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## **STRUCTURAL TRANSFORMATION AND INCOME DISTRIBUTION: KUZNETS AND BEYOND**

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# Structural Transformation and Income Distribution: Kuznets and Beyond\*

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## Abstract

This paper explores the question of structural transformation and income distribution through the eyes of the pioneer in such analysis, Simon Kuznets. It argues that his 1955 paper stands the test of time in providing insights which are relevant to understanding current phenomena like the evolution of Chinese inequality. The paper shows how the Kuznetsian framework can be used, for example, in predicting the differential relationship between urbanization and inequality in India versus China, in assessing the detail of the contribution of sectoral mean and inequality evolution to overall inequality change, and in linking the recent inequality of opportunity literature to rural-urban migration. Thus the original Kuznets framework has the seeds of getting us beyond Kuznets as sometimes (mis)understood in the literature on structural transformation and income distribution.

**Keywords:** Kuznets curve, inequality and development, rural-urban migration, Chinese inequality, place of birth and equality of opportunity.

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## 1. Introduction

Structural transformation can mean many things and, once it is specified, it can be used for many purposes. The classical sense of structural transformation goes back to Arthur Lewis and Simon Kuznets in the 1940s and 1950s as the movement of population and economic activity from agriculture to industry. There was a recognition in these and other writers of the time that these classifications were themselves too narrow. Arthur Lewis, for example, included the urban informal sector as part of his famous “unlimited supplies of labor”:

“[...] the phenomenon is not, however, by any means confined to the countryside. Another large sector to which it applies is the whole range of casual jobs--the workers on the docks, the young men who rush forward asking to carry your bag as you appear, the jobbing gardener, and the like. These occupations usually have a multiple of the number they need, each of them earning very small sums from occasional employment; frequently their number could be halved without reducing output in this sector.” (Lewis, 1954, p 141)

Thus in a general sense structural transformation was a move of the population from low productivity to high productivity sectors. The evolution of productivity *within* these sectors, for example through changing commodity mix or through learning by exporting, has generally been the focus of the more recent literature. But the classical sense of structural transformation starts with an imperfection in the economy—labor having very different productivity in different sectors—and proceeds with a shift of this labor across sectors to high productivity sectors.

The Lewis (1954) model is an elegant formulation of this process where accumulation by capitalists in the industrial sector expands production in this sector and draws labor in from the low productivity sector at a constant wage (the wage being constant because of the “unlimited” nature of its supply), thereby increasing profits, accumulation, and further expansion in the industrial high productivity sector. The factor distribution of income moves in favor of capital. But the move of population will also have implications for the personal distribution of income. The process in this form ends when so much labor has been pulled out of the agricultural sector that labor is no longer in unlimited supply; agricultural wages begin to rise and eventually match those in the industrial sector. The “Lewis turning point” has been reached.

The specific implications of this process of structural transformation for income distribution was explored by Kuznets (1955) in a classic paper, and it is this paper which provides the launch pad for this chapter in the next section, Section 2, which sets out the Kuznetsian basics. Section 3 then presents an analytical framework for assessing inequality and poverty during structural transformation in a Lewis-Kuznets setting. Section 4 takes on critiques of the Kuznets frame, old and new. While accepting much of this criticism, the section argues that some of it is misdirected, and the general framework still has a lot to teach us. Section 5 concludes.

## 2. Kuznetsian Basics

The classic Kuznets (1955) is not read much in the original these days, and most simply get from it the “Kuznets curve” of the inverse-U shaped relationship between inequality and per capita income, the relationship which launched a thousand empirical investigations. It is worthwhile to make a brief excursion into the original to situate the vast literature around it.<sup>1</sup>

Kuznets was above all an empirical economist, well known for his work on national income accounts. He brought the same sensibility to income distribution, setting out requirements for data:

