Title: Income Disparity in China

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Critical Comparison between Multidimensional Poverty Index and Staple Calorie Share: A Case Study of Income Disparity in China

Abstract

The aim of this paper is to summarize the advantages and disadvantages of poverty and deprivation measurement including the Multidimensional Poverty Index (MPI) and Staple Calories Share (SCS). MPI is a robust measurement that accounts for numerous aspects of deprivations and poverty, hence directly measures the level of welfare and wellbeing of households across 104 countries. SCS is a measurement that focus on the income of households specifically spent toward staples in order to understand the level of welfare and wellbeing, given the priority preferences on staples and marginal utility of calorie. This paper concludes that MPI should be considered as a complement tool to the existing poverty measurement as it allows robust measurements that previous studies did not account for, while SCS should be refined to become an indicator in a more robust measurement. The utilization of both measurements are essential in term of providing insightful guide for the formulation of policy that employ to alleviate poverty and deprivation as well as mark the progress of the developing countries associated with Millennium Development Goals (MDGs).

1. Introduction

The aim of this paper is to critically summarize major findings of the following two journal articles "Wealth of Data – A Useful New Way to Capture many Aspects of Poverty" and "Acute Multidimensional Poverty: A New Index for Developing Countries." The findings of the selected articles will be used in comparison and contrast to the revealed preference approach in staple calorie share, hence augmenting the understanding of the current study in poverty. The second part of the paper aims to ascertain the interrelated relationships among the dimensions of the multidimensional index using an empirical case study of China. Policy implication will be provided in order to address the findings and results of the poverty measurement, hence facilitating the effectiveness of the study.

2. The Summary of 'A Wealth of Data' and 'Acute Multidimensional Poverty'

Based on an article published in 'The Economist' (2010), Poverty is regard to people as the deficiency in wealth or materials of a person relative to a more affluent person. The study of such issue involves the analysis in volume of material accumulation and the importance of such materials. Examples of shortage in food supply in a person's nutritional intake can highlight the essentiality of study in poverty, thus thresholds of poverty should be emphasized clearly. The threshold of 'a-dollar-a-day' and 'two-dollars-a-day', employed by the United Nation, determines the level of poverty, thus determining the ability to purchase the essential staple of food. The measurement takes a proportion of the overall population and record the number people who are under the established threshold in term of deficiency in resources in the purchasing power.

The threshold measurement of such nature, despite many advantages, emphasizes severely on the income level and its distribution, hence directly translating income level into the level of welfare and health. The threshold measurement, as argued by Amartya Sen, lacks the multidimensional scale to measure the wellbeing and welfare of a person in poverty and deprivation, as

increase in income level does not always lead to improvement in welfare or wellbeing. A new development in an index that measures the multidimensional view in poverty and deprivation, based on Sen's Idea, is being developed by the Oxford Poverty and Human Development Initiative to encompass and account data from 104 developing nations and look at three dimensions of poverty – Education, Health, and Standard of living (Alkire & Santos, 2010). The 'Multidimensional Poverty Index' is being utilized by the United Nations (UN) in the publish of the next 'Human Development Report', as the index looks robustly at the 10 essential indicators based on the three dimensions of need such as access to electricity, access to clean water, level of education, level of wellbeing in term of nutritional intake, etc. The aspects of need then calculated based on the ten indicators to determine the percentage of population who are fall under the category of "multidimensional poor". The levels of dimension in this index lead to a better understanding and determinants in study of poverty and deprivation, as the threshold measurement emphasizes too severely on income level thus omitting personal preference, hence ambiguously categorize the selected proportion of people less accurately (The Economist, 2010).

