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## Polarizing World: GDP, Development and Beyond

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## Macroeconomic Policy and Development Division

### POLARIZING WORLD:

### GDP, DEVELOPMENT AND BEYOND

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# 1 INTRODUCTION

Long-term sustained growth increases the permanent income of the recipients – an income which would enable them to invest in enlarging their human capital and welfare. At the macro level, GDP growth generates more fiscal revenues, making the investment in the social sector and environment more viable in the long run. This approach brings the key role of public policymaking in welfare-enhancing mechanisms to the forefront. The ultimate development goal is to promote improvement of overall well-being measured by various aspects of welfare such as economic, social, and environmental.

Under the auspices of the United Nations, leaders and policymakers are now engaged in the challenging task of renewing and reorienting a global development agenda that is visionary in nature and owned by all. One of the key elements of this new agenda will be to transform the societal approach to the environment and transmit the benefits of increasing GDP growth in raising general prosperity for all. The United Nations post-development agenda aims to adopt a wide-ranging and transformational new development paradigm in 2015.<sup>1</sup> This new agenda is expected to prepare countries in steering development transformation and address increasing social and economic gaps to improve living standards.

The global development discourse has lingering key questions. For example, how can an economy or society can improve its citizens' overall social welfare in the absence of sustained and inclusive economic growth? Does rapid economic growth necessarily lead to ultimate improvements of various sustainable development indicators? Given the current global and regional economic growth variations, especially since the Great Recession of 2007-2008, these questions are becoming increasingly critical as government fiscal space is limited and a trade-off may be needed between spending on inclusive growth enhancement and creating national capabilities for sustainable development. Testing these two competing hypotheses is an empirical question that this paper will seek to answer through the analysis of GDP per capital vis-à-vis a set of development indicators. Development theory contends that disparities within a country hinder future economic growth and sustainability of development. The analysis shows that social progress has not kept up with robust and dynamic economic growth, and this is likely to create an unsustainable model of growth in the majority of countries in all regions

The different development paths adopted by countries provides a good opportunity to examine the trade-offs of GDP growth and development dynamics. Since the beginning of the current phase of globalization and the adoption of economic reforms in various countries since early 1990, the GDP per capita has grown rapidly in various parts of the world, often at similar speeds. Subsequently, these growth-enhancing policies have led to significant growth outcomes in the countries that engineered an episode of dramatic poverty reduction.<sup>2</sup> However, as the economy grows, so has inequality in healthcare and in educational opportunities across countries and among different social groups. And, more importantly, the marginal effects of this income growth have also fallen sharply across countries in different regions. Although some countries have attached great importance on providing social welfare services to the poor, the policy

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<sup>1</sup> A universal set of 17 proposed sustainable development goals (SDGs) with 169 associated targets as contained in the Report of the Open Working Group on Sustainable Development Goals. The Report is available at [www.un.org/ga/search/view\\_doc.asp?symbol=A/68/L.61&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/68/L.61&Lang=E).

<sup>2</sup> For further discussion, the Millennium Development Goals Report 2014 provides comprehensive picture of the global and regional levels of achievements in 8 MDGs since 1990. The report is available at <http://www.un.org/millenniumgoals/2014%20MDG%20report/MDG%202014%20English%20web.pdf>

outcomes on sustainable development indicators are in no way uniform. In some instances both growth and social protection policies may have contributed to improvements in national welfare over the past two decades in many countries around the world, but the results are still very much uneven.

Over the past decade, in many regions, experience shows that dynamic growth is often associated with an increasing income and social inequality. With the exception of several developing regions, developed countries have particularly witnessed a persistent rise in income differences between the ultra-rich and the rest. For examples, in the United States of America, the average income of the top 5 per cent increased at an annual rate of 1.5 per cent between 1980 and 2011, while the growth rate of the income of the top 0.1 per cent was 4.0 per cent. In contrast, the average real income of the bottom 99 per cent of income-earners grew at an annual rate of only 0.6 per cent between 1976 and 2007, which implies that the top 1 per cent captured 58 per cent of income growth.<sup>3</sup>

So, some of the traditional thinking on growth via-a-vis welfare enhancing social progress has come under scrutiny in recent years. Following the trickle-down growth approach, countries would expect rising incomes to yield a reduction in the income inequality between countries. As developing countries grow and accumulate their wealth faster, a global income convergence should be met with a convergence along the other aspects of development. According to the Commission on the Measurement of Economic Performance and Social Progress (2009), “time is ripe for our measurement system to shift emphasis from measuring economic production to measuring people’s well-being. And measures of well-being should be put in a context of sustainability”.<sup>4</sup> The increased national wealth does not equate to higher levels of people’s well-being. Incomes might rise, but social inequality tends to grow.

Figure 1 presents the fact that income levels have converged as the developing countries has seen much faster GDP per capita (denoted as GDPpc) growth than the developed countries. Since the year 2000, the developing countries have had strong GDPpc growth which has far outpaced the growth level of the developed countries. However, Income based convergence does not reflect the corresponding impact on social progress. Although one would expect that these large gains in income would signify a proportionally large investment in social capital, the dashed lines in Figure 1 show that is not the case over the past three decades.<sup>5</sup> In particular, since 2000 there has been a very large increase in GDPpc in the developing countries, yet the developing countries’ index of human capital per capital (IHCpc) level has not dramatically pulled away from the developed countries’ level.

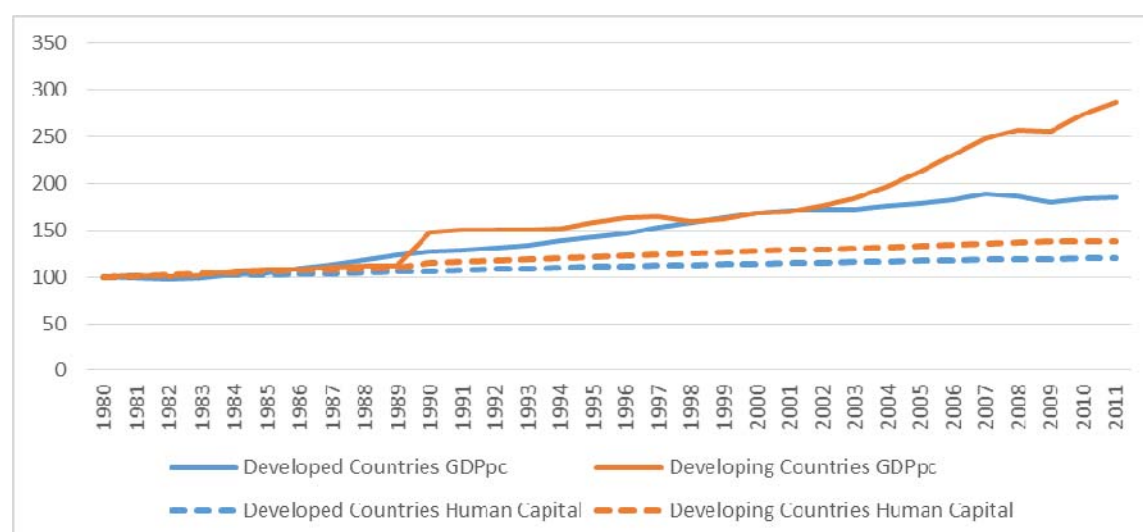
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<sup>3</sup> World Economic and Social Survey 2014: Reducing Inequality for Sustainable Development. Available at <http://www.un.org/en/development/desa/policy/wess/>

<sup>4</sup> The Commission on the Measurement of Economic Performance and Social Progress was created by President Sarkozy of France in 2008 to identify the limits of GDP as an indicator of economic performance and social progress, including the problems with its measurement; to consider what additional information might be required for the production of more relevant indicators of social progress; to assess the feasibility of alternative measurement tools; and to discuss how to present the statistical information in an appropriate way. The report is available at <http://www.stiglitz-sen-fitoussi.fr/en/index.htm>

<sup>5</sup> According to the Penn data, human capital is defined as “an index of human capital per person, which is related the average years of schooling and the return to education”. Index of human capital per person, based on years of schooling (Barro/Lee, 2012) and returns to education (Psacharopoulos, 1994). More information is available at <http://data-planet.libguides.com/PennWorldTables>.

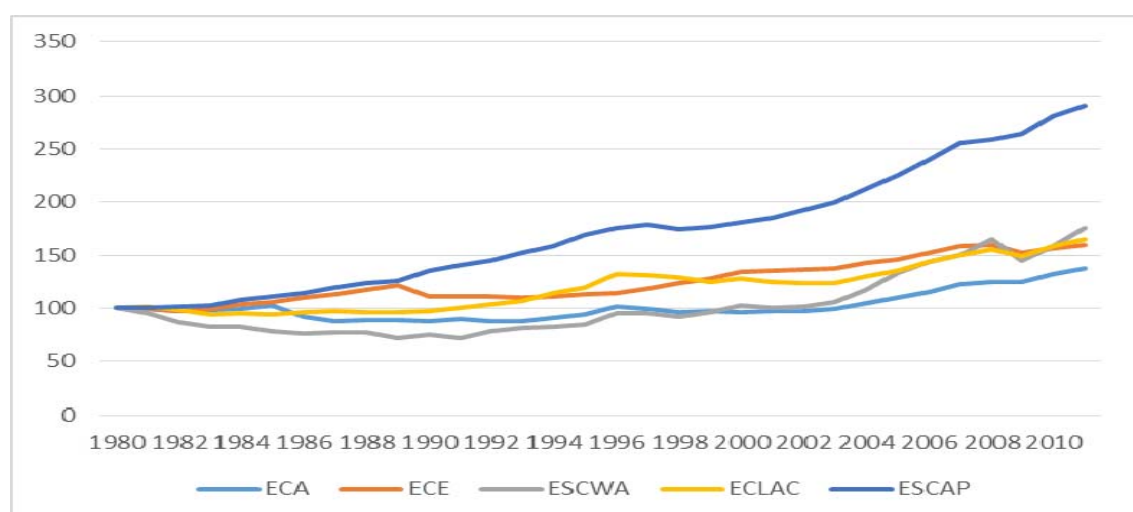
**Figure 1.1.** GDP per capita, PPP (constant 2005 international dollars) and Index of Human Capital per capita trends in Developing and Developed Countries, 1980-2011(1980=100).



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

By analyzing the data at the regional level, the evidence shows that there is also a clear income per capita convergence among the different regions of the world. For example, Figure 1.2 compares the income per capita of the five UN regional classifications in appendix (see annex table 1). The GDPpc of the ESCAP region far outpaces that of any other region. By 2010, the ECA was the only region that fell behind the ECE, the most developed region. This trend further points to a global income per capita convergence.

**Figure 1.2.** GDP per capita, PPP (constant 2005 international dollars) trends in UN regional grouping, 1980-2011 (1980=100)



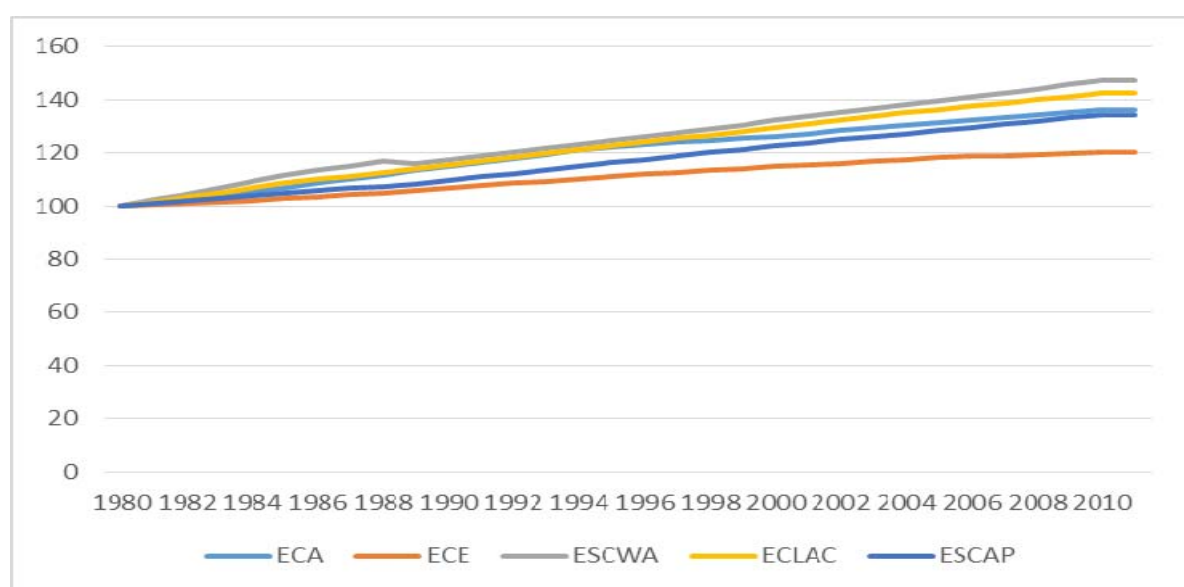
Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

Note: Each Gini is calculated as Region vs Rest of World. The groups are the following: ESCAP (Economic and Social Commission for Asia and the Pacific), ECE (Economic Commission for Europe), ECA (Economic Commission for Africa), ESCWA (Economic and Social Commission for Western Asia), and ECLAC (Economic Commission for Latin America and the Caribbean).



Switching away from GDPpc, the IHCpc trend is alarming. In Figure 1.3 the ESCAP region, which had far outpaced every other region in terms of GDPpc growth, lags behind every other region except for ECE for IHCpc growth. These regions have had half the GDP per capita growth as ESCAP, yet eclipse ESCAP in terms of social development. The gains from economic growth in the ESCAP region are not properly reinvested, as the IHCpc growth lags far behind GDPpc growth. The dynamic income growth of Asia and the Pacific has not translated into higher human capital growth. The impact of robust economic growth is absent in the growth of social capital.

**Figure 1.3.** Index of Human Capital per capita trends in UN regional groupings, 1980-2011 (1980=100)



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

Hence, the essential rationale behind this paper is to understand disconnect between growth and social development performance. The aim of this paper is to address that puzzle of stagnant human capital development despite a strong economic growth over the past decades, and propose targeted public policy to ameliorate rising and persistent social inequality. Within the developing world, these phenomena occur both in the emerging countries and the least developed countries (LDCs).<sup>6</sup> To categorize the dimension of this inequality and its extent, this paper analyzes economic and social development indicators.