“First, the units for which incomes are recorded and grouped should be family-expenditure units, properly adjusted for the number of persons in each [.....] Second, the distribution should be complete, i.e., should cover all units in a country rather than a segment either at the upper or lower tail. Third, if possible we should segregate the units whose main income earners are either still in the learning or already in the retired stages of their life cycle [.....] Fourth, income should be defined as it is now for national income in this country, i.e., received by individuals, including income in kind, before and after direct taxes, excluding capital gains. Fifth, the units should be grouped by secular levels of income, free of cyclical and other transient disturbances [.....] Furthermore, if one may add a final touch to what is beginning to look like a statistical economist’s pipe dream, we should be able to trace secular income levels not only through a single generation but at least through two-connecting the incomes of a given generation with those of its immediate descendants.” (Kuznets, 1955, pp. 1-3).

Income distribution analysts today would do well to test their data against these Kuznetsian criteria.

Kuznets then went on to assess the evolution of inequality in three countries for which adequate data were available:

“The data are for the United States, England, and Germany—a scant sample, but at least a starting point for some inferences concerning long-term changes in the presently developed countries. The general conclusion suggested is that the relative distribution of income, as measured by annual income incidence in rather broad classes, has been moving toward equality—with these trends particularly noticeable since the 1920’s but beginning perhaps in the period before the first world war.” (Kuznets, 1955, p. 4).

According to Piketty (2014) it was this reading of the data which set the literature off in the wrong direction, leading to expectations of continuous declining inequality in the post war period, a trend which was seen not to have continued half a century on. However, what is less appreciated is that Kuznets himself raised questions about the declining trend in light of underlying economic processes:

“The present instalment of initial speculation may be introduced by saying that a long-term constancy, let alone reduction, of inequality in the secular income structure is a puzzle. For there are at least two groups of forces in the long-term operation of developed countries that make for increasing inequality in the distribution of income before taxes and excluding contributions by governments. The first group relates to the concentration of savings in the upper-income brackets.....The second source of the puzzle lies in the industrial structure of the income distribution. An invariable accompaniment of

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<sup>1</sup> This is done in greater detail in Kanbur (2012)

growth in developed countries is the shift away from agriculture, a process usually referred to as industrialization and urbanization.” (Kuznets, 1955, pp 6-7).

The first set of forces above relates of course to Piketty’s (2014) focus on capital accumulation as a force for rising inequality Kuznets (1955) discusses a number of countervailing factors to this tendency of inequality to increase. But our focus here is on the second set of forces identified by Kuznets, relating directly to the link with structural transformation.

Kuznets (1955) proceeds with a detailed examination of the implications of structural transformation, the shift from agriculture to industry, and sets out an informal model which Anand and Kanbur (1985) refer to as the “Kuznets process”:

“The income distribution of the total population, in the simplest model, may therefore be viewed as a combination of the income distributions of the rural and of the urban populations. What little we know of the structures of these two component income distributions reveals that: (a) the average per capita income of the rural population is usually lower than that of the urban; (b) inequality in the percentage shares within the distribution for the rural population is somewhat narrower than in that for the urban population [.....] Operating with this simple model, what conclusions do we reach? First, all other conditions being equal, the increasing weight of urban population means an increasing share for the more unequal of the two component distributions. Second, the relative difference in per capita income between the rural and urban populations [...] tends to widen [.....] If this is so, inequality in the total income distribution should increase....[W]hy {then} does income inequality decline?” (Kuznets, 1955, pp 7-8).

Kuznets answers the question through a numerical simulation which captures the essence of many subsequent formal developments which will be laid out in the next section.