Alkire and Santos (2010) utilizes three datasets to look at multiple dimensions and indicators (mentioned above) including the Demographic and Health Survey (DHS), Multiple Indicators Cluster Survey (MICS), and Wealth Health Survey (WHS). The structures of the index looks at weighted indicators and censored headcount in the population proportion in term of category placement of poverty and deprivation threshold - the categories placement focuses on being poor or deprived under multiple indicators (from 2 to 6 indicators) and under any specific indicator. The censored headcount used in the index involves the income threshold of national poverty line (national headcount) and 1.25 or 2 dollars-a-day, hence concludes that 1.7 billion people worldwide are categorized under this threshold of poverty and deprivation. Multidimensional Poverty Index does not strictly follow the income threshold but instead utilizing indicators to specify the headcount in accordance to specific countries and ranging theirs level of income, level of welfare, and state of wellbeing. The index differs impoverished population proportion based on

selected indicators following the Millennium Development Goals[1] (MDG), hence generating precise measurements of the headcount of the people proportion and reduce the overstatement and misinterpretation of the threshold of poverty and deprivation.

The result of the Multidimensional Poverty Index concludes evidences that 1.7 billion out of 5.2 billions people are acutely and dimensionally poor as members and families in the selected data face negative aspects of poverty such as malnourishment, mortality, lack of schooling, and low living standard (no access to clean water and electricity, etc.). 32% of the total population in the dataset is considered to be poor - 26% of the total population is living under the 1.25 dollars-a-day threshold, while 48% are living under the 2-dollars-a-day threshold.

Figure 5: Ranking of 93 countries by MPI compared to Income Poverty
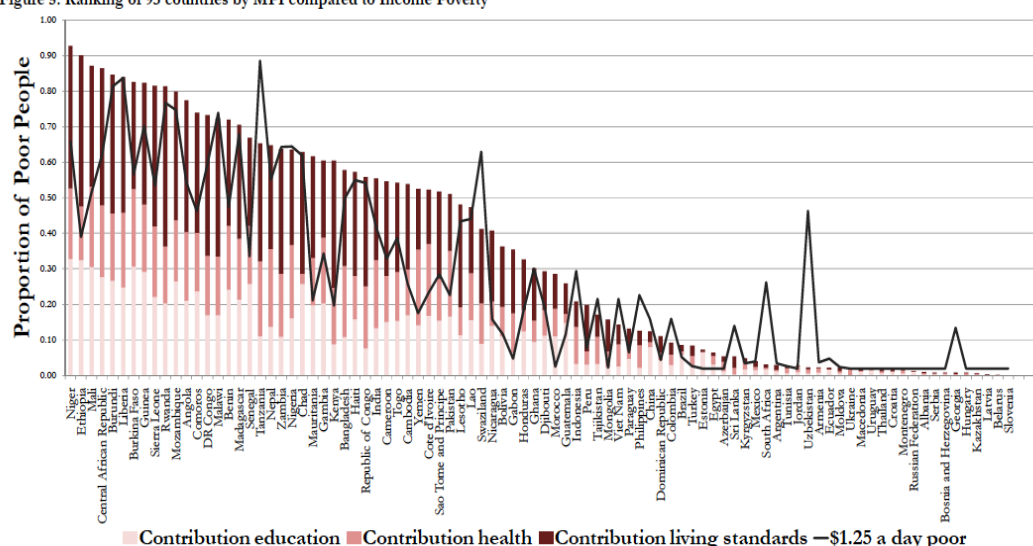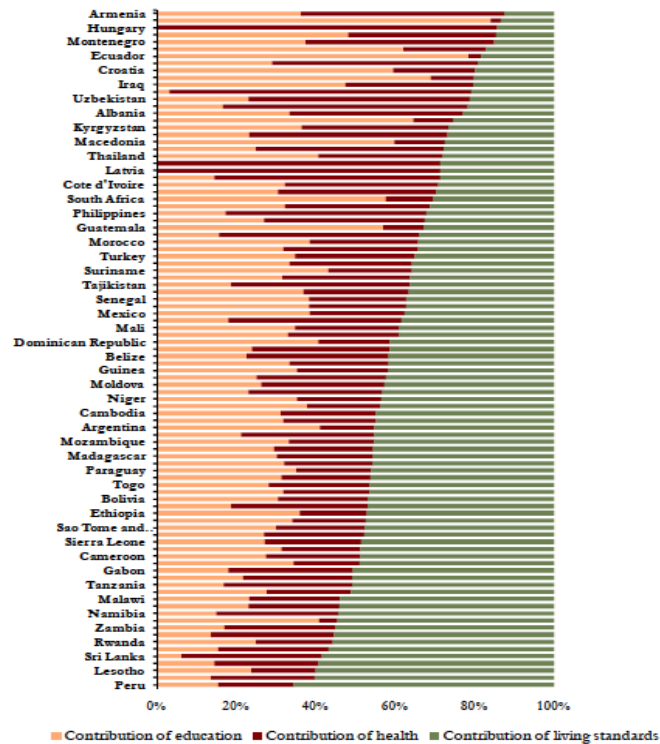
Source: Alkire & Santos, 2010