This analysis allows us to characterize a country's development progress over the period 1980-2011. The testable hypothesis of this paper is twofold:

- 1) *There has been a global convergence of developed and developing countries in terms of income per capita, yet the dynamic economic growth of developing countries has not trickled down in the form of gains in social development indicators. Furthermore at the*

<sup>6</sup> LDCs are defined as economies with low level of socio-economic development, and these countries are characterized by weak human and institutional capacities, low and unequally distributed income and scarcity of domestic financial resources. The current list of LDCs includes 48 countries (the newest member being South Sudan); 34 in Africa, 13 in Asia and the Pacific and 1 in Latin America. More information is available at <http://unohrrls.org/about-ldcs/>

*regional and subregional levels there is a large variance of outcomes, suggesting Governments have an active role to play in the people's well-being, and there cannot be a one-size-fits-all approach to convergence in social progress.*

- 2) *The world's least developed countries are falling further behind both in terms of income and social development convergence. The gap is increasing between the LDCs and both the other developing countries and the developed countries, an alarming trend that should be addressed with country-specific targeted policy recommendations.*

This paper is organized as follows: Section 2 provides some recent work on issues related to development and rising social inequality. It reviews the empirical literature's lack of social development and discusses the different methods used to assess its trend. Section 3 describes quantitative methods and the database analyzed in this paper. Section 4 presents the results from the analysis of income per capita, human capital and human development. Finally, this paper provides some concluding observations in section 5.

## **2 LITERATURE REVIEW**

Global income and social inequality has recently surged to the forefront of global development debate among the policymakers around the world, from Calcutta to Cancun, and from New York to Nanjing. For instance, income inequality in the United States between the top 1% and the rest, inequality in Europe between the central and the periphery countries, inequality in emerging Asia and the Pacific and LDCs, and between coastal regions and more isolated, rural and agricultural regions. The main difference in the policy dialogue between the United States, Europe, and Asia and the Pacific and other developing regions is that the Asia-Pacific region is still experiencing relatively steady economic growth, while in developed countries the lack of overall growth is what gives rise to the debate.

There is now little doubt that rising inequality has long-lasting impacts on a country's well-being. Inequality increases the poverty rate, it weakens the basis of economic growth, shrinks the middle class, and it affects institutions such as political stability, institutional stability, property rights, crime, violence, and the investment climate.<sup>7</sup>

However, a growing number of policymakers and commentators cast doubt on the quality of growth in Asia and the Pacific. There is little argument that growth naturally increases inequality, and the Asia and the Pacific dialogue has shifted from obtaining pure economic growth to obtaining an inclusive growth.<sup>8</sup>

The Social Progress Index (2015) report attempts to exclusively make use of social and environmental indicators to measure social progress directly, rather than utilize economic proxies. By excluding economic indicators, SPI can rigorously and systematically analyze the relationship between economic development (measured for example by GDP per capita) and social development. A major finding of the report is that richer countries tend to achieve higher

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<sup>7</sup> The UN SG Ban Ki Moon's message for the World Day of Social Justice is available at <http://www.un.org/sg/STATEMENTS/index.asp?nid=7470>

<sup>8</sup> ESCAP 2015 Survey provides a detailed discussion on this issue of inclusive growth in the Asia and the Pacific region.



social progress than poorer countries. Yet the results from individual countries and regions also suggest that this relationship is neither simple nor linear.<sup>9</sup>

A (2014) UN report highlighted that the inequality within countries increased markedly in recent decades. According to the report, the majority of the world's population lived in countries where inequality in 2010 was higher than it was in 1980.<sup>10</sup> Similarly, in another UN (2013) report, it was underscored that “to address inequality, countries need to generate inclusive growth. This means sharing the benefits of economic growth more equitably, in particular to increase the capabilities, opportunities, and incomes of households and groups which are consistently on the margins of economic, social and political life”.<sup>11</sup>

In the context of the Asia-Pacific region, the Asian Development Bank (2014) report highlighted the growing level of income inequality in the region.<sup>12</sup> The report noted that as a continent, Asia lagged far behind the OECD countries and even Latin America in terms of fiscal expenditure on health care, education, and social protection. The World Bank’s East Asia and Pacific Update noted in October 2013 that “Accelerating growth and poverty reduction depends critically on advancing structural reforms. Countries need to improve their investment climate and invest more in infrastructure, while making public investment more efficient.”

Evidence further suggests that a wide range of structural inequality affects Asia and the Pacific region. Beyond income, governments should be concerned with health and education outcomes. Hur (2015) noted that spending on public education and public health significantly alleviate income inequality in the Asia and the Pacific region, much more than the OECD countries. In addition, investments in health and education lead to more persistent growth than other investments.

In the paper entitled “Growth with Equity in East Asia?” Jomo K.S (2006) highlighted the growing inequality even before the global financial crisis of 2008-2009 split the divide wide open. The paper noted that “Northeast Asia has been distinctly more egalitarian than Southeast Asia, and recent economic liberalization has exacerbated inequality in the region.”<sup>13</sup>

To address the problem of inequality, fiscal policy in developed countries plays a much different role than in developing countries. Advanced economies have used fiscal policy to reduce income inequality both through expenditures and progressive taxation. According to Bastagli et al., developing countries are hindered by the overall lower levels of taxes and transfers. Furthermore, developing countries often suffer from universal social expenditures (such as energy subsidies) as opposed to targeted expenditures to improve outcomes among disadvantaged households. The consensus, both in advanced and developing countries, is that public spending has a much greater effect on reducing inequality than taxation. In particular education and health spending reduce inequality over time. Developing countries also suffer

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<sup>9</sup> The Social Progress Index score is an average across three dimensions: Basic Human Needs, Foundations of Wellbeing, and Opportunity. Each dimension is made up of four equally-weighted individual components scored on an objective scale from 0 to 100. Higher scores mean higher social progress, and lower the reverse. The report is available at <http://www.socialprogressimperative.org/data/spi>

<sup>10</sup> World Economic and Social Survey 2014: Reducing Inequality for Sustainable Development. Available at <http://www.un.org/en/development/desa/policy/wess/>

<sup>11</sup> UNDP (2013): Humanity Divided: Confronting inequality in Developing Countries. The report is available at [http://www.undp.org/content/dam/undp/library/Poverty%20Reduction/Inclusive%20development/Humanity%20Divided/HumanityDivided\\_overview.pdf](http://www.undp.org/content/dam/undp/library/Poverty%20Reduction/Inclusive%20development/Humanity%20Divided/HumanityDivided_overview.pdf)

<sup>12</sup> The report is available at <http://www.adb.org/publications/inequality-asia-and-pacific>

<sup>13</sup> The paper is available at [http://www.un.org/esa/desa/papers/2006/wp33\\_2006.pdf](http://www.un.org/esa/desa/papers/2006/wp33_2006.pdf)

from untaxable incomes. The Asia region is defined by its large informal sector, which operates outside of the scope of government services and affords its workers no direct benefits from the government (such as pension or unemployment benefits).

Public spending on infrastructure yields mixed results on fighting inequality. Generally, public gross fixed capital formation is used as a proxy for physical infrastructure and includes spending on transportation, sanitation, and communication. Winters (2014) notes that while infrastructure boasts growth, it can also increase inequality. The argument follows that infrastructure is designed and used by the wealthier in a country, and the poor are unable to take advantage of whatever new opportunities it provides. Under efficient regulation, infrastructure can have reaching impact. One study by Fan, Hazell, and Thorat (2000) reported that spending just 1 million RS (about US\$16,000) on rural roads in India brings 124 people out of poverty.

Another branch of development, benefit incidence, has frequently been used to assess the success of spending to reach the poorest households. Shen and Lee (2014) study the reach of education, health care, and pensions in 2009 in China to see who the spending actually assists. Unsurprisingly, except for primary and secondary education, which impacted all social and economic strata, all the public expenditures were narrowly targeted to specific socioeconomic groups. Generally, the majority of the benefits flowed towards the older demographic. Within that group, the pension system was further skewed towards high income. An interesting safety net is the large family support system in China, which keeps many rural Chinese from falling into dire poverty. However, with declining fertility rates, China must better target its public spending to avoid a widening income inequality in the near future.

This current discussion of Asia is a drastic departure from the original, and voluminous, literature documenting the rise of the East Asian economies. In 1993, the World Bank published “The East Asian Miracle” to discuss the “groundbreaking” template of Asian economic growth. The general consensus, following Kuznets (1955), held that economic growth in developing countries was associated with growing inequality. Yet at the time, the East Asian economies were growing at a rapid pace and inequality appeared to be shrinking: Stiglitz (1996) commented “There are reasons to believe that government policies that promoted greater equality contributed in no small measure to the remarkable growth of these countries.”

That branch of literature went on to search for other possible explanations of the “Miracle.” Acemoglu and Robinson (2002) attributed the “East Asian Miracle” to political factors. In particular, land reform in Asia in the decades before the growth allowed many more citizens to participate in this development. The downward portion of the Kuznets Curve (when inequality falls) is said to come about through social tension and political reform. This tension was said to be absent from Asia and the Pacific region because of the more equal starting point.

Looking back on the Miracle, nearly two decades after commentators called it a *development coup*, it is evident that these countries had many developmental flaws. After the 1997-1998 Asian Financial Crisis and the 2008-2009 Global Financial Crisis, the discussion turned to inequality as the poorest were the hardest hit and the slowest to recover. While personal incomes rose and poverty fell, income inequality was also rising. Krugman and Zin (2007) reported “This growing income inequality could be the pretext under which the rich or the top income group were able to engage in inappropriate and unsustainable economic activities as mentioned earlier, which brought about economic disaster and crisis later.” China embodies the development strategy of East Asia with Deng’s policy of “Let Some Get Rich First.” A large volume of academic papers commented on the polarization of China’s economy with FDI

flowing towards the industrialized cities and deepening the rural-urban divide.<sup>14</sup>

Aside from the issue of inter-country inequality, an important question is if this period of economic growth led to a global convergence of income levels. There are three main tools that economists have used to determine convergence. The first is *Inter-country Inequality* which puts an equal weight on each country, regardless of population. This method leads us to determine that inequality has risen. *International Inequality* gives a more accurate depiction of the global situation by putting a population weight on each country and the results indicate that income inequality has decreased. Finally, *Global Inequality* compares all incomes individually, which yields a near constant level of inequality since the 1980s.<sup>15</sup>

Looking at the literature to come, there will likely be many economists placing an emphasis on achieving inclusive growth. Many of these concerns were reflected in the United Nation's Millennium Development Goals as the goals included reducing child mortality, improving maternal health, and achieving universal primary education. East Asia has made a lot of progress towards achieving these goals, with China and India leading the pack.

The United Nations has proposed Sustainable Development Goals as part of the Post-2015 agenda. The focus on both economic and social objectives has been further amplified to include environmental objectives as well. They aim to address the importance of environmental and economic sustainability alongside economic and social objectives. More specifically, Goal 10 calls for policy measures to "reduce inequality within and among countries, it calls for a pattern in which the income growth of the bottom 40% of the population is higher than the national average."<sup>16</sup>

Unsustainable growth is one which depletes environmental resources for short term growth or does not equally spread the gains of growth among the population, thus halting the impetus of growth. While regions will continue to grow economically, governments have an obligation to ensure high-quality, inclusive growth for all its citizens.

### 3 METHODOLOGY AND DATA

In the analysis that follows, the paper constructs two measures of inequality: (i) Gini coefficient of inequality and (ii) a measure from the decomposable generalized entropy class (GE) of inequality measures (Shorrocks, 1980, 1984).

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<sup>14</sup> More analysis is available at [www.worldbank.org/content/dam/Worldbank/document/China-2030-complete.pdf](http://www.worldbank.org/content/dam/Worldbank/document/China-2030-complete.pdf), and <http://kanbur.aem.cornell.edu/papers/Halfcentury81.pdf>.

<sup>15</sup> An important caveat to this analysis is that despite the mixed results depending on the metric used, any sign of a reduction in inequality goes away when China and India are removed from the data. Some estimates have China and India representing almost 90% of the global reduction of the Gini coefficient by 2030. It is evident that there is growth in the developing world, and Southeast Asia is the main driver of that growth.

<sup>16</sup> United Nations, 2014a, p. 5.

### 3.1 Gini index

The paper use the following formula for calculating the Gini inequality coefficient:

$$Gini = \frac{\sum_{j=1}^N \sum_{k=1}^N |y_j - y_k| P_j P_k}{2\bar{Y} \left( \sum_{i=1}^N P_i \right)^2},$$

Where  $y_i$  is country's  $i$ 's relevant measure of GDP per capita (or indicator of interest), and  $P_i$  is country's  $i$ 's population.  $\bar{Y}$  is the total average GDPpc weighted by population:

$$\bar{Y} = \frac{\left( \sum_{i=1}^N y_i P_i \right)}{\sum_{i=1}^N P_i}.$$

The Gini will give a value between 0 and 1, with 0 signifying perfect equality and 1 signifying perfect inequality.

### 3.2 Polarization Index

The GE class of inequality measures allows inequality across groups to be broken down into within group inequality and between group inequality. In particular we will be analyzing the GE(1), also know as the Theil<sub>T</sub> index. In following with Kanbur and Zhang (2005), Basu, Fan and Zhang (2007), and Basu (2009), this paper constructs a Polarization Index (PI) of GDP per capita, PI of human capital per capita, and a PI of human development index and apply it to a subsection of different groups. The polarization index as the ratio of the between group inequality and total inequality (within group inequality + between group inequality).

### 3.3 Country groupings

This paper follows two broad groupings of countries, income based and regional based. The Income based groupings compare the following groups:

Developed Countries vs Developing Countries, and Developed Countries vs LDCs. In the analysis, LDCs are a subset of the developing countries.

The regional grouping is formed from the United Nations regional classification. In particular the paper uses classification as follows: ESCAP (Economic and Social Commission for Asia and the Pacific), ECE (Economic Commission for Europe), ECA (Economic Commission for Africa), ESCWA (Economic and Social Commission for Western Asia), and ECLAC (Economic Commission for Latin America and the Caribbean). The Commonwealth of Independent States (CIS), the countries that emerge from the collapse of the former Soviet Republic, do not appear in the data until the 1990s, and have all been moved into the ECE.

To get a sense of the global convergence among the developing countries, this paper also uses the regional classification dropping all the developed countries and removing the ECE region. This pins down the movement of the developing regions against each other, and gives a more accurate picture of the developing ESCAP region and other developing regions.

### 3.4 Data

The data used in this paper comes from the Penn World Table (PWT). This database provides time series economic indicators from national accounts for 167 countries. For this paper's purpose, thirty two years of data, from 1980 to 2011, are analyzed. The main indicators are the following: GDP per capita and Index of human capital per person. In addition, this paper also uses the UN's Human Development Index to incorporate a more comprehensive and widely used indicator for social and economic development across countries and regions.<sup>17</sup>

## 4 RESULTS

This section presents the quantitative results on the following variables: GDP per capita, index of Human Capital per capita and Human Development Index. In 4.1 this paper analyzes the Gini Index between the groupings to show the trends over the past three decades. In 4.2 the analysis moves to the polarization index, where the inequality within each group is highlighted.

### 4.1 Gini index analysis

The Gini index compares the inequality between the income-based groupings and between the regional groups.