“With the assumptions concerning three sets of factors-intersector differences in per capita income, intrasector distributions, and sector weights-varying within the limitations just indicated, the following conclusions are suggested: First, [.....] Second, [.....] Third, [.....] Fourth, [.....] Fifth, even if the differential in per capita income between the two sectors remains constant and the intrasector distributions are identical for the two sectors, the mere shift in the proportions of numbers produces slight but significant changes in the distribution for the country as a whole. In general, as the proportion of A drifts from 0.8 downwards, the range tends first to widen and then to diminish.” (Kuznets, 1955, pp. 14-15)

The fifth conclusion is, in effect, the Kuznets inverse-U shape. There is a *pure* effect of structural transformation; the mere shift of population from one sector to the other. Of course changes in sectoral means and sectoral inequalities will also affect national inequality—this is what conclusions one to four are about. So, for example, if the gap between average incomes in the two sectors first widens and then narrows, then national inequality will also first widen and then narrow for this reason. If the sectoral inequalities follow an inverted U-shape, then so will national inequality. But these patterns are not necessarily to do with structural transformation—at least a separate theory would have to account for such patterns.

In the post-Kuznets literature the inverse-U came to refer to national inequality as a whole, not just the pure effect of structural transformation. An empirical literature blossomed attempting to

estimate the relationship, and it is still going strong. The literature was truly launched by the work of Ahluwalia (1976 a, b) although there were precursors (Adelman and Morris, 1973) and there was discussion of the issue in policy circles (Chenery et. al. 1974). Given the lack of time series data for developing countries, this literature used cross-section data and searched for an inverse-U relationship between measures of inequality and per capita income. Early successes by Ahluwalia and others were soon questioned on grounds which ranged from reliability of data, to econometric issues, and lack of firm theoretical footing. An example of such questioning of the time is found in the papers by Anand and Kanbur (1993 a,b), and skepticism about the Kuznets inverse-U became the norm, even using more comprehensive data compilations (although primarily still cross-section) such as that by Deininger and Squire (1988), and this view was summarized in surveys of the time, such as Fields (2001).

The availability of time series data by the time of the mid-2000s in countries such as India and China allowed an expansion of research horizons, but these countries have experienced rises in inequality during the period, so there was little scope for finding an inverse-U (Kanbur and Zhang, 2005). In Latin America, although the time series data is insufficiently infrequent to not allow country specific econometric analysis, nevertheless in the last two decades there has been a steady decline in inequality, so here again the prospect for discovering an inverse-U curve are limited (Lopez-Calva and Lustig, 2010). But, of course, the greater availability of global data has continued the quest for an inverse-U through combining cross-section and time series data (Barro, 2008).

The key point about the vast empirical literature attempting to test for an inverse-U shape relationship between inequality and per capita income is the little it has to do with structural transformation per se. The mechanisms which give rise to the relationship, in particular the transformation of an economy through shift of population from low productivity (agricultural or traditional) sectors to high productivity (industrial or modern sectors), are barely investigated, the focus being instead on the overall macro reduced form relationship. A more disaggregated perspective is truer to the original Kuznetsian exposition and formulation and may provide greater insight into how to think about the relative weights of different forces impacting on national inequality. The next section attempts to present an analytical formulation which presents a disaggregated picture of inequality change in structural terms.

### 3. Some Simple Analytics

The central analytical frame of the Kuznets exposition is that the national income distribution can be broken down into a population weighted sum of sectoral distributions. With this framework, evolution in the overall income distribution can then be decomposed into the evolution of its component parts and the shift in the population weights of these component parts. The numerical simulations he carries out elaborate on this structure, and the results give us a preliminary handle on how the national income distribution responds to shifts in different sectoral parts. In particular, as quoted in the previous section, the numerical calculations establish the possibility of an inverse-U simply through the shift of population from one sector to another—holding constant the sectoral distributions.

This general structure can be given greater precision by using specific inequality measures which allow a decomposition of inequality into sectoral components. In particular, for inequality measures which are decomposable in a precise sense, national inequality can be written as a function of inequality in each sector, the mean of each sector, and the population share of each sector. An early use of such decomposition to explore the evolution of inequality in a Kuznetsian sense is by Robinson (1976), which demonstrated the possibility of an inverse-U purely as the result of population shift when the inequality measure was the variance of log-income. Anand and Kanbur (1993a) extended this exercise to six inequality measures and used it to derive specific functional forms for the inequality--per capita income relationship for each index of inequality. Anand and Kanbur (1993b) then implemented this econometrically, estimating the appropriate functional form corresponding to each inequality index.

