly indicates that the countries have been able to reduce disparities in health facilities and this was possible due to substantial reduction in CDR by Afghanistan.



Source: Plotted using data extracted from WDI.



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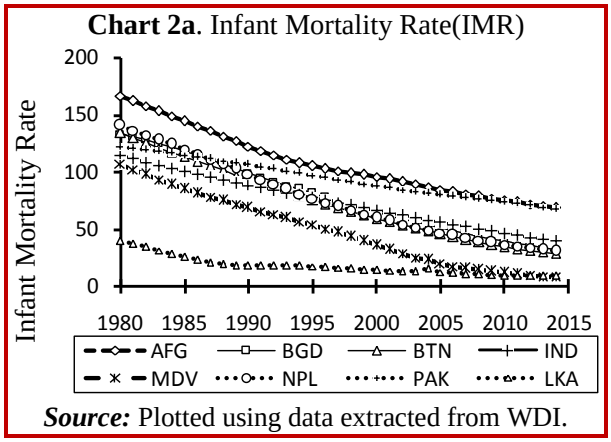

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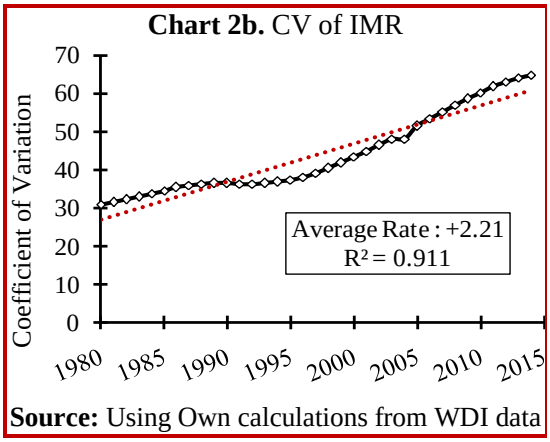

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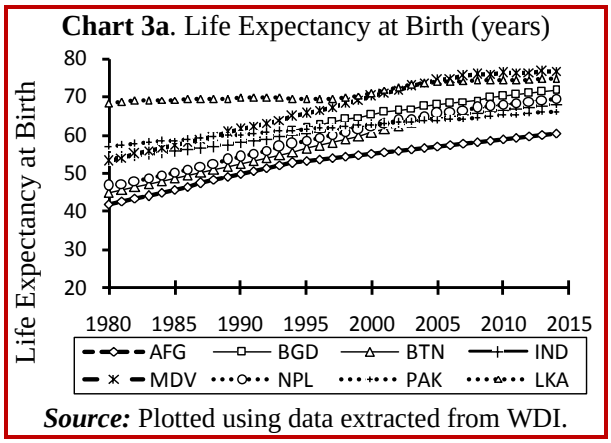

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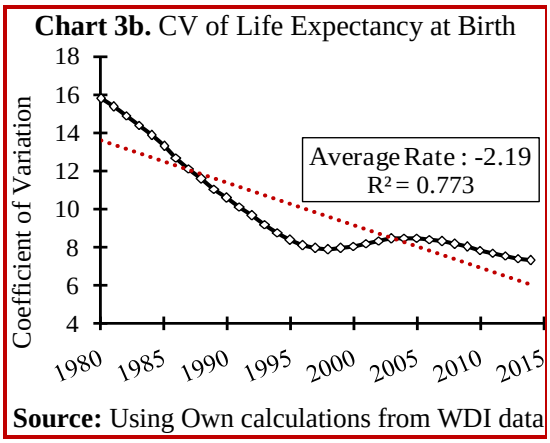


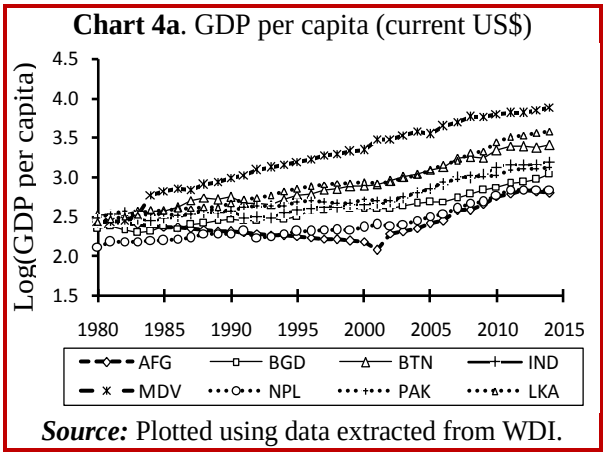
Source: Using Own calculations from WDI data