#### 4.1.1 GDP per capita

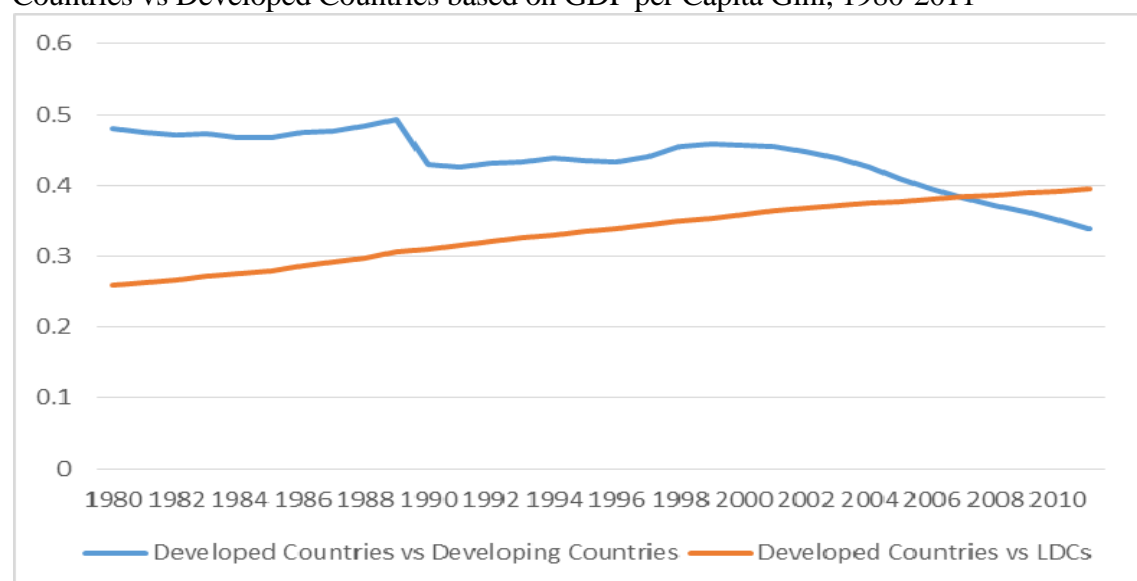
In Figure 1, it was evident that there should be convergence as the overall growth of GDP per capita has been much greater in developing regions than in the developed regions. In Figure 4.1, the Gini Index between developed and developing countries has steadily decreased over the past three decades with a large fall occurring since 2000. A falling Gini index suggests convergence between the two income-based groupings. Figure 4.1 also shows that while the developing region is catching up with the developed region, the LDCs are not converging. The gap between the LDCs and developed countries has only grown significantly since 1980.

Despite the pattern of global convergence, the LDCs are falling further behind both the developed countries and the remaining developing countries. This discrepancy within the developing group provides justification for the within-group analysis in section 4.2. Regional grouping predictably shows a convergence over same period.

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<sup>17</sup> More information about HDI and the datasets are available at <http://hdr.undp.org/en/content/human-development-index-hdi>

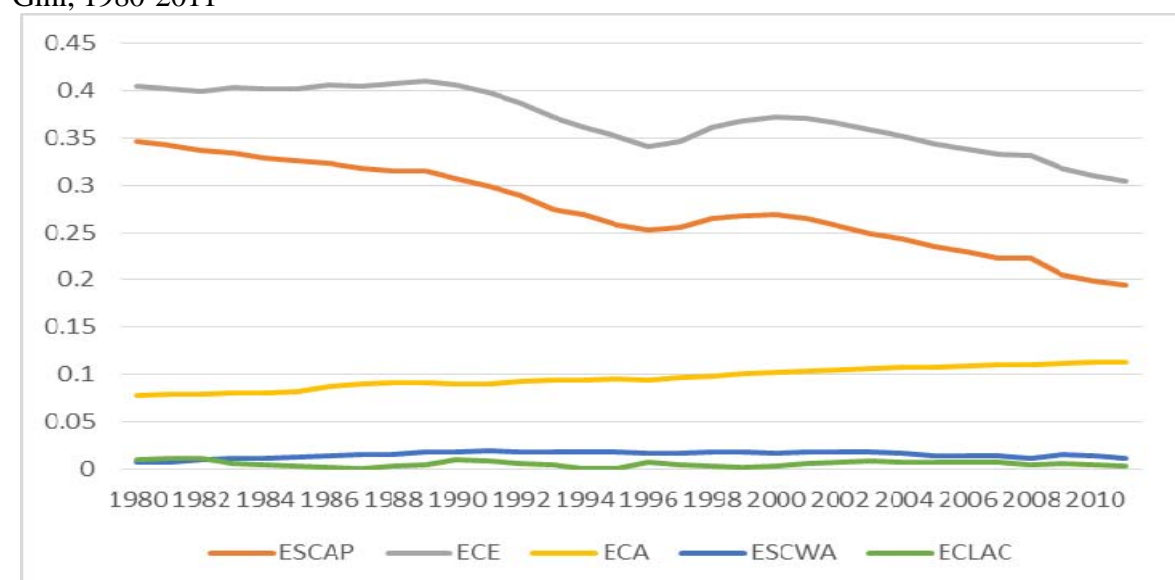
**Figure 4.1.** Income convergence in Developing vs Developed Countries and Least Developed Countries vs Developed Countries based on GDP per Capita Gini, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

The results in figure 4.2 present a large movement from Europe and Asia and the Pacific, signifying that the majority of gains were from Asia and the Pacific region catching up with the European region. The other regions did not make major movements towards convergence, as their Gini Index barely improved. The near-zero values of Latin America and Africa come from their relatively small share of the global population, both at less than 9%.

**Figure 4.2.** Income convergence between UN regional groupings based on GDP per Capita Gini, 1980-2011



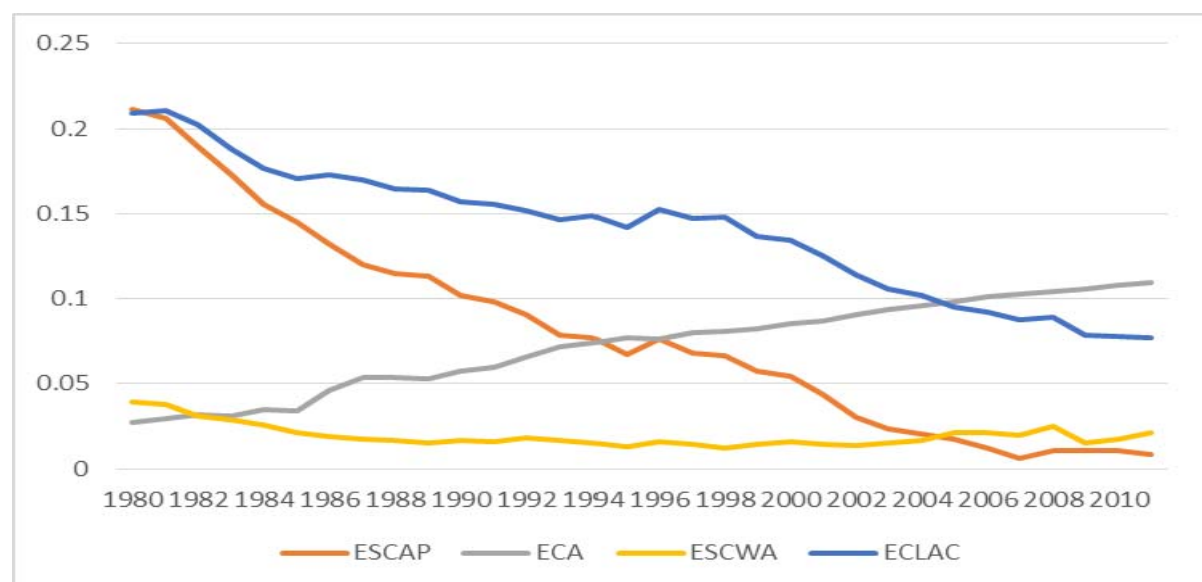
Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

Dropping all the developed countries from analysis and comparing only the developing regions, the contrast is very stark. In Figure 4.3, ESCAP and ECLAC have the largest convergence towards the developing global levels, while ECA is the only developing region to diverge from



the global trend. The ESCAP income results are very robust, as there is an evident convergence both with the backdrop of the entire world (see figure 4.2) and only the developing world (see figure 4.3).

**Figure 4.3.** Income Convergence between UN regional groupings developing countries based on GDP per Capita Gini, 1980-2011



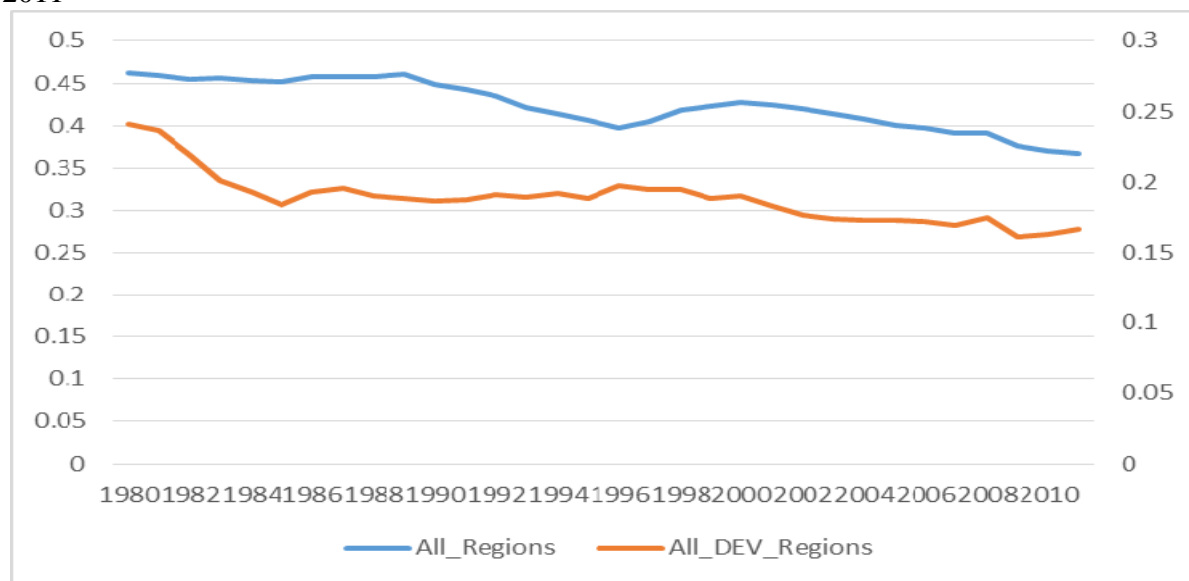
Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

The global income converge is further represented in Figure 4.4, comparing the overall Gini levels for the entire regional grouping (left scale) and the developed regional grouping (right scale). Both measures have had convergence since 1980, and particularly strong convergence since the year 2000.

The weak performance of the LDCs motivates further analysis within groups. It's noted that as a group the Developing Countries are converging, although it is apparent that the gains are not shared by all. Figure 4.5 relates the Gini growth within each region and shows that there has been very little convergence between countries in each region. The momentous income convergence has been witnessed on the global scale falls apart when one analyzes the levels within each region.

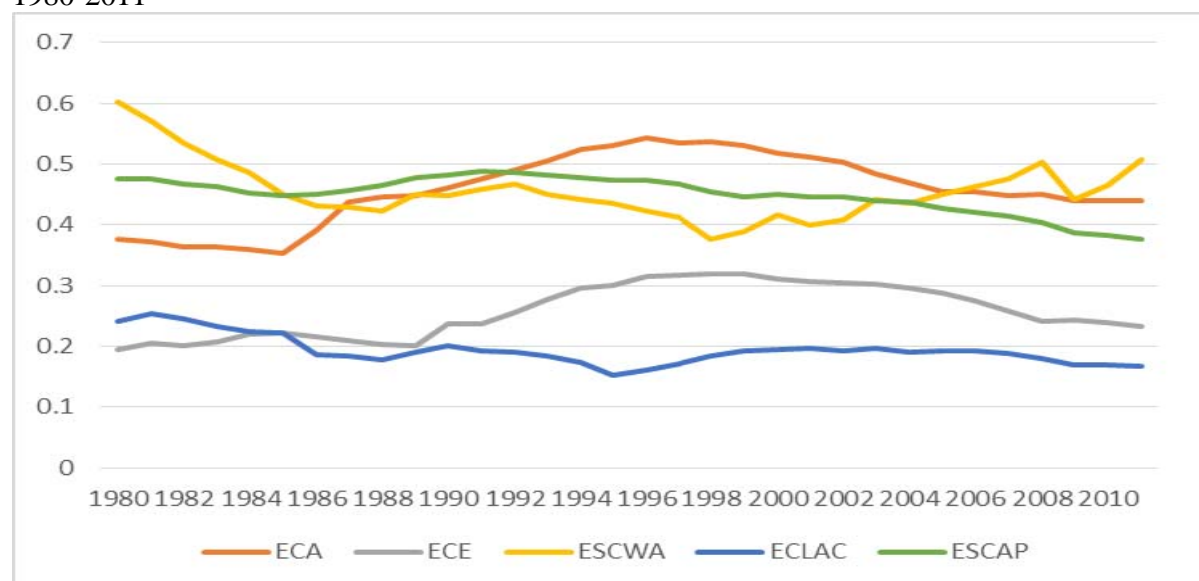
This suggests that although broadly the world is converging, that broad convergence is narrowly produced by a few countries within each region. This within-disparity is used as rationale for section 4.2, which analyzes the *Polarization Index*, relating the level of inequality produced between groups to the level of inequality within each group.

**Figure 4.4.** Overall UN regional groupings Income Convergence for both the Whole World (left scale) and the Developed World (Right Scale) between based on GDP per Capita Gini, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.gdpc.net/pwt](http://www.gdpc.net/pwt) (accessed 16 January 2015).

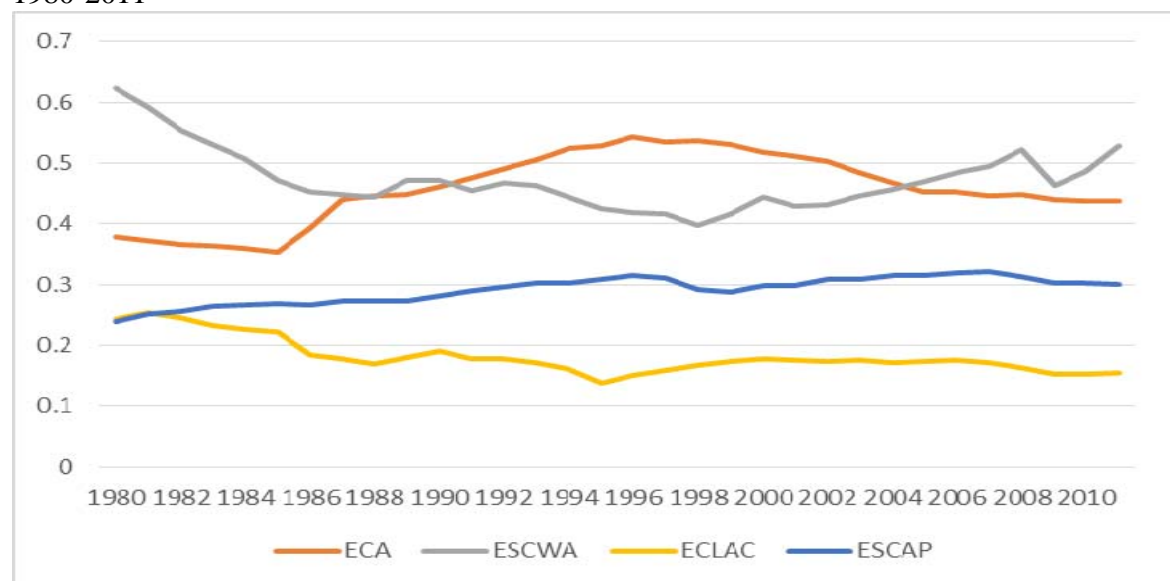
**Figure 4.5.** Income convergence within UN regional groupings based on GDP per Capita Gini, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.gdpc.net/pwt](http://www.gdpc.net/pwt) (accessed 16 January 2015).