One of the six indices of inequality in Anand and Kanbur (1993a) is the mean log deviation (MLD), also known as Theil's second index. This index has strong decomposition properties and has increasingly come to be used as a workhorse measure of inequality (for example, in the recent literature on inequality of opportunity, which we will return to in the next section). Following Kanbur and Zhuang (2013) this section uses the MLD measure to set out the basic analytics of income distribution and structural transformation in the spirit of Kuznets.

Let the national economy be divided into two sectors indexed 1 and 2. If the frequency density of the national distribution of income  $y$  is  $f(y)$ , then the sectoral densities are written  $f_1(y)$  and  $f_2(y)$ . Let the population share of sector 1 be denoted  $x$ , our key indicator of structural transformation. The national frequency density is then:

$$f(y) = x f_1(y) + (1-x) f_2(y) \quad (1)$$

Denote the MLD measure by  $L$  and the mean by  $m$ , with subscripts 1 and 2 to indicate each sector. Let  $k = m_1/m_2$  denote the ratio of the two means. It is well known that the MLD measure can be decomposed into sectoral components as follows:

$$L = x L_1 + (1-x) L_2 + \log [x k + (1-x)] - [x \log (k)] \quad (2)$$

The first two terms on the right hand side together constitute a weighted sum of the sectoral inequalities and the sum is known as the within-group component of national inequality:

$$L_W = x L_1 + (1-x) L_2 \quad (3)$$

The last term on the right hand side of (2) has an interesting and important interpretation. If the income distribution in each sector was equalized around its mean, the only inequality left would be that due to



difference in the means of the two sectors. This is known as the between-group component of inequality and is given exactly by the last term on the right hand side of (2):

$$L_B = \log [x k + (1-x)] - [x \log (k)] \quad (4)$$

Kuznets's (1955) interpretations of his numerical simulations in effect follow the paths of (3) and (4), and of their aggregate, as different variables evolve, under empirically plausible assumptions that the more advanced sector has higher mean income and higher inequality. Let the more advanced sector be sector 1, and consider what happens when the population share of this sector increases from a low value to a high value where the vast majority of the population derives its income from the advanced sector. In this case it is seen that

$$dL_W/dx = (L_1 - L_2) \quad (5)$$

$$dL_B/dx = [(k-1)/(x(k-1)+1)] - \log(k) \quad (6)$$

Thus in this Kuznetsian frame structural transformation always increases the within-group component of inequality, as also argued in Robinson (1976) and Anand and Kanbur (1993a), since it consists of moving population from the low inequality to the high inequality sector. Where then does the inverse-U shape come from? The answer is from the between group term, the evolution of which is given in (6). The intuition is straightforward. Recall that the between group inequality is that which left when everybody has the mean income of their sector. The income distribution in this case is a two point distribution, with a fraction  $x$  of the population at income at the high income and the rest at the low income. At the two extremes, when everybody is at one income level or the other, between-group inequality is zero. In between, inequality is zero. Thus we must have an inverse-U shape as population moves from the low income to the high income sector.

While between-group inequality always follows an inverse-U shape, it is counteracted in its downward sloping portion by the increasing inequality of the within-group component. Thus to get an inverse-U shape in overall inequality as structural transformation takes place we need further conditions that (5) does not dominate (6), which will happen when the two sectoral inequalities are not too disparate. The specific condition is developed in Anand and Kanbur (1993a) and Kanbur and Zhuang (2013) and shown to be:

$$L_1 - L_2 < 1/k - 1 + \log(k) \quad (7)$$

The role of factors other than structural transformation as measured by the population share  $x$  raises the question of how these other factors affect inequality and indeed move with structural transformation. Kanbur and Zhuang (2013) address this question by looking at the total differential of (2) and relating it to a series of elasticities.