The graph in Alkire & Santos (2010) displays the headcount in selected countries with accordance to the dimensions of the index conjoint to the headcount in income poverty threshold. The index headcount takes the form of bars representing the three dimensions of the multidimensional poverty index and income poverty headcount takes the form of fluctuating black line. The

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[1] Alkire, S. & Santos, M. E. (2010). Acute Multidimensional Poverty: A New Index for Developing Countries. Oxford Poverty and Human Development Initiative Working Paper No. 38 (OPHI), University of Oxford, P.1-139.

index measures 24 countries with headcount over 2-dollars-a-day threshold and 36 countries with headcount lower than 1.25-dollars-a-day threshold, thus giving rise to a conflict relative to income poverty threshold measurement as seen by the discrepancy areas between the bars and line on the graph. The conflict may result from the indicators and data that the index uses as it measures poverty too directly, hence measuring more variables in addition to multiple-factors deprivation using data that may not be accurately captured and translated. Another reason is that the index measures poverty in different scenarios than income threshold measurement, hence it might yields different results given that the dimensions of multidimensional poverty index coincide and overlap with a particular income group more closely like the 1.25-dollars-a-day (Alkire & Santos, 2010).

Multidimensional Poverty Index measures five times the amount of multidimensional impoverished population in rural areas relative to urban areas. 83% of world impoverished population and more than 50% of total population in selected developing countries live in rural areas, hence explaining the intensity of poverty in such concentrated area. South Asian countries contains double the amount of multidimensional impoverished proportion of population relative to Sub-Saharan Africa, mostly found in India whereas only 8 states of such country are acutely poor as the 26 states of the African countries. Alkire & Santos (2010) asserts increase in headcount leads to the increase in intensity of poverty, thus emphasizing the correlated relationship between the two factors. Ranking of countries are dependent of the factor intensity and headcount as well, however, the most attentive aspect should be forward to the study of outliers (e.g. high intensity of poverty and low headcount, etc.). Further study of outlier allows for improvement in multidimensional poor by adjusting the two factors, hence formulating effective and efficient path and policy for poverty alleviation in a variety of scenarios.

Contribution of Dimension to Multidimensional Poverty Index

Source: Alkire & Santos (2010)

"The contribution of each dimension is the sum of the of the contribution of each indicator, (Alkire & Santos, 2010, p. 38)." The two biggest dimensions of deprivation are the contribution of education and living standard, while the contribution of health is a subsequent factor of living standard. Hence, policy implication can be drawn from the analysis of the graph. For countries, arguably with low contribution of living standard as a factor to multidimensional poor, should be focused on the improvement on education and vice versa (Alkire & Santos, 2010).

Figure 13. Scatter plot of GDP per capita vs. MPI headcount
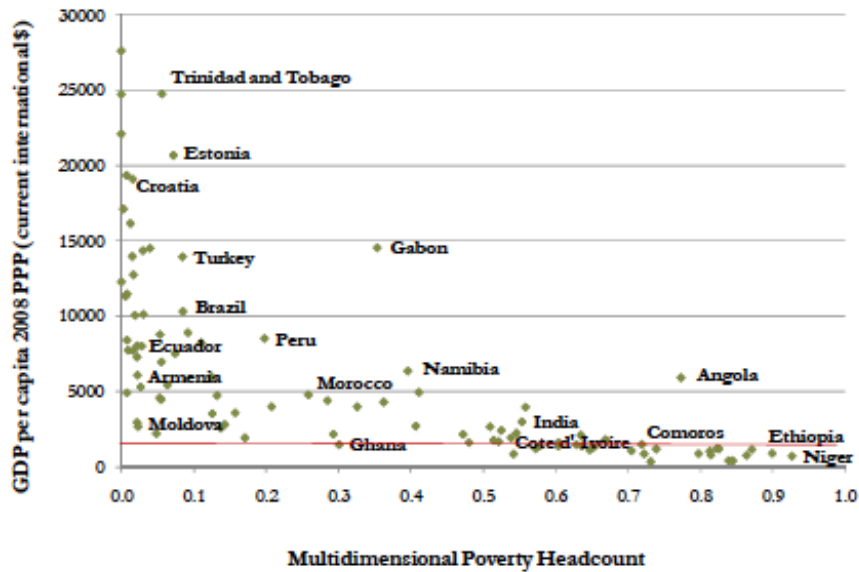
Source: Alkire and Santos (2010)