Restricting attention to only the developing countries in Figure 4.6, the only regions that have had regional convergence since 1980 is ECLAC and ESCWA. If the analysis is limited since 1990, no region has converged.

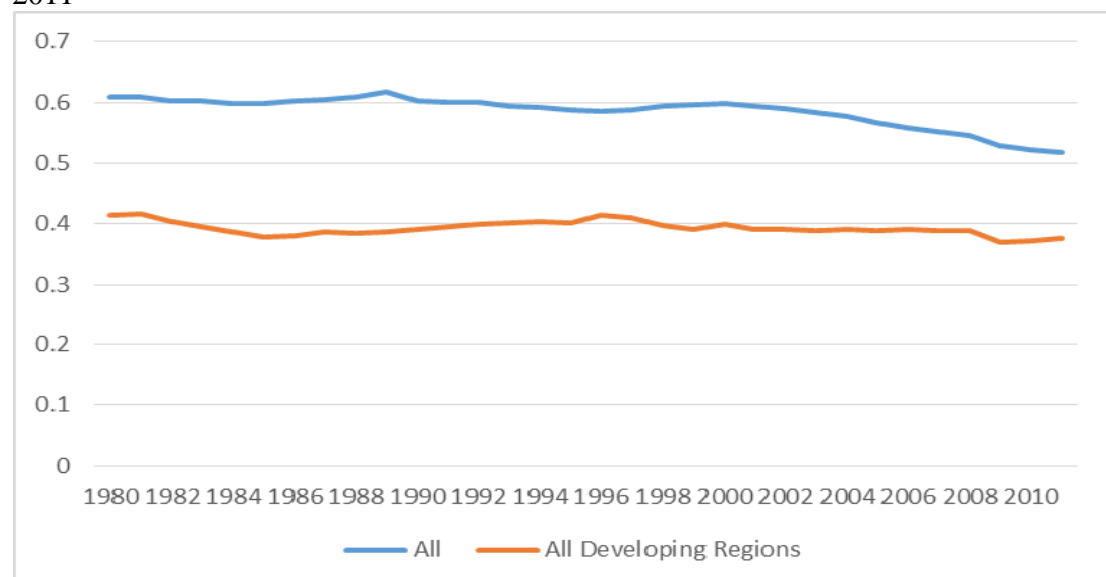
**Figure 4.6.** Income convergence within Developing Regions based on GDP per Capita Gini, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

This trend is easily identified in Figure 4.7, when the Gini of entire world and that of the developing world are compared. There has been a marked convergence since 2000 globally, although within the developing region there has been little change.

**Figure 4.7.** Global and Developing Income convergence based on GDP per Capita Gini, 1980-2011



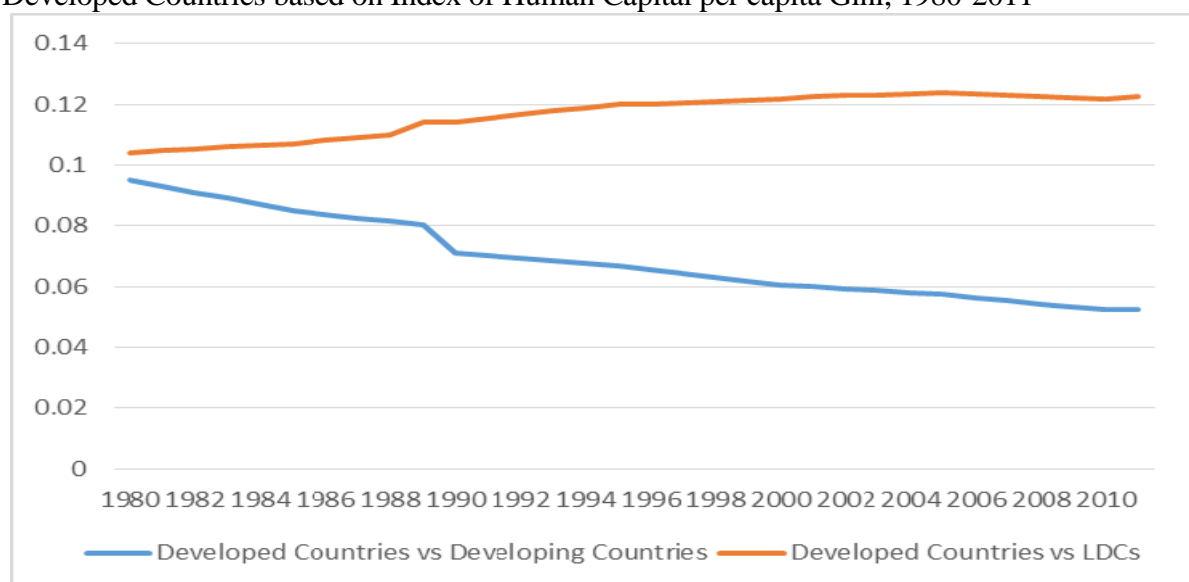
Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

#### 4.1.2 Index of Human Capital per capita

The Index of Human Capital per capita is based on years of schooling (Barro/Lee, 2012) and returns to education (Psacharopoulos, 1994). In general one would expect that large gains in GDP per capita would become invested in education, raising the human capital of increasingly across countries. Figure 4.8, broadly supports that claims, as the level of inequality moves in the exact same direction as the GDP per capita inequality. There is a convergence in the Developing countries against the Developed countries, while the LDCs further fall behind.

However, a central question concerns the increase in GDP with the increase in Human Capital. Figure 1 shows that although wealth has risen quickly in the developing world, the accumulation of human capital has not been nearly on par. If one compare Figure 4.8 to Figure 4.1, a large convergence in Gini GDPpc occurred after 2000, yet the Index of Human Capital Gini does not dramatically change its trend in 2000. This suggests that the investment in human capital is not tied to an increase in economic growth as one would traditionally predict.

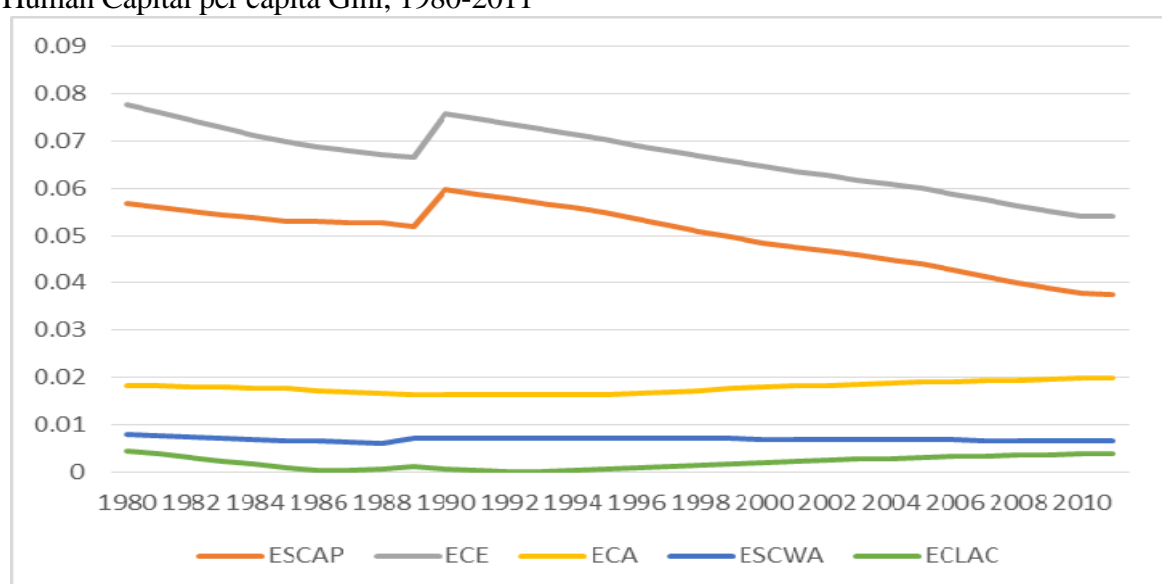
**Figure 4.8.** Human Capital convergence in Developing vs Developed Countries and LDCs vs Developed Countries based on Index of Human Capital per capita Gini, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

Regionally the human capital does not change dramatically from the income based trends. Figure 4.9 reveals that the overall changes in the human capital Gini come from changes in Europe and Asia. Comparing Figure 4.9 to the GDPpc Gini Index trends in Figure 4.2, there is much more similarity between human capital investment and GDP per capita growth. This suggests that human capital growth has spatial spillovers that affect the entire region, not just whether a particular country has high income or low income. Figure 4.9 also diverges from Figure 4.4 in the post-1990 Gini. One can observe a stronger correlation spatially than income based, although it is evident that income does not explain the dynamics of human capital outcomes.

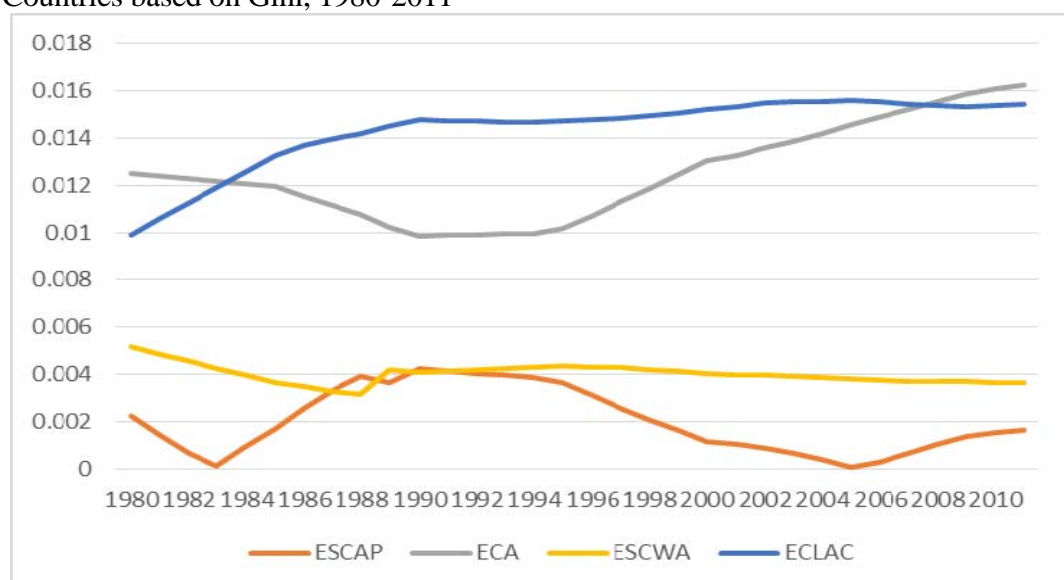
**Figure 4.9.** Human Capital convergence between UN regional groupings based on Index of Human Capital per capita Gini, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

Comparing only the developing regions, human Capital has seen almost no convergence in any region in Figure 4.10. The marked convergence between Developing and Developed Countries we see in Figure 4.8 is absent for the LDCs and absent within the Developing World by region. This directly contrasts the movements one observes in the developing world income convergence, particularly for ECLAC, from figure 4.3.

**Figure 4.10.** Index of Human Capital per capita convergence between UN regional Developing Countries based on Gini, 1980-2011

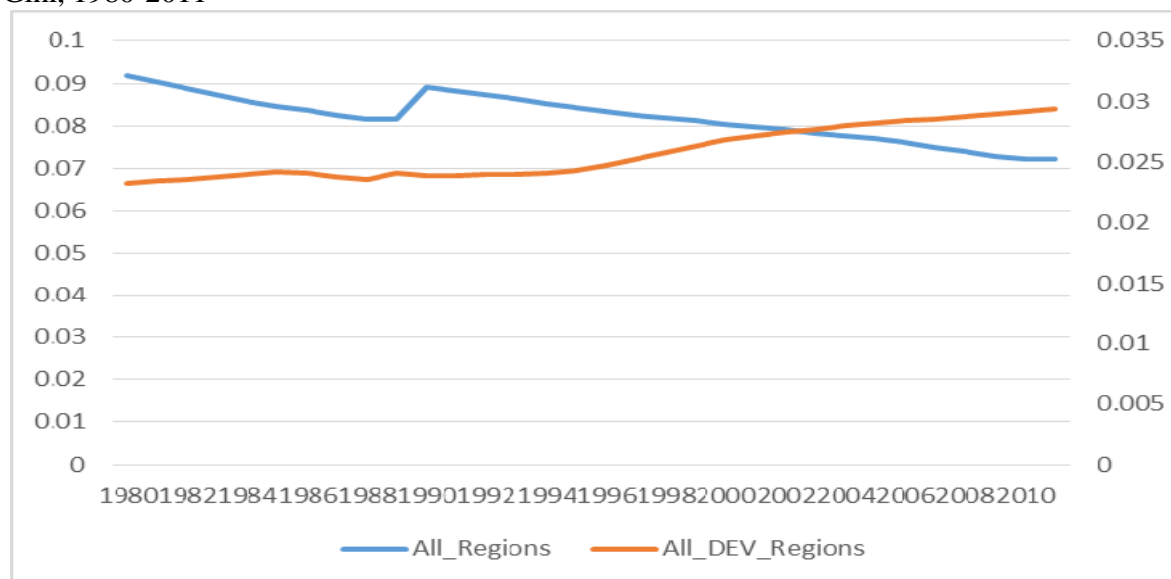


Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

In Figure 4.4, results show that there is income convergence in both the entire world and among the developing world as a whole. However, Figure 4.11 shows that although there is income convergence, there is not convergence in human capital. Furthermore, the trends indicate

convergence in income since the year 2000 is non-existent for human capital. There is no clear link between income convergence and human capital convergence, supporting the hypothesis that the social capital must be managed on a country-by-country basis.