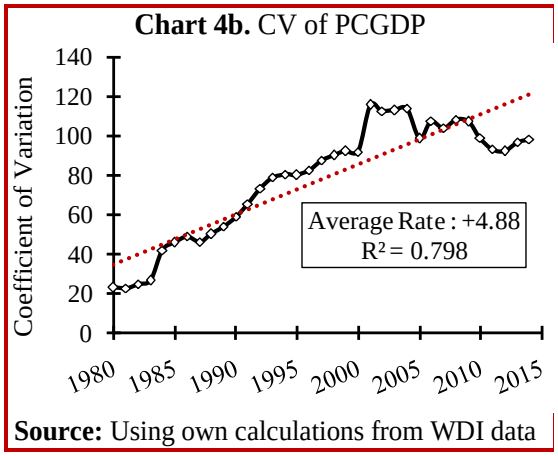
Fig 1

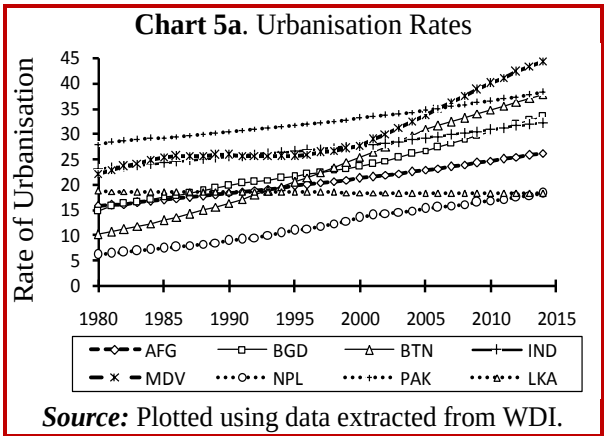
A cursory look at chart-2a may suggest convergence in IMR but chart-2b clearly shows that IMR related disparities have increased in South Asian countries for the period under study. This is due to the reason that leaders have been able to reduce IMR more than the laggards. Maldives has shown significant reduction in infant mortality rate over the time. For the rest of the countries, the number remains high, again reflecting the low level of Human Development Indicator (HDI) of the countries. High infant mortality rates signal inadequate primary health services. Due to the impact of significant reduction in CDR and IMR, the life expectancy at birth has experienced significant increase. Chart-3a and 3b clearly indicates the convergence in life expectancy at birth and speed of convergence has been particularly more from 1980 to 1998. The convergence in life expectancy at birth conforms to the general trend in life longevity as the difference in life expectancy across the globe has fallen dramatically (Wilson 2001) [16].

4.2 Testing Convergence in Income

The paper computed the coefficient of variation (CV) of the log of per capita income over time to see whether the dispersion increases or decreases to test the convergence in income in South Asian countries. The study found that disparities in per capita income of South Asian countries have increased as the CV of log of GDP per capita has increased significantly (chart-4a and 4b). We have sufficient empirical evidence to infer that no evidence of income convergence is found for the South Asian group of countries.







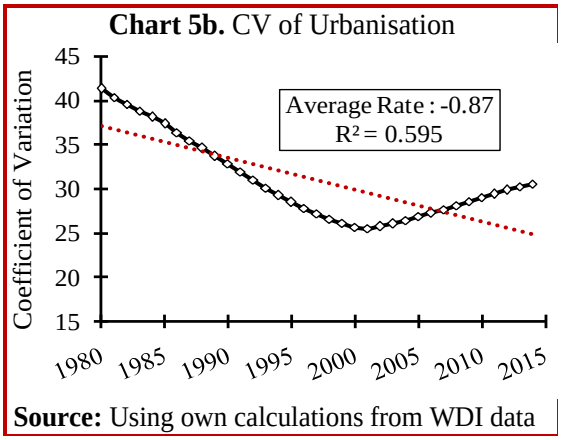
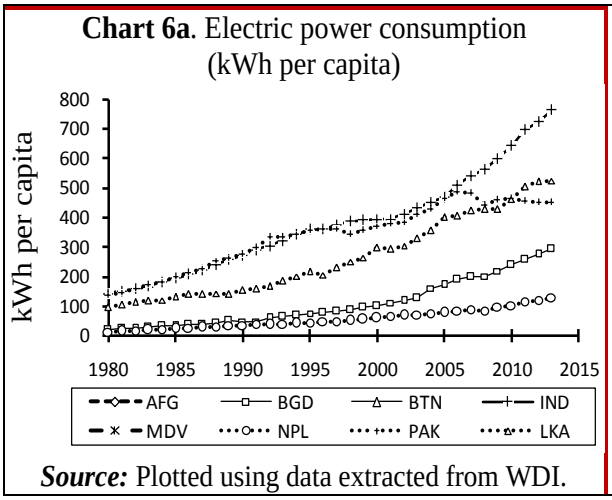