There are some outliers that indicates few low gross domestic (GDP) countries are much effective in satisfying the MPI's indicators than those of high GDP countries, however, most higher GDP countries are generally more effective in reaching the indicators. There are difficulties arise when household data of income are missing (WHS countries), hence desperate measures are being applied in order to categorize the placement of whether similar households and different households are poor using different measurements. The forms of measurement are the correlation measurement of income poor and MPI poor, thus sorting households into four different categories: A. Not income and MPI poor; B. Not income poor but MPI poor; C. Income poor but not MPI poor; D. Income and MPI poor. If the correlations between MPI and income poverty are perfectly synchronized then the households shall fall into category A or D, while category B and C represent type I (inclusion) and type II (exclusion) errors relative to the magnitude of mismatch in indicators used in each form of measurement. Hence, this problem gives rise to the exclusion of multidimensional poor or the inclusion of multidimensional non-poor. Further example, given by Alkire and Santos (2010), indicates the concurrence of the two measurements in stating that if a household in any particular country is income poor than the likelihood of multidimensional poor is extremely high.

Nonetheless, the probability in categorical placement of a household that is non-income poor but MPI poor still exists as the exclusion errors still persist and vice versa, hence the insight that non-income poor households in developing countries are still highly possible to be placed as MPI poor while income poor household in more developed are not MPI poor due to inclusion error (Alkire and Santos, 2010).

3. The Summary of 'Staple Calorie Share' and 'Reveal Preference Approach'

Based on an article published in the 'The Economist' (2011), The effort to alleviate deficiency in food supply for developing nations is one of the major aspects of the UN's millennium development goal. To pursue such noble goal is no easy task given that the preferences of the selected impoverished proportion of the population are implicit, hence reduction in poverty does not always guarantee improvement in wellbeing or nutritional intake. The example of growth in real income and falling food staples prices in India between 1980-2005 further induce the proportion of selected population to reduce their nutritional intakes, hence creating puzzling problem for the economists. The recent findings by Jensen and Miller's revealed preference approach further suggest the problem in the counting of hunger found in governments and agencies. The permanent benchmark of 2,100 calories as the guide is the source of the problem, as the amount of nutritional intake differ from person to person thus the report of calorie intakes focus too explicitly on the number, hence omitting the essentiality of micronutrients such vitamins or minerals.

Hunger is an awful experience so the initial utility gained from eliminating such experience is incredibly high, hence a major part of income will be spent on filling staples such as rice or wheat. Nevertheless, the marginal income will be focused on other aspects of foods, thus specific income on staples is a suitable measurement of hunger as the calories share from staples reduces rapidly after the person is no longer hungry. The measurement of a person's dietary structure allows a better understanding of the nutritional intakes; therefore, the price of the ingredients of such structure yields the amount of staples intakes thus determining the level of hunger. The Staple Calorie Share (Income poverty threshold) can theoretically analyze the actual person's intake

in account of dietary guideline in term of sizes, ages, and food prices. In example of China, the Staple Calorie Share are calculated to be around 80-85% of the total calorie intake, hence the threshold measurement suggests that the proportion of population who consume staples below 80% would place less emphasis on consuming staples as the primary source of calorie.