**Figure 4.11.** Overall UN regional groupings Index of Human Capital per capita Convergence for both the Whole World (left scale) and the Developed World (Right Scale) between based on Gini, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

#### 4.1.3 Human Development Index

The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living.<sup>18</sup>

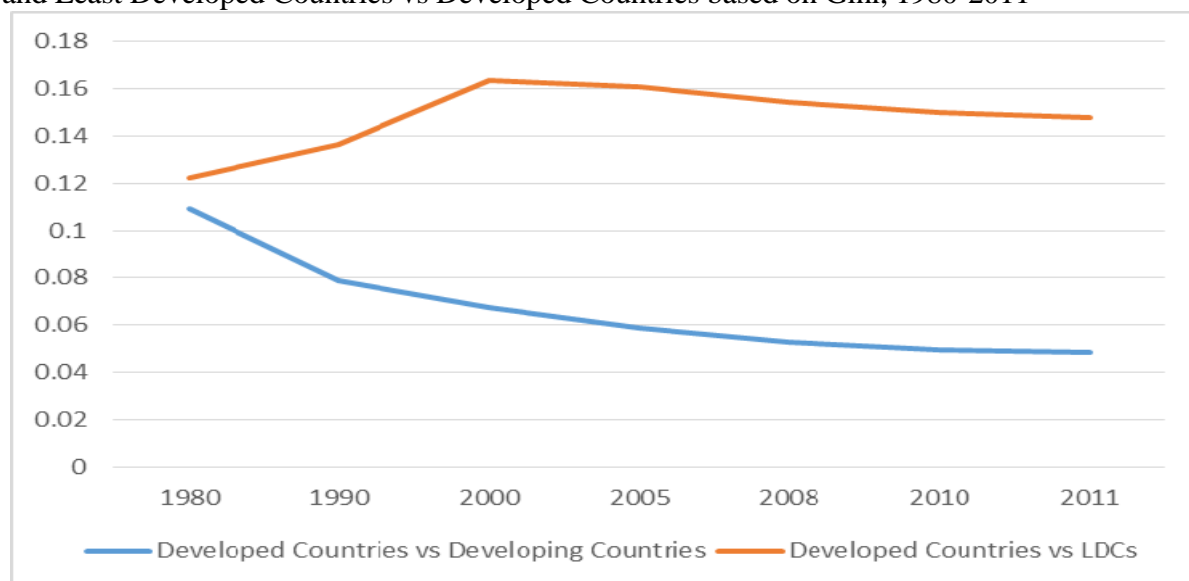
The analysis uses HDI data for seven years as follows: 1980, 1990, 2000, 2005, 2008, 2010, 2011. Figure 4.12 is very similar to Figure human capital (see figure 4.8), in that it shows a convergence between the developed and the developing world, while the LDCs fall behind.

Figure 4.13 presents the regional grouping of the Human Development Index. This converges from the GDPpc as the ESCAP region sees a large downward movement in its HDI Gini Index while Africa experiences an increase in its Gini Index values. The GDPpc movements for these countries are much less volatile than the HDI movements, underlies the idea that income growth does not determine the social growth.

<sup>18</sup> More information and methodology of the HDI can be found in the statistical annex of the United Nations *Human Development Report 2014*.

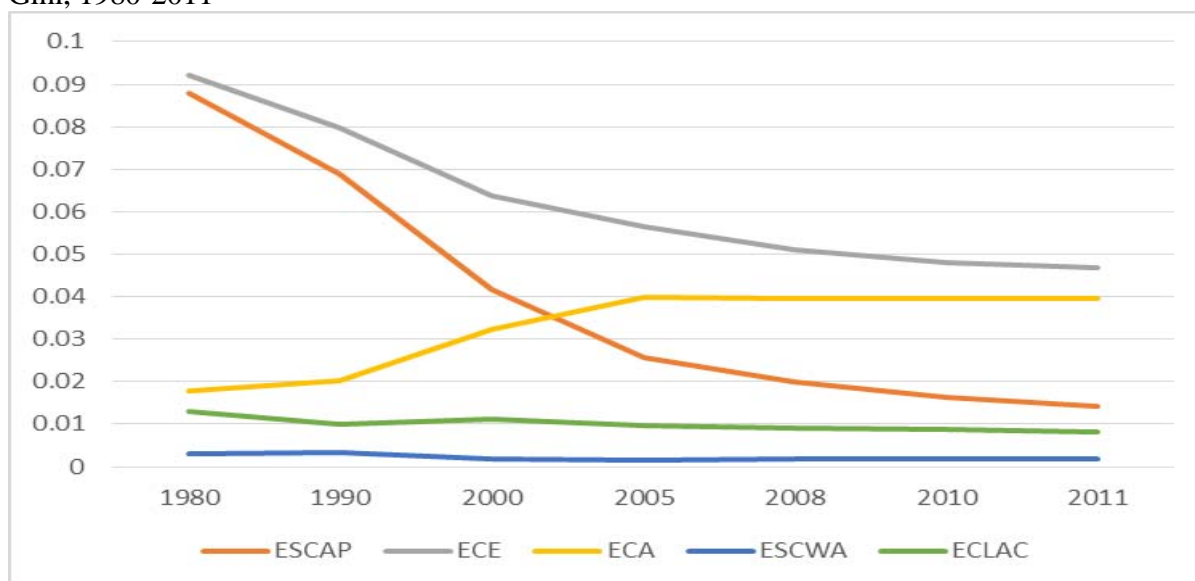


**Figure 4.12.** Human Development Index convergence in Developing vs Developed Countries and Least Developed Countries vs Developed Countries based on Gini, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

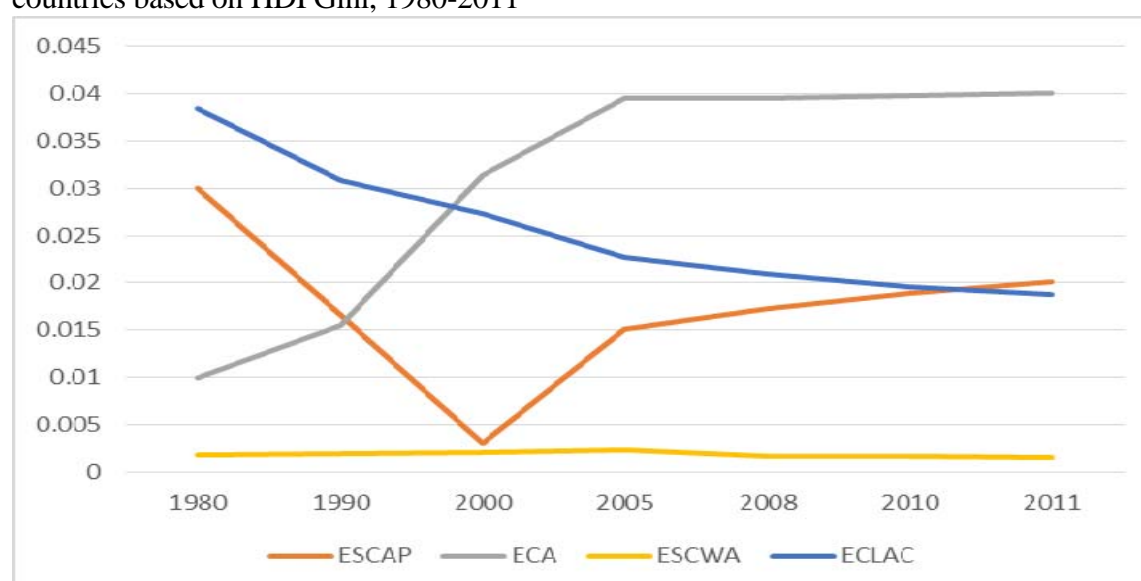
**Figure 4.13.** Human Development Index convergence between UN regional countries based on Gini, 1980-2011



Source: ESCAP calculations based on United Nations Development Report. Available from <http://hdr.undp.org/en> (accessed 16 January 2015).

Within the Developing world, the results are also counter the claim that income convergence leads to human development convergence as ECLAC is the only region that has a sustained convergence during the period of analysis as in Figure 4.14.

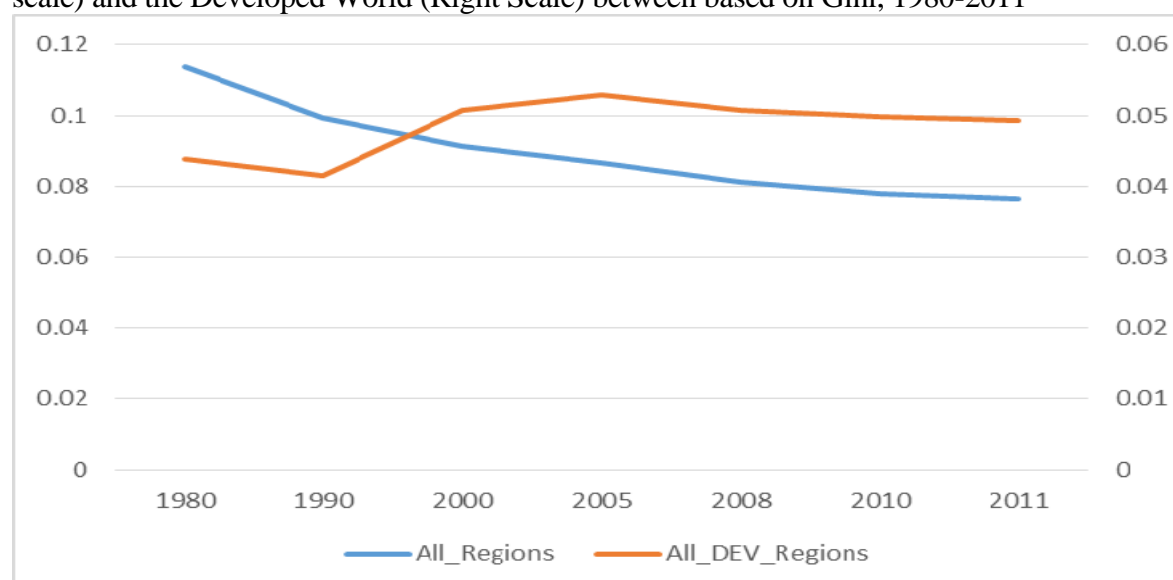
**Figure 4.14.** Human Development Index convergence between UN regional developing countries based on HDI Gini, 1980-2011



Source: ESCAP calculations based on United Nations Development Report. Available from <http://hdr.undp.org/en> (accessed 16 January 2015).

The overall trends in Figure 4.15 reflect that within the developing world, there is no evidence of convergence. Both the human capital and the HDI Gini move in this same direction, counter to the results from income convergence. As a further robustness check the analysis was completed using Barro's years of schooling and the results did not change using that social indicator.

**Figure 4.15.** Overall Human Development Index convergence for both the Whole World (left scale) and the Developed World (Right Scale) between based on Gini, 1980-2011

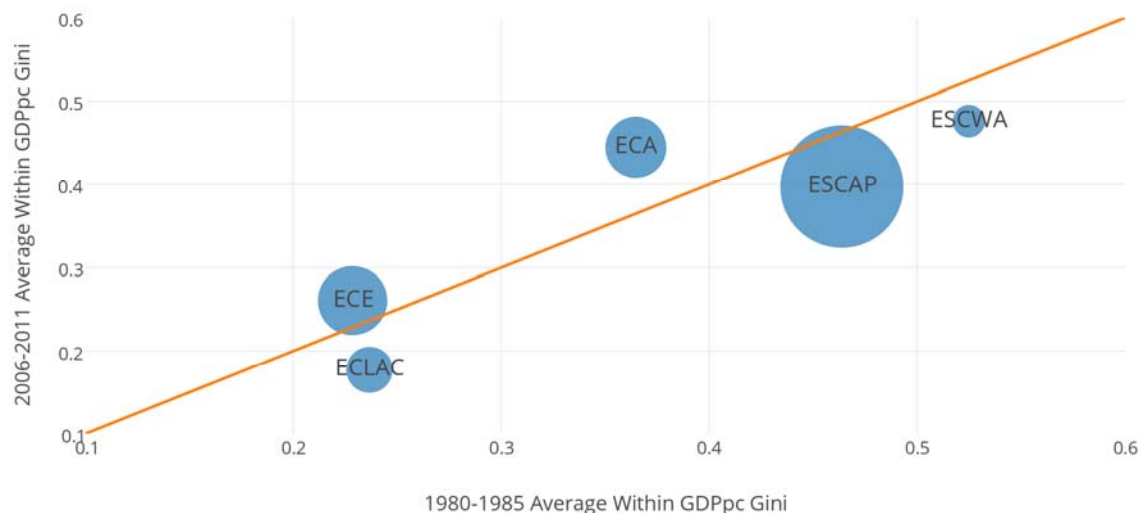


Source: ESCAP calculations based on United Nations Development Report. Available from <http://hdr.undp.org/en> (accessed 16 January 2015).

This income convergence across regions of the world is a very small part of the development picture, as within regions we have seen large disparities. If one analyze the income convergence within each regional level, Figure 4.6 and Figure 4.7, much of these gains disappear. This implies that within each region inequality is not decreasing even though as a region it converges

to global GDPpc. Figure 4.16 illustrates the GDPpc Gini change within each region taking a snapshot of the first 6 years and the last 6 years of the analysis. The straight line is the 45 degree line, with regions below it experiencing regional convergence, and those above it divergence.

**Figure 4.16.** Snapshot view: Income convergence between UN regions 1980-85 average vs. 2006-11 average Gini GDPpc

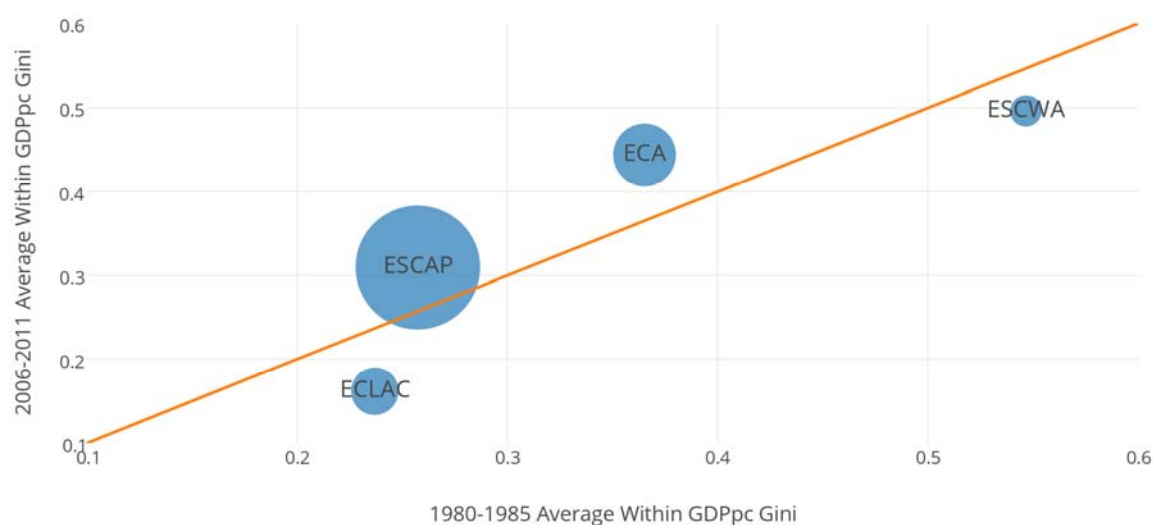


*Source:* ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

*Note:* Bubble Size is 2011 Regional Population based on GDP per Capita Gini.