$$dL/L = E_x(dx/x) + E_k(dk/k) + E_{L_1}(dL_1/L_1) + E_{L_2}(dL_2/L_2) \quad (8)$$

where  $E_x, E_k, E_{L_1}, E_{L_2}$  are elasticities of  $L$  with respect to  $x, k, L_1$  and  $L_2$ , respectively, and are given by

$$E_x = (x/L) [(L_1 - L_2) + [(k - 1)/(x(k - 1) + 1)] - \log(k)]$$

$$E_k = (k/L) [x/(1-x+k) - x/k]$$

$$E_{L1} = (L_1/L) x$$

$$E_{L2} = (L_2/L) (1-x) \tag{9}$$

Expressions (8) and (9) quantify the consequences of changes in the key Kuznetsian parameters. We have already, in effect, discussed  $E_x$  in discussing the inverse-U shape of the relationship with the structural transformation variable,  $x$ . What about the other parameters? The expression for  $E_k$  shows that a widening of the gap between sectoral means will increase inequality, and similarly a narrowing of the gap will reduce national inequality. Thus to generate an inverse-U in national inequality the sectoral mean gap will also have to follow an inverse-U shape. The advanced sector will have to race away from the lagging sector in the early stages of development and then be caught by the lagging sector in the later stages. It is this type of structural transformation which would re-enforce the inverse-U pattern induced by the pure effect of the population shift. Similarly, the expressions for  $E_{L1}$  and  $E_{L2}$  show that a widening gap between the inequalities of the two sectors will increase national inequality. Thus if inequality in the advanced sector races ahead and is then caught up by inequality in the lagging sector, this will align with the inverse-U path induced by other forces.

The above discussions leads us to a broader conceptualization of sectoral transformation than simply a shift of population from the low productivity to the high productivity sector. Arthur Lewis famously argued that inequality within the leading sectors would tend to increase:

“Development must be inegalitarian because it does not start in every part of an economy at the same time. Somebody develops a mine, and employs a thousand people. Or farmers in one province start planting cocoa, which will grow only in 10% of the country. Or the Green Revolution arrives, to benefit those farmers who have plenty of rain or access to irrigation, while offering nothing to the other 50% in drier regions.” (Lewis, 1976, p. 26).

Thus, certainly in the initial stages of development, inequalities within the advanced sector could augment, the mean income in this sector could increase rapidly, and these together with the population shift to the high productivity sector from low levels would tend to increase inequality.

What the expressions also make clear is that the impact of a change in  $x$  on national inequality depends on other sectoral variables as well. Thus the bigger is the average sectoral gap  $k$ , the more pronounced will be the impact of a shift in population on inequality. The same holds true for the gap in sectoral inequalities. Thus the links between structural transformation and national inequality are further complicated beyond the simple but powerful basic Kuznetsian forces identified in his classic paper.

#### 4. Kuznets Beyond Kuznets

Two major strikes seem to have been recorded against the Kuznetsian framework in the literature since 1955. The first, in the literature right up to today but primarily in the 1970s, 1980s and 1990s, is that we appear not to find an inverse-U relationship between national inequality and national per capita income in cross-country regression analysis. This is true even when, in more recent years, over time observations have been added to the mix for a few countries. The second, more recent and most prominent, critique is that of Piketty (2006, 2014), which takes issue with the fact that Kuznets built a theory to explain the facts of the time—declining inequality over the previous few decades.