Data of 16,000 individuals from 3,200 households between 1991-2000 suggests that the impoverished proportion of population would emphasize on staples as the primary source of calories, hence conforming to the basic idea of substitution. Whereas staples intake is decreasing inversely related to increasing income, hence people would vary theirs sources of calories as their wealth increase. The subsidy from the Chinese government for the impoverished proportion of population to consume more cereal lead the proportion to increase their consumption in meat and shrimps instead, hence moving from staples as the main source of calorie thus conclude less hunger as a whole (The Economist, 2011).

4. Comparisons and Contrasts of MPI and Staple Calorie Share

The most utilized measurement of poverty is the income poverty threshold such as 'Staple Calorie Share', in which emphasizes the use of national poverty line thus making income level an instrumental variable in the determinant of poverty categorical placement (Alkire & Santos, 2010). Multidimensional Poverty Index (MPI) and Income Poverty are related on many levels, especially the correlation in the category of living standard deprivation. The reason of such high correlation between income poverty threshold and MPI is on based on the same headcount in term of income measurement as indicators for MPI. The table, from Alkire & Santos (2010), displays the correlations of MPI and income poverty. The income poverty threshold uses three headcounts separately, while MPI incorporates them as indicators hence the high correlations between both poverty measurements. However, more people that are estimated to be MPI poor due to direct measurement of the living standard, health, and education rather than focusing on income or one dimension of nutrition.

Figure 11: Correlations of income poverty headcounts with MPI and dimensional headcounts

		Pearson	Spearman	Kendall Tau-a	Kendall Tau-b
$1.25/day Headcount	H Education	0.73	0.78	0.57	0.58
	H Health	0.78	0.82	0.61	0.62
	H Living Standard	0.88	0.90	0.72	0.74
	MPI	**0.85**	**0.88**	**0.67**	**0.70**
$2/day Headcount	H Education	0.77	0.79	0.59	0.60
	H Health	0.82	0.83	0.63	0.64
	H Living Standard	0.90	0.90	0.73	0.74
	MPI	**0.86**	**0.88**	**0.70**	**0.71**
National Poverty Headcount	H Education	0.53	0.54	0.37	0.37
	H Health	0.58	0.57	0.41	0.41
	H Living Standard	0.58	0.61	0.43	0.44
	MPI	**0.55**	**0.57**	**0.42**	**0.42**

Source: Alkire & Santos (2010)

Figure 16: Income poverty vs. MPI poverty: insightful mismatches
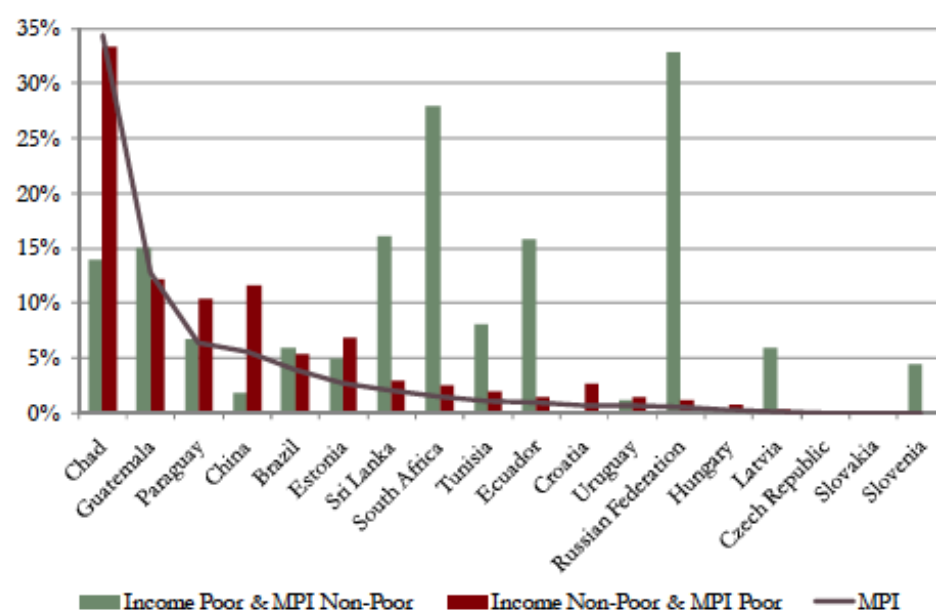
Source: Alkire & Santos (2010)