There has been very little movement away from the 45 degree line, implying that within regions, there has not been the same level of convergence that one experience across different regions. This pattern continues when one look at other indicators, such as human capital and overall development measures.

**Figure 4.17.** Snapshot view: Income convergence between Developing Regions 1980-85 average vs. 2006-11 average Gini GDPpc



*Source:* ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

*Note:* Bubble Size is 2011 Regional Population based on GDP per Capita Gini.

Although the world is converging as a whole in certain regards, there is a strong divergence within many regions that has only got worse over the past 30 years. Figure 4.17 looks only at the developing world, which moves ESCAP to the divergence side of the 45 degree line. In the next section, this paper analyzes the Polarization Index, which will highlight the evolution of inequality between and within the different groups.

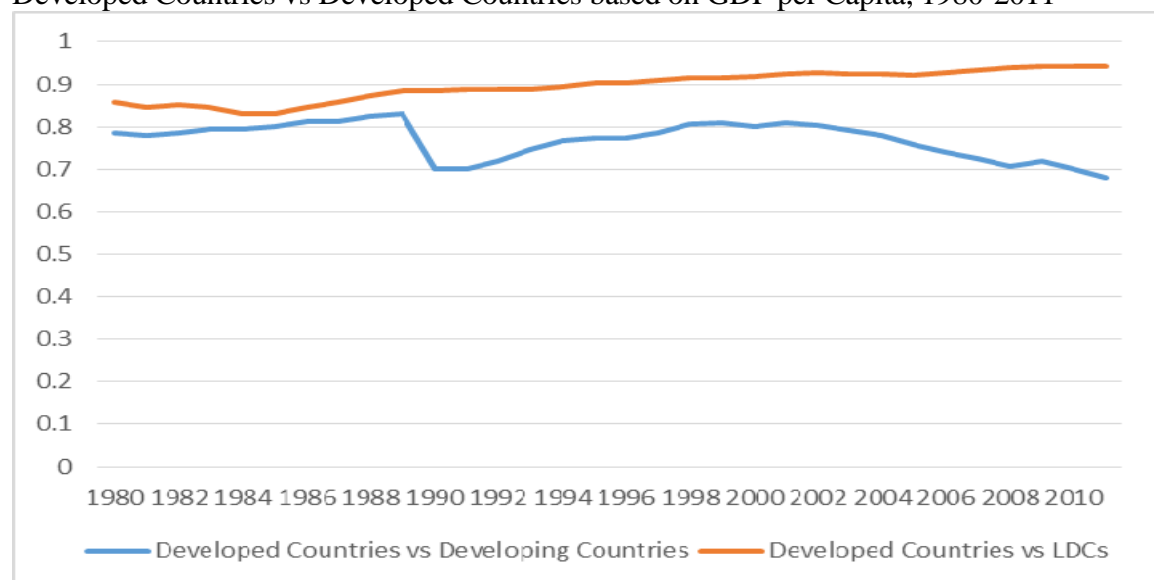
## 4.2 Polarization index analysis

The GE class of inequality measures is useful as it allows the breakdown of overall inequality into the inequality between each group and the inequality within each group. The polarization index is defined as the ratio of the between group inequality to total inequality (total inequality is within group inequality + between group inequality). The polarization index does not specifically tell the level of overall inequality, only how it has shifted between or within the groups of analysis. The strongest inferences are drawn from combining the results in this section with those of section 4.1. More detailed analysis can be found in the appendices.

### 4.2.1. GDP per capita

While one witnesses income convergence between developed and developing countries, Figure 4.18 shows that more of the inequality is found within each region than between the two regions. The story is the opposite for the LDCs, as the vast majority, over 94%, of the inequality is between the LDCs and the Developed countries.

**Figure 4.18.** Income Polarization Index in Developing vs Developed Countries and Least Developed Countries vs Developed Countries based on GDP per Capita, 1980-2011

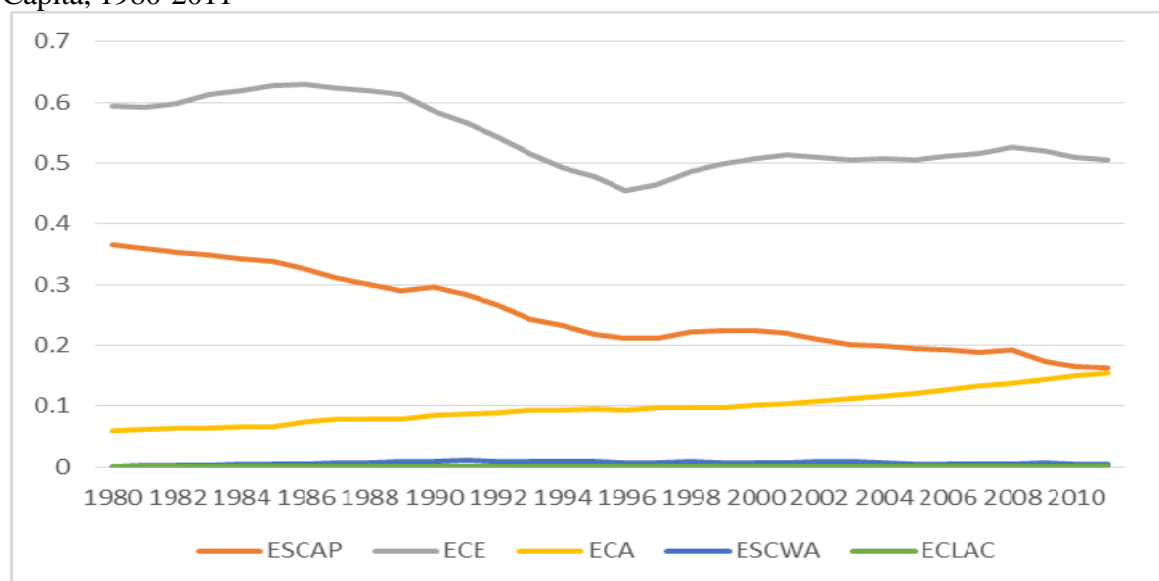


Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

Inequality has been increasing within every region. Figure 4.19 shows that except for the ECA, nearly every regions has seen their within equality rise. ECLAC and ESCWA near zero is an artifact of population weights, and does not suggest that that their inequality is only within

themselves, only that their population weight is so small as a region it barely contributes to the global inequality.

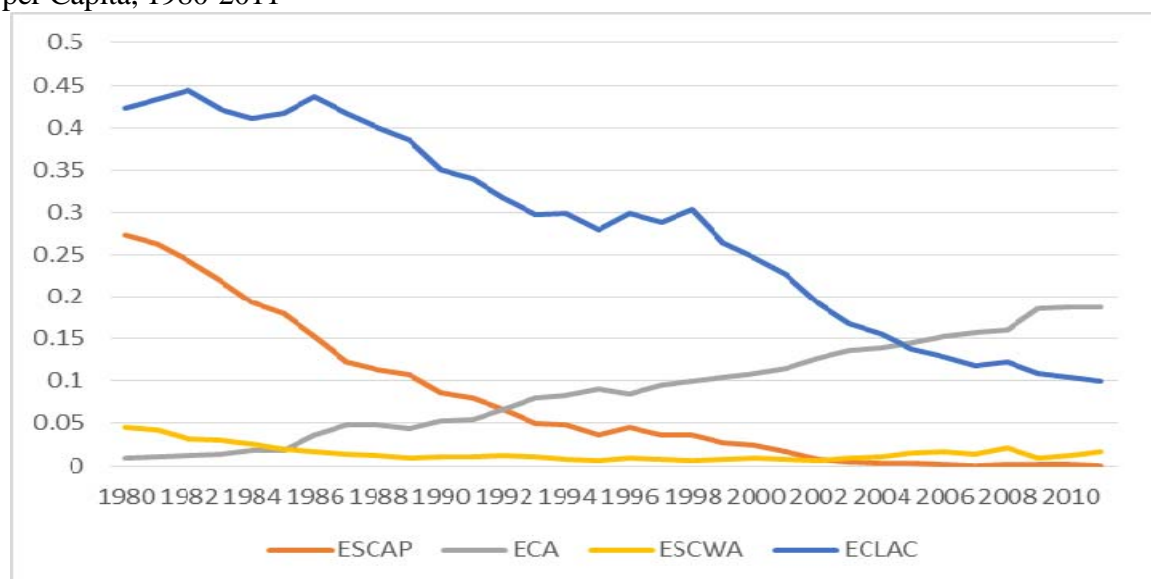
**Figure 4.19.** Income Polarization Index between UN regional countries based on GDP per Capita, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

The developing world is much more uneven, as in Figure 4.20, ESCAP's GDP per capita inequality almost entirely within by the year 2000. This lines up with the steady GDP per capita growth for the region, but it is evident that significant that income did not grow equally throughout ESCAP region.

**Figure 4.20.** Income Polarization Index between Regional Developing Countries based on GDP per Capita, 1980-2011

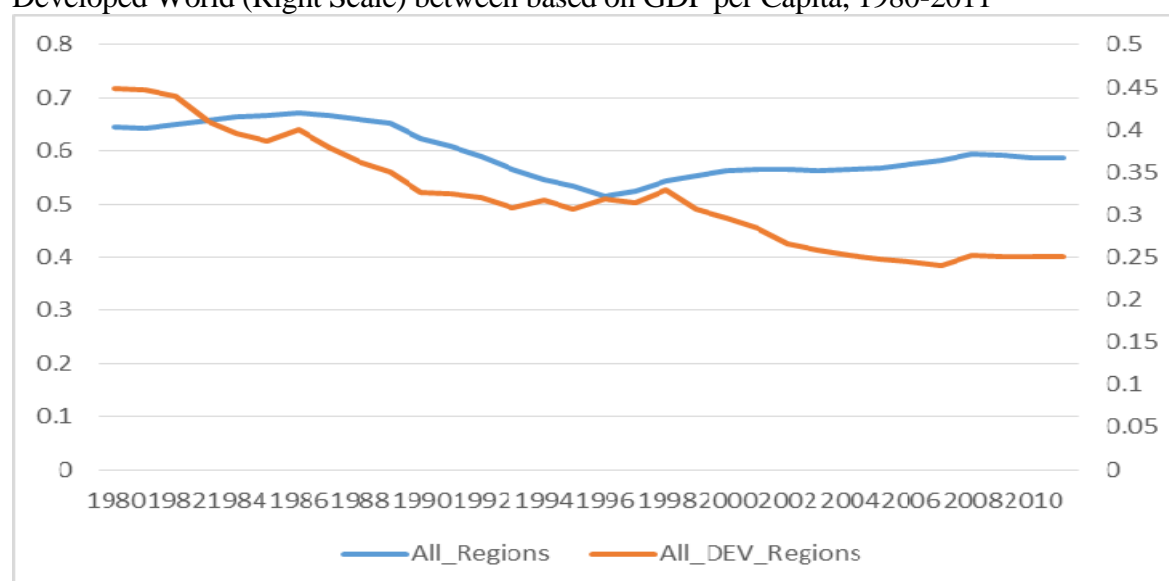


Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

The world as a whole and the developing world's Polarization Index are displayed in Figure

4.21. Consistent with the overall Gini decline in Figure G4, regions are converging although the main inequality is now on a regional level.

**Figure 4.21.** Overall Regional Polarization Index for both the Whole World (left scale) and the Developed World (Right Scale) between based on GDP per Capita, 1980-2011

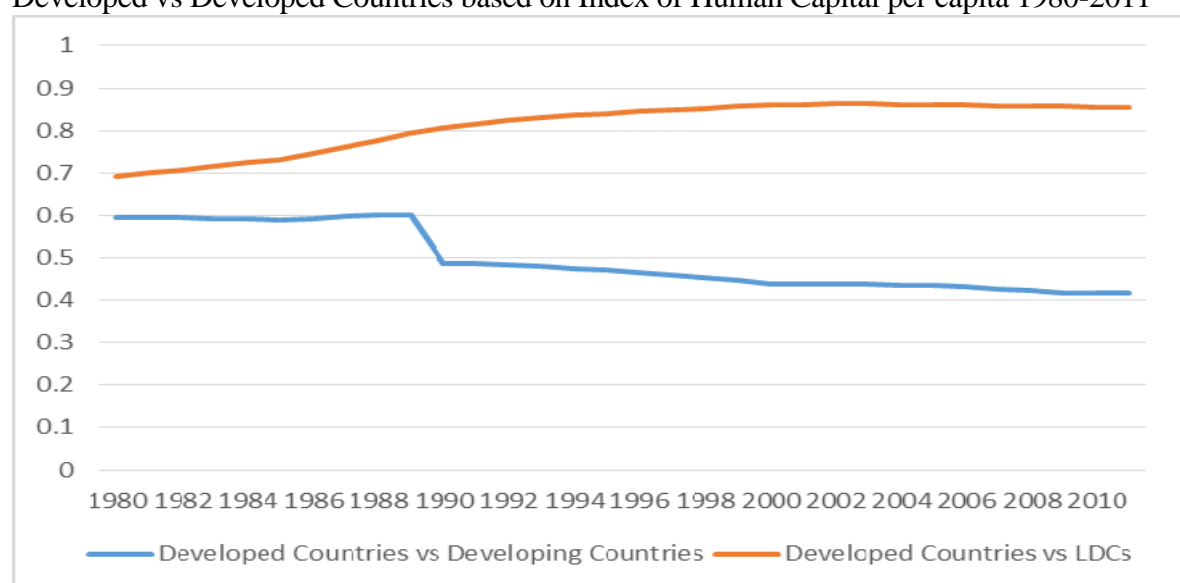


Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).

#### 4.2.2. Index of Human Capital per capita

The results in Figure 4.22 continue to show that the LDC's are falling behind as a region while the Developed and Developing world are broadly converging. More attention should be paid to the increasing polarization within the groups, as the within share of inequality increased by nearly 30% over the period.