Fig 2

Rate of urbanisation is closely linked with economic development and growth. Urbanization provides South Asian countries with the potential to transform their economies. South Asia can gain from urbanization by nurturing productivity through the agglomerations in its towns and cities. Urbanization has been relatively slow in Afghanistan, India, Pakistan, and Sri Lanka; it has progressed much faster elsewhere, especially in the smaller countries of Bhutan and Maldives. The paper finds that the growth of urbanisation has been uneven in the South Asian countries (chart 5a) but the rate of urbanisation is converging *albeit* at a slow rate (Chart 5b).



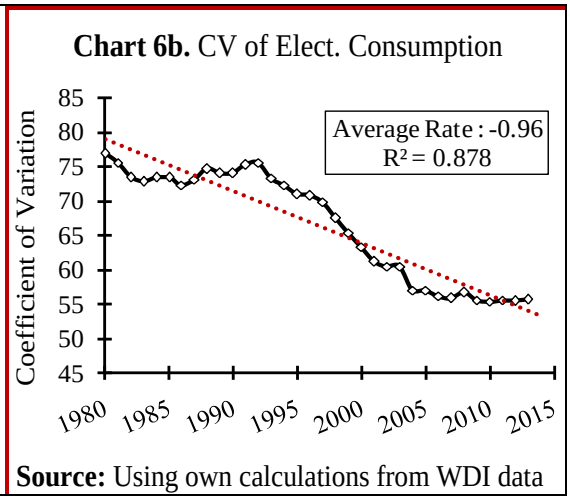
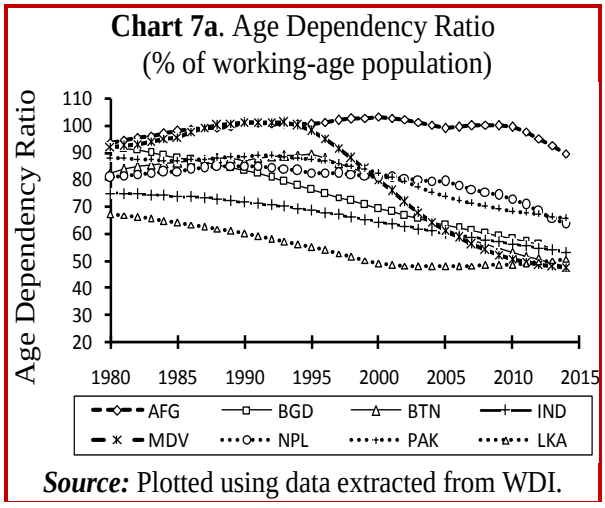


Fig 3

The paper also investigated convergence in electricity consumption per capita among South Asian countries as per capita electricity consumption is considered to be an alternative indicator of economic prosperity, growth and development. Chart-6a shows that electricity consumption per capita has increased significantly for all the countries but we don't find evidence of catch-up in per capita electricity consumption (chart-6b).