The graph displays the mentioned divergence in MPI and income poverty emphasizing the correlation measurement, whereas countries at lower economic development stages exhibit great divergence in poverty measurement due to inclusion and exclusion errors. So households that are non-income poor in any particular country are not necessarily non-MPI poor, thus the overstatement of multidimensional measurement may excessively emphasizes the deprivation and

poverty given the selected dimensions. The importance of income as an indicator in poverty measurement is quintessential, thus MPI should be not be regarded as a standalone measurement but a complement to the existing measurement. The continuous development of poverty measurement is essential in order to provide a clear direction for economic development of any particular countries, especially developing countries so having multidimensional indicators inclusive of income will be the next aim of the research.

Stark differences can be compared between the two measurements as the result of one measurement may fail to satisfy the indicator of the other, as proven by the comparison in India whereas the wellbeing and welfare of selected proportion of the population, measured by the income poverty threshold measure, are higher than the multidimensional poverty index. The multidimensional poverty index yields more accurate results on the deficiency in the material volume accumulation, level of malnutrition, and level of education - thus allowing more meaningful interpretation in economic and policy aspects, hence contributing more effectively in the major effort and formulation of policies that aim to alleviate poverty and deprivation at the sources of problems. The refinement of the index will be the upcoming priority, however, the multidimensional poverty index is a major breakthrough in the study of poverty and deprivation. The drawback of the index is the inability to measure poverty threshold accurately given relevant indicators in more developed countries (The Economist, 2010).

5. Poverty Measurements and Income Disparity: A Case Study of China

China, in the last thirty years, has redefined a new term of economic growth with average annual growth rate of 9% and improvement in productivity across a number of sectors (Khin, 2010; Sach, 2005). The poverty level is reduced from 250 million in 1978 to 37 million in 1999, hence reducing the poverty headcount drastically, while lifted a large proportion of people out of the poverty line. Furthermore, life expectancy at birth has increased to 70.3 years and the adult illiteracy rate significantly dropped to only 15.9% in 2000 from with 34.5% in 1980 (Biggeri, 2003), hence rapidly achieving all indicators of the

MDGs and transitioning into a more developed economic stage. This major growth is influenced by many restructurings in the market system and financial institutions commenced by Deng Xiao Ping's economic reform since 1978, which lead to significant improvements across all sectors in the economy (Khin, 2010; Sachs & Wing Thye, 2000). To be more specific, before 1978, China adopted a centrally planned economy with the characteristics of extremely low productivity across all industries, widespread poverty, and equal distribution of wealth in term of rationing.

China has experienced rapid economic growth in the last three decades thus it is important to bear in mind that China, at the same time, witnessed a dramatic increase in income inequality and uneven distribution of wealth thus constituting unfair disadvantage for rural households in term of omitting the accuracy of headcount (Khin, 2010). The uneven regional economic growth characterized by the emergence of severe income disparity and uneven distribution of wealth across the urban and rural cohorts should also be emphasized (Khin, 2010; Guo, 2009). There is a vast literature and consensus on the causal relationships of economic development and economic growth on income inequality. Economists usually utilize Gini coefficient as an indicator to show the equity level of the distribution of wealth. The measurement is standardized to range between 0 and 1, where 0 means complete equitable distribution of income and 1 means complete inequitable distribution of income (Hindriks & Myles, 2006). According to the international standard[2], if the coefficient below 0.3 means "optimal state"; the figure between 0.3 and 0.4 means "normal state"; the one above 0.4 refers to "warning state" and the one reaching 0.6 refers to the "dangerous state" where a social turmoil could occur anytime. The formula of Gini coefficient is as followed:

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[2] China Economic Net, "China's Rich-Poor Gap have been Closed to the Warning Level"
< http://en.ce.cn/Insight/200408/05/t20040805_1425648.shtml >