Piketty's position is summarized as follows:

“During the past half-century, the Kuznets' curve hypothesis has been one of the most debated issues in development economics. And rightly so. In a nutshell, the hypothesis simply says that income inequality should follow an inverse-U shape along the development process, first rising with industrialization and then declining, as more and more workers join the high-productivity sectors of the economy (Kuznets (1955)). This theory has strong – and fairly optimistic – policy consequences: if LDCs are patient enough and do not worry too much about the short run social costs of development, then they should soon reach a world where growth and inequality reduction go hand in hand, and where poverty rates drop sharply.... I will argue that recent historical research is rather damaging for Kuznets' interpretation: the reasons why inequality declined in rich countries seem to be due to very specific shocks and circumstances that do not have much to do with the migration process described by Kuznets and that are very unlikely to occur again in today's poor countries (hopefully) [.....] Inequality dynamics depend primarily on the policies and institutions adopted by governments and societies as a whole.” (Piketty, 2006, pp).

This position, which is restated in, and is indeed something of a launch pad for Piketty's (2014) blockbuster book, may be correct when referring to the literature as whole and its use of Kuznets, but seems a little unfair to Kuznets himself, at least to his exposition in Kuznets (1955). This exposition is replete with discussions of many mechanisms beyond the simple population shift from the high productivity to the low productivity sector. Indeed, as discussed in Section 2, he characterizes the observed decline as a “puzzle” given what he views as the forces making for inequality to increase in the initial stages of industrialization—savings and capital accumulation (which appear to mesh with Piketty's own theories), and population shifts.

In fact, institutional factors are prominent in Kuznets:

“One group of factors counteracting the cumulative effect of concentration of savings upon upper-income shares is legislative interference and "political" decisions. These may be aimed at limiting the accumulation of property directly through inheritance taxes and other explicit capital levies. They may produce similar effects indirectly, [.....] All these interventions, even when not directly aimed at limiting the effects of accumulation of past savings in the hands of the few, do reflect the view of society on the long-term utility of wide income inequalities. This view is a vital force that would operate in democratic societies even if there were no other counteracting factors.” (Kuznets, 1955, pp. 8-9).

Kuznets goes on to discuss other factors such as demography which may counteract the fundamental forces of accumulation. Such institutional and other factors can be viewed, in the formalizing of Kuznets

presented in Section 3, as influencing the within sector inequalities and through these national inequality. Here is how he skillfully uses his numerical simulations to animate a theoretical discussion, recalling that A denotes agriculture and B denotes non-agriculture:

“If we grant the assumption of wider inequality of distribution in sector B, the shares of the lower-income brackets should have shown a downward trend. Yet the earlier summary of empirical evidence indicates that during the last 50 to 75 years there has been no widening in income inequality in the developed countries but, on the contrary, some narrowing within the last two to four decades. It follows that the intra-sector distribution—either for sector A or for sector B—must have shown sufficient narrowing of inequality to offset the increase called for by the factors discussed [.....] This narrowing in inequality, the offsetting rise in the shares of the lower brackets, most likely occurred in the income distribution for the urban groups, in sector B [.....]. Much is to be said for the notion that once the early turbulent phases of industrialization and urbanization had passed, a variety of forces converged to bolster the economic position of the lower-income groups within the urban population [.....] Furthermore, in democratic societies the growing political power of the urban lower-income groups led to a variety of protective and supporting legislation,....” (Kuznets, 1955, pp.16-17).

These discussion belie any simplistic attempt to characterize Kuznets (1955) as putting forward a law that inequality would eventually decline. Rather, what we see is a sophisticated and open minded thinking through of different forces of inequality change, some making for increasing inequality, some for decreasing, organized in a sectoral framework. In this framework structural transformation is of course anchored in the shift of population from the low productivity to the high productivity sector. But it can also be seen as a complex of factors affecting within sector distributions as well.

Expressions such as those in (8) and (9) provide an entry point into the rich Kuznetsian discourse. Thus, for example, Kanbur and Zhuang (2013) present a contrast between Indian and China. Given the current values of their country-specific parameters, it is shown that further increase in the share of the urban population would, all else constant, increase inequality in India and decrease inequality in China. Of course all else is not constant, but the Kuznetsian framework begins to provide a way of understanding the sharp increases in inequality in China in the 1980s, 1990s and early 2000s, and, crucially, a possible start of an inequality decreasing phase from the mid-2000s onwards (Fan, Kanbur and Zhang, 2011).