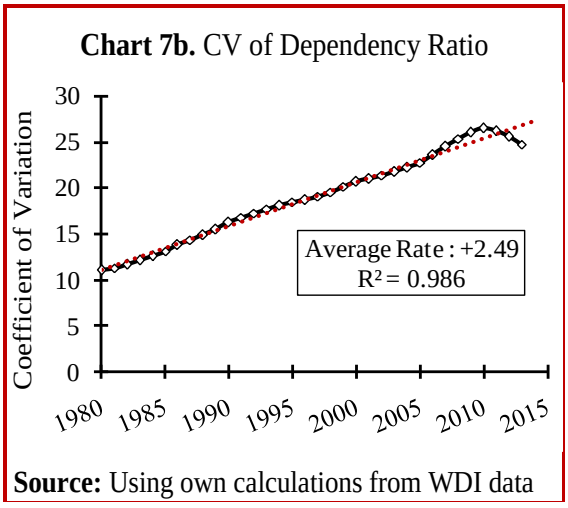
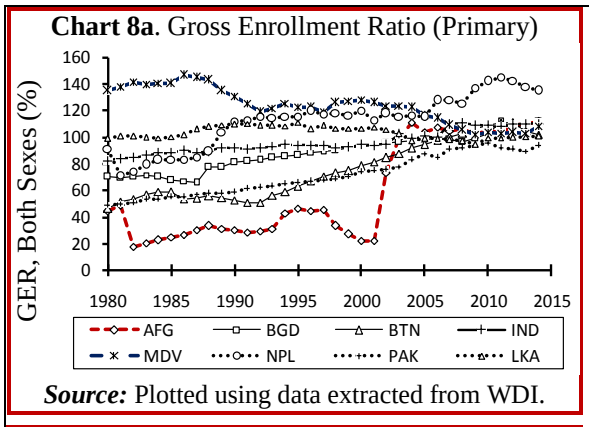


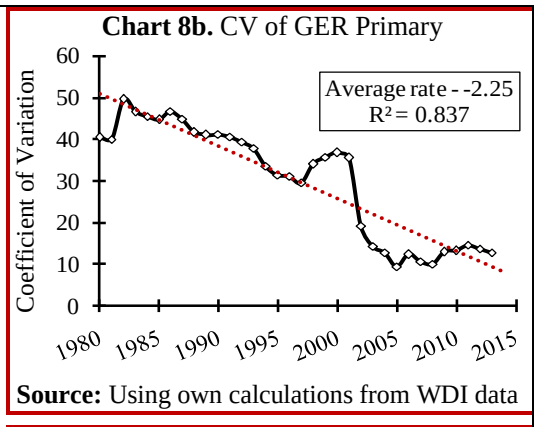
Fig 4

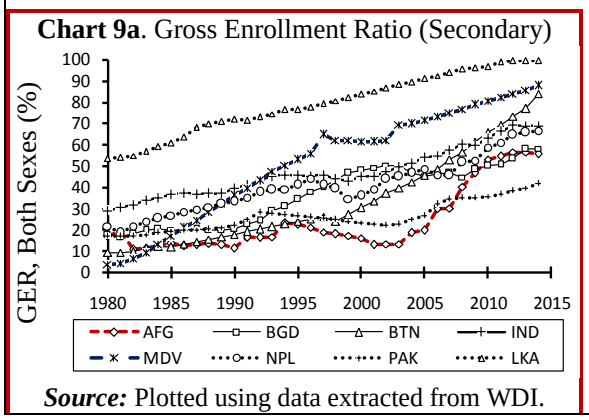
Dependency ratios indicate the potential effects of changes in population age structures for social and economic development, pointing out broad trends in social support needs. Age dependency ratio is the ratio of dependents people younger than 15 years or older than 64 years to the working-age population (15-64 years). Data are shown as the proportion of dependents per 100 working-age population. As evidenced by the charts (7a&7b), the age dependency ratio in South Asian countries has shown diverging trends indicating increasing disparities in age structure of population in these countries.

4.3 Disparities in Education

Countries in South Asia have achieved impressive progress towards the goal of education for all. Between 1999 and 2010 the South and West Asia region has achieved significant success in halving its number of out-of-school children (UNESCO, 2010a). Most countries in South Asia recorded an increase in the gross enrolment ratio (GER) in primary education, as shown in chart-8a but participation in primary education varied substantially within South Asia. As depicted in the chart, the GER for the Maldives dropped during the period but this represents an improvement as children are moving to schools at the designated age. Both chart-8a and 8b indicates that disparities in access to primary education have decreased among the nations.