Table 10
Gini indices of income inequality

	Rural	Urban	National	
			Without adjustment for COL difference	With adjustment for COL difference
1980	24.99	n.a.	n.a.	n.a.
1981	24.73	18.46	30.95	27.98
1982	24.40	16.27	28.53	25.91
1983	25.73	16.59	28.28	26.02
1984	26.69	17.79	29.11	26.89
1985	26.80	17.06	28.95	26.45
1986	28.48	20.66	32.41	29.20
1987	28.53	20.20	32.38	28.90
1988	29.71	21.08	33.01	29.50
1989	30.96	24.21	35.15	31.78
1990	29.87	23.42	34.85	31.55
1991	31.32	23.21	37.06	33.10
1992	32.03	24.18	39.01	34.24
1993	33.70	27.18	41.95	36.74
1994	34.00	29.22	43.31	37.60
1995	33.98	28.27	41.50	36.53
1996	32.98	28.52	39.75	35.05
1997	33.12	29.35	39.78	35.00
1998	33.07	29.94	40.33	35.37
1999	33.91	29.71	41.61	36.37
2000	35.75	31.86	43.82	38.49
2001	36.48	32.32	44.73	39.45
2002	n.a.	32.65	n.a.	n.a.

Source: Ravallion & Chen (2010)

Guo (2009) identifies that the rural areas display a moderate inequitable distribution of income in 1952, with the Gini coefficient of 0.23. The trend of rural inequity has drastically increased, with Gini coefficient reaching 0.37 in 2007 compared to 0.23 in 1952, thus it shows that the disparity in income is greatly deviated in the rural cohorts. By contrast, the urban Gini coefficient is vastly smaller than the rural in the 1950s, however, its rising trend exceeds the rural cohort in 2007, where the urban Gini coefficient is technically 0.4. So Guo (2009) states that there is income disparity in both regional cohorts, however, real income for urban is larger than that of rural cohorts in addition to migration of rural citizens into urban area. The overall measurement of China as a whole is 0.496, which implies that the disparity of distribution of wealth is high while still expected to be on a rising trend. Ravallion and Chen (2007) use Rural Household Surveys (RHS) and the Urban Household Surveys (UHS) from China's National Bureau of Statistics (NBS) to construct the Gini index (Ravallion & Chen, 2007). Both rural and urban Gini coefficient increase gradually, with the rural figures significantly higher than urban figures in 1980. Equivalently, inequity in rural cohort is not significantly larger than urban cohort in later date (Guo, 2009; Ravallion & Chen, 2007). Nationwide inequity, as expected, is much larger than the figure in either rural or urban areas. So the result from Alkire and Santos

(2010) is accurate in term of rural area contains at least 5 times the amount of multidimensional poor than urban area.

Ravallion and Chen (2007) use the Rural Household Surveys (RHS) and the Urban Household Surveys (UHS) from China's National Bureau of Statistics (NBS) to conduct their work. It can be conclude in their work that over the years, Gini coefficients has been on an increasing trend - 4 percentage point in the urban cohort and 2 percentage points in the rural cohort, and 3 percentage points in the national case; their estimate of the national Gini in 2001 was 45%. And also they use income difference between rural and urban areas to demonstrate the uneven distribution in wealth. They provide an intuitive concept by illustrating the disparity chart using income difference between rural and urban cohorts in relative and absolute term. Relative inequality (the ratio of urban mean income to rural mean income) increases from 1980 to 2000. There is a clear overall increasing trend in the ratio, holding adjustments constant, as well the difference in cost of living. (Ravallion & Chen, 2007).

How can uneven growth and disparity be explained? First of all, during China's transition from a fully planned collective economy to a market-oriented economy, structural and institutional reforms engage important roles in the pace of the economic development. There are vast numbers of policy that favor Special Economic Zones (SEZs) and coastal regions. Addition to geographical advantage like coastal regions, those areas enjoys special government subsidies and the policies that welcome foreign direct investment (FDI). It is important to underline that FDI not only enables direct gains including inflow of foreign capital assets, access to advanced technologies, remarkable progress in R&D capabilities, but also indirectly provides positive simulative such as introduction of efficient management, labour specializations, and improved international distribution networks (Gang & Ruifang, 2007; Ping, et al., 2010; Wei & Xiaohui, 2009).

An additional probable source that may have a deep impact on income disparity may partly due to the rural taxation system and the procurement system. The tax system directly tax agricultural output after procurement, which create heavy burden on the rural cohort thus reduce the amount of consumption, increased labour, and ultimately, the growth of rural agriculturalists (Tao, 2002).