**Figure 4.22.** Income Polarization Index in Developing vs Developed Countries and Least Developed vs Developed Countries based on Index of Human Capital per capita 1980-2011

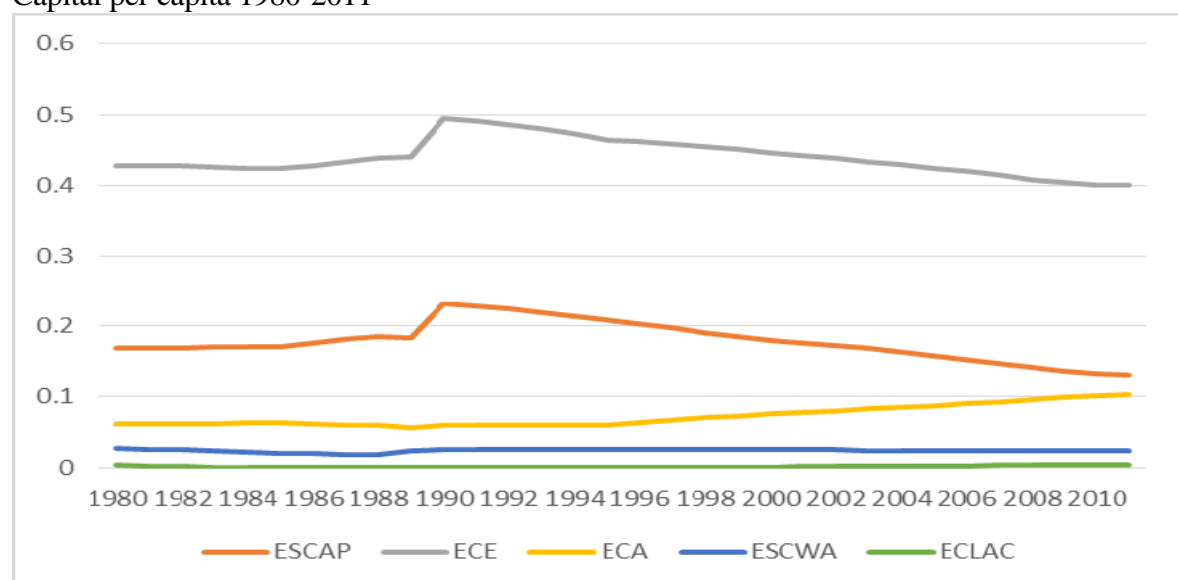


Source: ESCAP calculations based on Penn World Table. Available from [www.ggdc.net/pwt](http://www.ggdc.net/pwt) (accessed 16 January 2015).



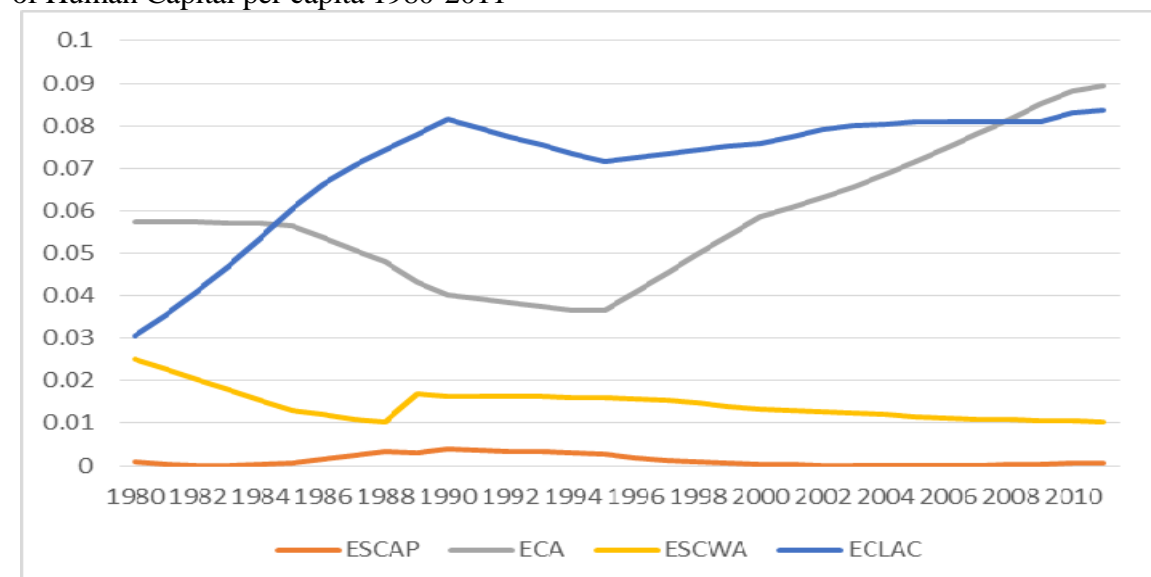
Figure 4.23 and Figure 4.24 show that across all regions the inequality has mostly shifted within regions. In the developing world, there has been a relative inequality increase between regions, although the between inequality is still less than 10% in all of the regions.

**Figure 4.23.** Income Polarization Index between regional countries based on Index of Human Capital per capita 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

**Figure 4.24.** Income Polarization Index between Regional Developing Countries based on Index of Human Capital per capita 1980-2011

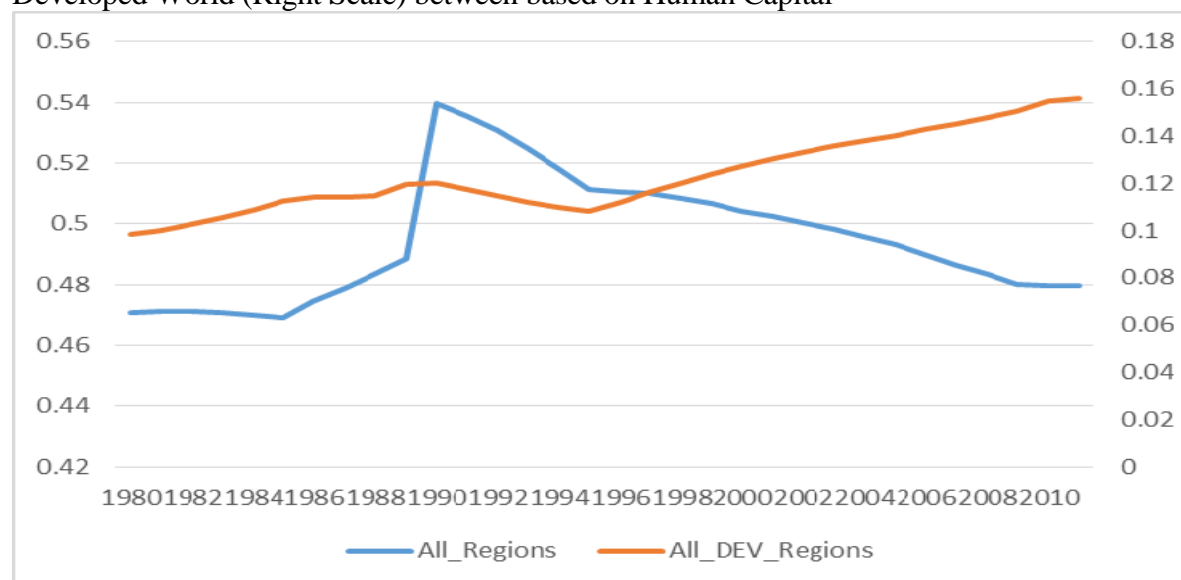


Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

By comparing Figure 4.25 to Figure 4.11, the results show that human capital development has moved in opposite directions on the global scale and in the developing world. While in Figure 4.11, there was not a marked departure from the trend since the year 2000, Figure 4.25 has an

evident departure from the trend. In the year 2000 the income inequality began to shrink but we did not see that trend developing in human capital. The results further show that in Figure 4.25, there is a higher between-inequality proportion in the regions of the developing world. This moves in the opposite direction of Figure 4.21, and signifies that while incomes between regions converged, human capital between regions diverged.

**Figure 4.25.** Overall Regional Polarization Index for both the Whole World (left scale) and the Developed World (Right Scale) between based on Human Capital



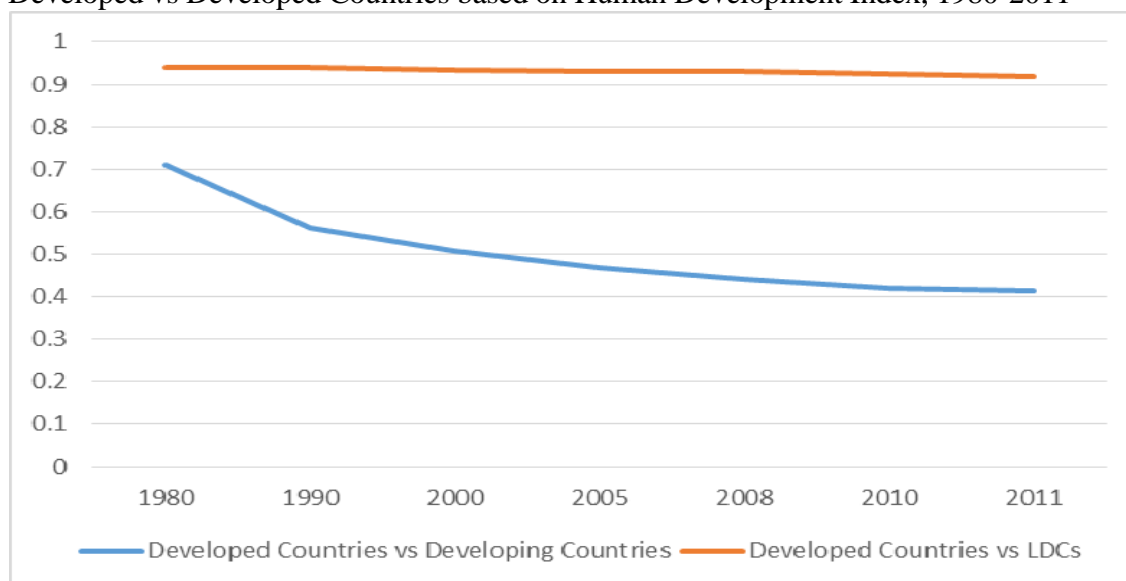
Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

### 4.2.3 Human Development Index

The Human Development Index continues to tell how LDCs fall behind, as over 90% of the inequality is between the regions in Figure 4.26. Broadly speaking, when the Gini index rises, the between inequality tends to drive the increase in inequality, and when the Gini index decreases the between inequality decreases faster than the within equality. In terms of the HDI measure, the graphs are very similar to the overall Gini results, suggesting that the within inequality did not move very much in this category. This result is further explained by a more detailed table in the appendix (see annex table 2, table 3 and table 4).

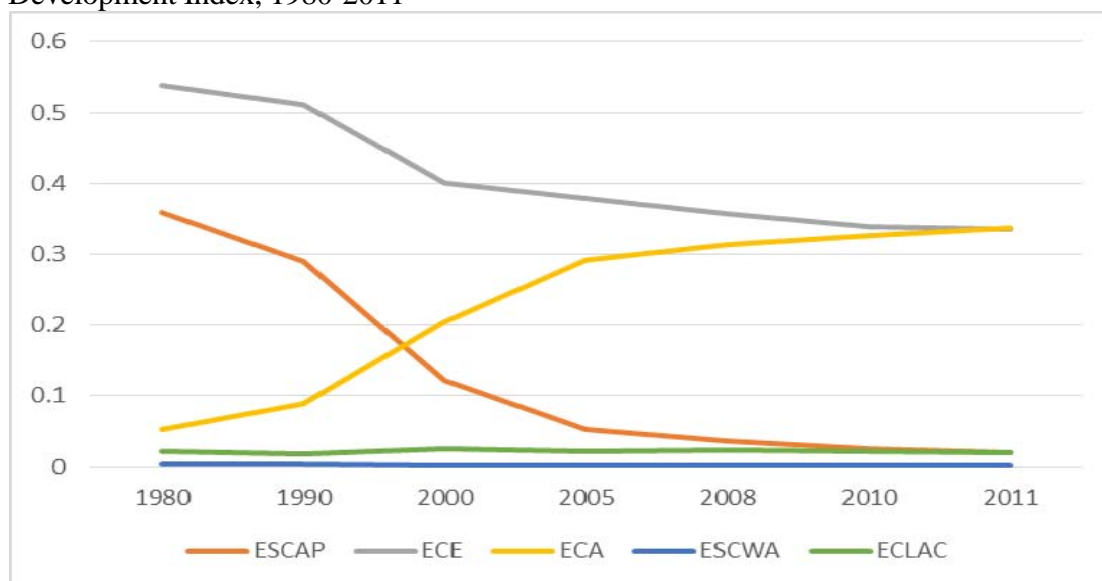
Figure 4.26 and Figure 4.27 are nearly identical to Figure 4.13 and Figure 4.14, drawing the same conclusions. Mainly the GDPpc is not as volatile as the Human Development Index, suggesting that GDPpc is an imperfect measure of development, and income growth does not determine social and overall level of development outcomes.

**Figure 4.26.** Income Polarization Index in Developing vs Developed Countries and Least Developed vs Developed Countries based on Human Development Index, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

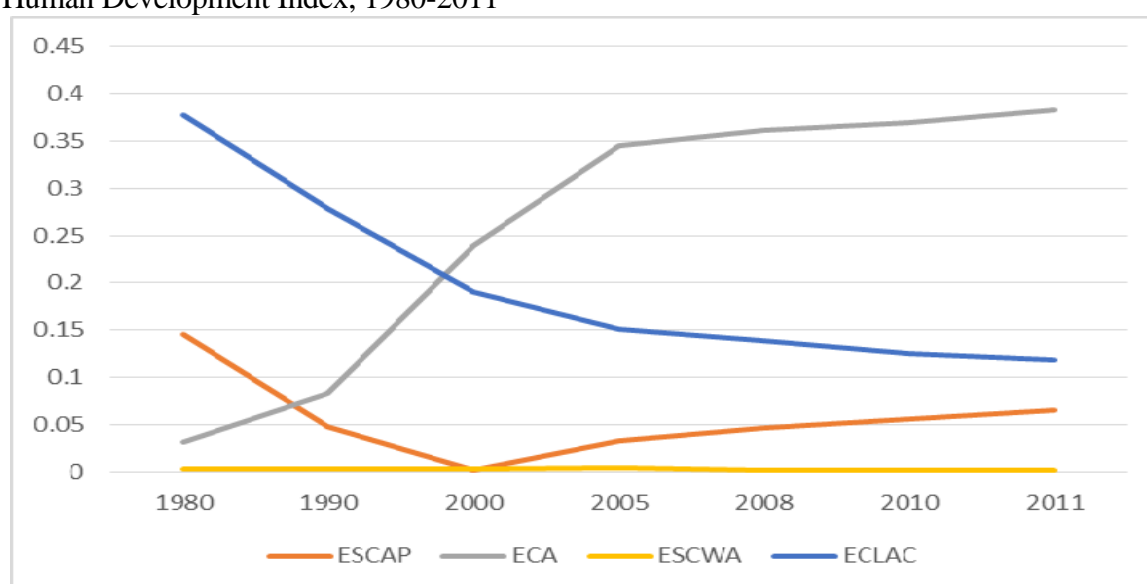
**Figure 4.26.** Income Polarization Index between regional countries based on Human Development Index, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

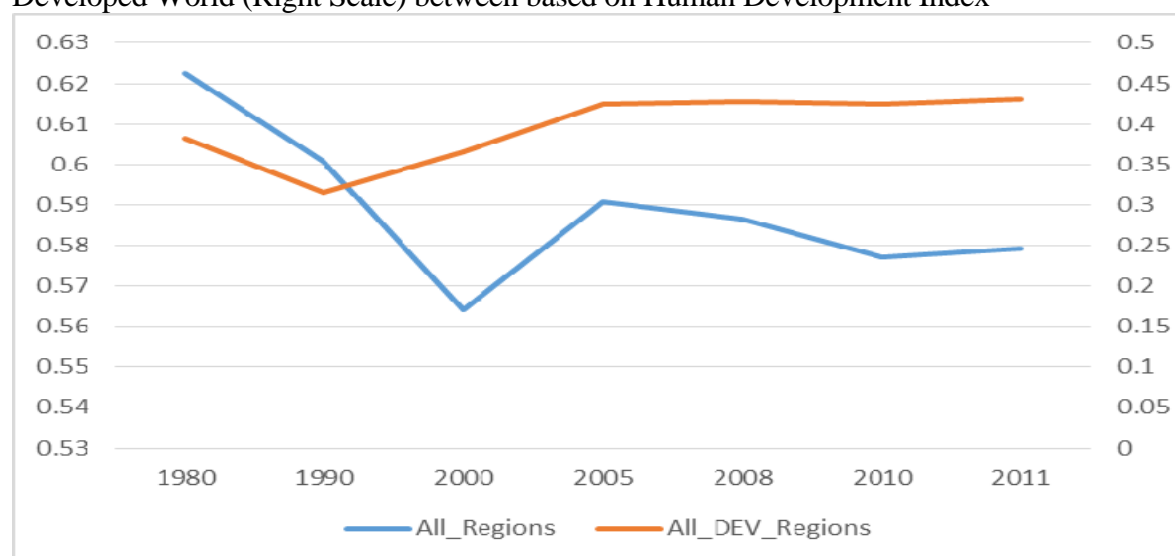
Figure 4.28 presents the result that as the world becomes less polarized between different regions, the developing world lacks that trend. Considering only the results since the year 2000, both the global and the developing world have experienced an increase in the proportion of between-inequality, while the GDP per capita levels between the regions have seen a smaller proportion of between-inequality as in Figure 4.21.