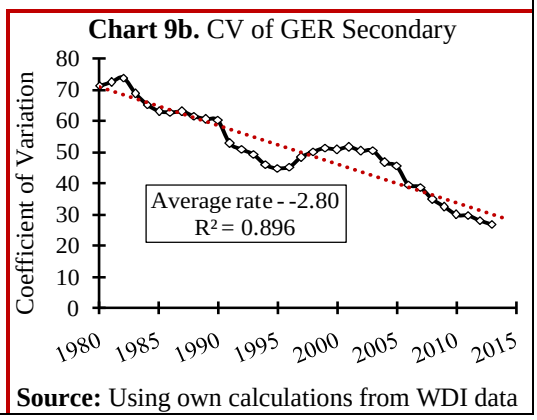


Fig 5

Across South Asia, enrolments in secondary education are much lower than in the primary level, as shown in chart-9a, which depicts the GER for secondary education. The gross enrolment ratio has increased significantly in all South Asian countries and we found presence of sigma convergence in GER for secondary education. The trends in GER for primary and secondary classes explicitly points to the reduction in disparities for the period under study.

5. Conclusions

This paper investigated whether the 08 South Asian countries converge or diverge on various socio-economic indicators with a view to assess level of disparities among these countries. Using sigma convergence criteria, paper found that though there is convergence in many indicators of health and education but many indicators of income and development presence of diverging over time. Specifically, the paper finds convergence in CDR, life expectancy, rate of urbanisation, per capita electricity consumption, rate of population growth and GER for primary and secondary classes. The paper finds the evidence of divergence in infant mortality rate, per capita gross domestic product and age dependency ratio. Over all, it is clear from the analysis that there are considerable disparities in socio-economic indicators of South Asian countries but these disparities are reducing with passage of time on most of the indicators but income disparities are rising with time.

6. References

1. Chen S, Ravallion M. *The developing world is poorer than we thought, but no less successful in the fight against poverty* (No. 4703). The World Bank, 2008.
2. Chowdhury MK. Convergence of Per Capita GDP in South Asia. International Journal of Applied Business and Economic Research. 2005; 3(2):133-150.
3. De P, Halder II. Inequality in Asia: Convergence and Determinants. ARTNeT Working Paper Series No. Bangkok, ESCAP. 2016, 158.
4. Devarajan S, Shah S. *Can South Asia End Poverty in a Generation*. Washington, D.C.: World Bank, 2006.
5. Ghani E. Development disparities and peculiarities' in Ghani, E. (ed.) '*The poor half billion in south Asia: what is holding back lagging regions*. Oxford University Press, chapter. 2010; 1:29-63.
6. Ghani E. *The Poor Half Billion in South Asia: What is holding Back Lagging Regions?* Oxford University Press, 2010.
7. Ghani E, Ahmed S. *Accelerating Growth and Job Creation in South Asia.* New Delhi: Oxford University Press, 2009.
8. Iancu A. *Real economic convergence* (No. 090104). Working Papers of National Institute of Economic Research, Romanian Academy, 2009.
9. Kong J, Phillips PC, Sul D. Weak σ% Convergence: Theory and Applications. Cowles Foundation Discussion. 2017, 2072.
10. Mongelli FP, Papadopoulos G, Reinhold E. Are Euro Area Economic Structures Changing?. In *The Euro and the Crisis*. Springer International Publishing. 2017, 47-72.
11. Ozturk I. *The role of education in economic development: a theoretical perspective*. University Library of Munich, Germany, 2001.
12. Pandya F, Maind S. Panel data analysis: convergence of Indian states with infrastructure. Journal of Social and Economic Development. 2017, 1-15.
13. Rapacki R, Próchniak M. Real beta and sigma convergence in 27 transition countries, 1990-2005. Post-Communist Economies. 2009; *21*(3):307-326.
14. Simionescu M. Testing sigma convergence across EU-28. Economics & Sociology. 2014; *7*(1):48.
15. UNESCO. *Reaching the Marginalized. EFA Global Monitoring Report 2010: Regional Overview for South and West Asia*. Paris and Oxford: UNESCO and Oxford University Press, 2010.
16. Wilson C. On the Scale of Global Demographic Convergence 1950-2000. Population and Development Review. 2001; 27(1):155-171.
17. World Bank. World Development Indicators Database, 2016. Available *at* www.data.worldbank.org
18. Young AT, Higgins MJ, Levy D. Sigma convergence versus beta convergence: Evidence from US county-level data. Journal of Money, Credit and Banking. 2008; 40(5):1083-1093.