And also, the policy of "price scissors" kept down the price of food in relation to manufactures. In this way, the urban households paid indirectly for urban industrialization, while benefitting noticeably from the procurement system. Part of the investable surplus was diverted to enable urban workers to enjoy a higher standard of living than their rural counterparts (Knight, et al, 2006).

Poverty in rural area within China, based above evidences, can be caused by unfavorable policies aim to improve only a certain geographic locations, therefore neglecting the advantages of urbanizing the country in entirety or improving deprived areas that contains no beneficial opportunities for exploitation. Households in Landlocked and deprived provinces are the main victims of unfavorable policies, hence unable to enjoy the economic growth that shared by arguably more prosperous provinces and the urban areas. Income disparity is an important indicator that should be included in the measurement of poverty and deprivation as the intuition of varying income across households depending on location cohorts within a country may contain insightful guide for effective policies aim to reduce poverty and deprivation. The policy of redistribution in wealth could be formulated in order to alleviate poverty and deprivation in certain location cohorts that are unable to be urbanized or rapidly improved, hence redistributing wealth from richer households to poorer households.

6. Policy Implication

Majority of developed countries around Europe and Central Asia contains low to none MPI poverty and deprivation - therefore poverty alleviation policy should be taken different approaches relative to countries in South Asia and Africa. In order to facilitate the growing need and improvement of human resource as well as the development of developing countries, instrumental policies should be aim at prioritized areas such as healthcare, education, infrastructure, and food. Policies imposed and implemented should be associated with the Millennium Development Goals (MDGs) from the United Nation (UN), as possible monitoring and achievements could simply mark the stage of progress and further guide the stage of development. Using the MPI, SCS and Income

poverty headcounts effectively can provide insightful tools for direct policy guiding, because the improvement in all and/or specific indicator would provide information that policy makers required to address the problem directly.

7. Conclusion

MPI and SCS are measurements that used in the study of poverty and deprivation, where poverty refers to certain deprivation in wealth or material between an individual relative to another. MPI is a robust measurement that contains three dimensions and ten indicators. The dimensions are the contribution to health, education, and living standard while the indicators are the subset of the three dimensions (child mortality, nutrition, year of education, education attendance, sanitation, assets, cooking fuel, access to electricity, clean water, and flooring). SCS is a poverty measurement that accounts for the proportion of income spent toward staples, thus determining the priority of marginal utility of calorie as well as eliminating the non-existing nutritional consensus of calorie benchmark (the importance of obtain high calorie to reduce hunger). The function of SCS is a penalty function with decreasing function whereas increase in wealth or income leads to decrease in the marginal dependence on staple consumption, hence the penalty for calorie consumption decrease proportionally to the staple consumption share as income rises. This implication gives an insightful understanding to the preference of wellbeing within particular house whom wish to prioritize staples or other aspect of consumption such as taste.

Income disparity in the case study of China has contributed to the study of poverty and deprivation in term of uneven wealth across location cohorts. China has experienced rapid economic growth in the last three decades, thus experiencing drastic decrease in poverty headcount as well as lifting increasing proportion of population out of poverty line. The prosperity of economic growth also gives rise to the problem of uneven distribution in wealth and non-uniform policy, where rural cohort are considerably worse off in comparison to urban cohort. Urban cohorts around the coastal regions and SEZs enjoy subsidy policy such as stable food prices, better wage, and job opportunities as well as better

access to better living standard and facility. On the other hand, rural cohorts is faced with harsh policy such procurement program, were a proportion of agricultural output is taken at a price that lower than the market price. The drastic differences between the two cohorts are noticeable in the Gini coefficient, where income disparity is large, thus gives problems in the formulation of policy to alleviate further poverty given the ineffectiveness due locational impact.

Policies should be aim to prioritized area such as health, education, infrastructure, and living standard. There are the main factors that contribute to the growth of the economy as well as the wellbeing and welfare of the population. Policies, which are robustly informed by effective poverty and deprivation measurement tool, should be effective in addressing the problem in addition to effective alleviation of poverty and deprivation.

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