**Figure 4.27.** Income Polarization Index between Regional Developing Countries based on Human Development Index, 1980-2011



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

**Figure 4.28.** Overall Regional Polarization Index for both the Whole World (left scale) and the Developed World (Right Scale) between based on Human Development Index



Source: ESCAP calculations based on Penn World Table. Available from [www.ggd.net/pwt](http://www.ggd.net/pwt) (accessed 16 January 2015).

## 5 CONCLUDING REMARKS

In this paper, a detailed quantitative analysis has been conducted for the countries in all regions for two types of economic measures: (i) GDP per capita and (ii) social development which is based on index of human capital per capita and the human development index. All of the measures have variation in how the overall inequality changed, how the inequality was distributed between and within groups, and the specific inequality trends within both the developed and the developing world, including LDCs.

The aim of this paper was twofold: (i) to show that GDP improvement should be actively guided to impact inclusive growth and social development, and (ii) to show that poorest countries in the world such as the LDCs are falling behind further behind both in terms of income and social development.

Policymakers and academics often argue that the income growth and inequality are two sides of the same sword. Many countries eschew their concerns for growing income and social inequality as long as they maintain high levels of GDP growth. Asia and the Pacific, for instance, has been the main driver of global GDP growth over the past three decades, yet it has not been impervious to rising income and social inequality. Within almost every grouping the results indicate a convergence in the levels of GDP per capita. If the economic gains were also being distributed inside of the countries as they are among countries, one would expect to see the social development of poorer countries improve faster than that of the richer countries, including developing. Yet the paper illustrate that there has not been convergence in human capital over the past decades.

The Asia-Pacific region is becoming particularly polarized in the social and human development dimension, despite dynamic and sustained income growth over the past three decades. The paper clearly shows evidence that social development has not kept pace with economic growth, and this will likely hinder the sustainability of economic growth in coming years. There are large economic, social and environmental gains to be made from a rethinking of national and regional policies towards a sustainable development agenda and redistribution of economic gains.

The findings of this paper may have some policy implications both at the national and regional levels. National level reform policies and strategies must be initiated to reverse the trends in *polarization* of economic growth and social development. At the regional level, countries need to enhance their economic cooperation policies to step up support for spreading the benefits of growth across the regions, especially for LDCs and other vulnerable countries. Across regions, governments must increase their efforts to promote inclusive growth policies. Those policies should support an adequate balance between the need for appropriate growth for job creation and the need to target public policy according to the country-specific circumstances, including financial, trade and institutional frameworks.

## Annex

Annex Table 1: UN regional classification

ECE		ESCWA	ECLAC	ESCAP	ECA	
Albania	Latvia	Bahrain	Antigua and Barbuda	Afghanistan	Algeria	Madagascar
Andorra	Liechtenstein	Egypt	Argentina	Australia	Angola	Malawi
Armenia*	Lithuania	Iraq	Bahamas	Bangladesh	Benin	Mali
Austria	Luxembourg	Jordan	Barbados	Bhutan	Botswana	Mauritania
Azerbaijan*	Malta	Kuwait	Belize	Brunei	Burkina Faso	Mauritius
Belarus	Moldova	Lebanon	Bolivia	Cambodia	Burundi	Mozambique
Belgium	Monaco	Libya	Brazil	China	Cape Verde	Morocco
Bosnia and Herzegovina	Montenegro	Morocco	Chile	Democratic People's Republic of Korea	Cameroon	Namibia
Bulgaria	Netherlands	Oman	Colombia	Fiji	Central African Republic	Niger
Canada	Norway	Palestine	Costa Rica	India	Chad	Nigeria
Croatia	Poland	Qatar	Cuba	Indonesia	Comoros	Rwanda
Cyprus	Portugal	Saudi Arabia	Dominica	Iran, Islamic Republic	Congo, Dem. Rep.	Sao Tome and Principe
Czech Republic	Romania	Sudan	Dominican Republic	Japan	Congo, Republic of	Senegal
Denmark	Russian Federation*	Syria	Ecuador	Kiribati	Cote d'Ivoire	Seychelles
Estonia	San Marino	Tunisia	El Salvador	Lao PDR	Djibouti	Sierra Leone
Finland	Serbia	United Arab Emirates	Grenada	Malaysia	Egypt	Somalia
France	Slovak Republic	Yemen	Guatemala	Maldives	Eritrea	South Africa
Georgia*	Slovenia		Guyana	Marshall Islands	Ethiopia	South Sudan
Germany	Spain		Haiti	Federated States of Micronesia	Equatorial Guinea	Sudan
Greece	Sweden		Honduras	Mongolia	Gabon	Swaziland
Hungary	Switzerland		Jamaica	Myanmar	Gambia, The	Tanzania
Iceland	Tajikistan*		Mexico	Nauru	Ghana	Togo
Ireland	Turkmenistan*		Nicaragua	Nepal	Guinea	Tunisia
Israel	Ukraine		Paraguay	New Zealand	Guinea-Bissau	Uganda
Italy	United Kingdom		Peru	Panama	Kenya	Zambia
Kazakhstan*	Uzbekistan*		Portugal	Palau	Lesotho	Zimbabwe
Kyrgyzstan*			St. Kitts & Nevis	Papua New Guinea	Liberia	
			St. Lucia	Philippines	Libya	
			St. Vincent & Grenadines	Korea, Republic of		
			Suriname	Samoa		
			Trinidad & Tobago	Singapore		
			Venezuela	Solomon Islands		
			United States	Sri Lanka		
			Uruguay	Thailand		
				Timor-leste		
				Tonga		
				Turkey**		
				Tuvalu		
				Vanuatu		
				Vietnam		

Sources: ECE: <http://www.unece.org/> ESCWA: <http://www.escwa.un.org/> ECLAC: <http://www.cepal.org/en/> ESCAP: <http://www.unescap.org/> ECA: <http://www.uneca.org/>.

Notes: \* Member States of ESCAP, \*\* Member State of ECE

Annex Table 2: Descriptive measures across All Regions for Index of Human Capital per capita (hc), GDP per capita (gdppc), and the Human Development Index (hdi)

<b>Descriptive_stat</b>	<b>1980_hc</b>	<b>1990_hc</b>	<b>2000_hc</b>	<b>2010_hc</b>
<b>ECA</b>	1.45	1.67	1.84	1.99
<b>ECE</b>	2.64	2.82	3.03	3.18
<b>ESCWA</b>	1.43	1.68	1.89	2.10
<b>ECLAC</b>	1.81	2.08	2.34	2.57
<b>ESCAP</b>	1.73	1.89	2.11	2.32
<b>Between_Inequality</b>	0.02	0.02	0.01	0.01
<b>Within_Inequality</b>	0.02	0.01	0.01	0.01
<b>Gini</b>	0.09	0.09	0.08	0.07
<b>Theil</b>	0.04	0.03	0.03	0.02
<b>Polarization Index</b>	0.47	0.54	0.50	0.48
<b>Descriptive_stat</b>	<b>1980_gdppc</b>	<b>1990_gdppc</b>	<b>2000_gdppc</b>	<b>2010_gdppc</b>
<b>ECA</b>	1,722.78	1,519.09	1,660.52	2,273.51
<b>ECE</b>	17,636.98	19,604.79	23,614.60	27,684.60
<b>ESCWA</b>	4,530.41	3,417.71	4,630.86	7,197.26
<b>ECLAC</b>	6,238.84	6,076.79	7,950.87	9,880.48
<b>ESCAP</b>	2,427.95	3,213.18	4,417.22	6,818.37
<b>Between_Inequality</b>	0.43	0.40	0.37	0.28
<b>Within_Inequality</b>	0.24	0.24	0.28	0.20
<b>Gini</b>	0.46	0.45	0.43	0.37
<b>Theil</b>	0.67	0.65	0.65	0.47
<b>Polarization Index</b>	0.65	0.62	0.56	0.59
<b>Descriptive_stat</b>	<b>1980_hdi</b>	<b>1990_hdi</b>	<b>2000_hdi</b>	<b>2010_hdi</b>
<b>ECA</b>	0.39	0.42	0.42	0.49
<b>ECE</b>	0.74	0.77	0.80	0.84
<b>ESCWA</b>	0.46	0.51	0.58	0.64
<b>ECLAC</b>	0.58	0.63	0.68	0.74
<b>ESCAP</b>	0.44	0.50	0.57	0.65
<b>Between_Inequality</b>	0.03	0.02	0.02	0.01
<b>Within_Inequality</b>	0.02	0.01	0.01	0.01
<b>Gini</b>	0.11	0.10	0.09	0.08
<b>Theil</b>	0.04	0.03	0.03	0.02
<b>Polarization Index</b>	0.62	0.60	0.56	0.58



Annex Table 3: Descriptive measures across Developing Regions for Human Capital, GDPpc, and the Human Development Index

<b>Descriptive_stat</b>	<b>1980_hc</b>	<b>1990_hc</b>	<b>2000_hc</b>	<b>2010_hc</b>
<b>ECA</b>	1.46	1.68	1.84	1.99
<b>ESCWA</b>	1.43	1.67	1.89	2.10
<b>ECLAC</b>	1.80	2.08	2.34	2.57
<b>ESCAP</b>	1.66	1.83	2.07	2.27
<b>Between_Inequality</b>	0.00	0.00	0.00	0.00
<b>Within_Inequality</b>	0.01	0.01	0.01	0.01
<b>Gini</b>	0.02	0.02	0.03	0.03
<b>Theil</b>	0.02	0.01	0.01	0.01
<b>Polarization Index</b>	0.10	0.12	0.13	0.15
<b>Descriptive_stat</b>	<b>1980_gdppe</b>	<b>1990_gdppe</b>	<b>2000_gdppe</b>	<b>2010_gdppe</b>
<b>ECA</b>	1,726.27	1,523.74	1,666.04	2,282.55
<b>ESCWA</b>	4,386.19	3,365.85	4,701.23	7,601.22
<b>ECLAC</b>	6,161.73	5,917.76	7,703.43	9,631.19
<b>ESCAP</b>	1,564.29	2,165.23	3,268.75	5,779.55
<b>Between_Inequality</b>	0.17	0.09	0.09	0.06
<b>Within_Inequality</b>	0.21	0.19	0.20	0.19
<b>Gini</b>	0.24	0.19	0.19	0.16
<b>Theil</b>	0.37	0.28	0.29	0.25
<b>Polarization Index</b>	0.45	0.33	0.30	0.25
<b>Descriptive_stat</b>	<b>1980_hdi</b>	<b>1990_hdi</b>	<b>2000_hdi</b>	<b>2010_hdi</b>
<b>ECA</b>	0.39	0.42	0.42	0.49
<b>ESCWA</b>	0.45	0.51	0.57	0.64
<b>ECLAC</b>	0.58	0.62	0.68	0.74
<b>ESCAP</b>	0.42	0.48	0.55	0.64
<b>Between_Inequality</b>	0.01	0.00	0.01	0.01
<b>Within_Inequality</b>	0.01	0.01	0.01	0.01
<b>Gini</b>	0.04	0.04	0.05	0.05
<b>Theil</b>	0.02	0.02	0.02	0.02
<b>Polarization Index</b>	0.38	0.32	0.37	0.42

Annex Table 4: Descriptive measures for the Developing vs Developed Countries for Human Capital, GDPpc, and the Human Development Index

<b>Descriptive_stat</b>	<b>1980_hc</b>	<b>1990_hc</b>	<b>2000_hc</b>	<b>2010_hc</b>
<b>Developed</b>	2.73	2.90	3.11	3.27
<b>Developing</b>	1.67	1.91	2.13	2.31
<b>Between_Inequality</b>	0.02	0.02	0.01	0.01
<b>Within_Inequality</b>	0.02	0.02	0.02	0.01
<b>Gini</b>	0.09	0.07	0.06	0.05
<b>Theil</b>	0.04	0.03	0.03	0.02
<b>Polarization Index</b>	0.60	0.49	0.44	0.42
<b>Descriptive_stat</b>	<b>1980_gdppc</b>	<b>1990_gdppc</b>	<b>2000_gdppc</b>	<b>2010_gdppc</b>
<b>Developed</b>	18,650.05	23,764.80	31,500.97	34,378.20
<b>Developing</b>	2,225.20	3,285.25	3,748.91	6,091.89
<b>Between_Inequality</b>	0.53	0.46	0.53	0.34
<b>Within_Inequality</b>	0.15	0.20	0.13	0.14
<b>Gini</b>	0.48	0.43	0.46	0.35
<b>Theil</b>	0.68	0.66	0.66	0.48
<b>Polarization Index</b>	0.79	0.70	0.80	0.70
<b>Descriptive_stat</b>	<b>1980_hdi</b>	<b>1990_hdi</b>	<b>2000_hdi</b>	<b>2010_hdi</b>
<b>Developed</b>	0.77	0.81	0.86	0.89
<b>Developing</b>	0.44	0.51	0.56	0.63
<b>Between_Inequality</b>	0.03	0.02	0.02	0.01
<b>Within_Inequality</b>	0.01	0.01	0.01	0.01
<b>Gini</b>	0.11	0.08	0.07	0.05
<b>Theil</b>	0.05	0.03	0.03	0.02
<b>Polarization Index</b>	0.71	0.56	0.51	0.42

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