Although it is still early days, an explanation can begin to be formulated as to why China’s inequality may have peaked. First, a series of policy interventions have sought to contain the rise of inequality within urban and rural areas, including broadening of health and social security provisions, and minimum wages (Kanbur, Li and Lin, 2016). Second, migration from rural to urban areas has been huge, and is beginning to tighten the labor market in rural areas, raising the mean in that sector and narrowing the average gap between the sectors (Zhang, Yang and Wang, 2011). In addition, as argued by Kanbur and Zhuang (2013), urbanization has now reached a point in China where, given the other parameters, shift of population from rural to urban is in fact contributing to falling inequality. Of course these factors have to be set against the forces of accumulation and technical change pulling towards rising inequality, but the Kuznetsian framework is rich enough to go beyond the simple population shift process to take in a range of forces acting on inequality.

Thus there are a number of ways in which we can go “Beyond Kuznets” within the Kuznetsian frame itself. The Kuznets (1955) exposition is far richer than the simple characterizations of it sometimes

presented in the literature. There is, however, one recent development which takes us beyond the conceptualizations in Kuznets (1955), although the sectoral frame presented there nevertheless continues to be the basis of the new arguments. These arguments stem from Roemer's (1998) formulation of the normative concept of "equality of opportunity".

Following a long philosophical tradition, Roemer distinguishes between two types of determinants of income (or any other outcome variable)—"circumstances" and "effort". Circumstances are the factors which are outside the control of the individual while effort is the heading for those factors which an individual controls. Thus gender, ethnicity, parental occupation or wealth, for example, may be thought of as circumstances. The variation of income attributable to variations in these circumstances is then deemed to be (in) equality of opportunity. The specific method is to decompose an inequality index like the MLD into between-group and within-group components and use the fraction of the former in total inequality as a measure of inequality of opportunity (see, for example, Paes De Barros et. al. 2009).

A key role is played by place of birth in identifying circumstances. This is legitimately thought to be outside the control of the individual. In the global context, for example, country of birth is argued to be morally arbitrary and thus the fraction of global inequality attributable to per capita income differences across countries to be "global inequality of opportunity" (around 75%, see Milanovic, 2016). Extending the analogy to within countries, as is indeed done in the literature, whether an individual is born into the rural or urban sector should be morally arbitrary and thus inequality attributable to mean difference between the two sectors,  $L_B$  in the notation of Section 3, should be inequality of opportunity. Of course, what we have in the Kuznets framework is a dynamic setting where migration takes place between the two sectors. An individual can be born into the low productivity sector but within his or her lifetime could end up in the high productivity sector.

Paradoxically, however, if we start with a low share of the population in the rural sector, permitting some migration could, under certain conditions, increase  $L_B$  and thus measured inequality of opportunity. Thus structural transformation in the early stages could not only increase inequality, it could also increase inequality of opportunity as measured by Roemer (1998). These seemingly paradoxical outcomes need far greater investigation than has been accorded to them either by the structural transformation literature or the inequality of opportunity literature.

## 5. Conclusion

This paper explores the question of structural transformation and income distribution through the eyes of the pioneer in such analysis, Simon Kuznets. His 1955 paper is a magisterial tour de force, combining close attention to data with a rich theorizing as a platform for a discussion of different forces acting on the evolution of inequality during the development process. Of course the exposition bears the marks of its time, with the core theoretical development supported by numerical calculations rather than formal modelling, but it also stands the test of time in providing insights which are relevant to understanding current phenomena like the evolution of Chinese inequality.

The literature following Kuznets focused on the supposed inverse-U shape prediction for the relationship between overall national inequality and national per capita income. The evidence for such a relationship was not found in cross-section data nor, more recently, in combinations of time series and cross-section data. Piketty (2006, 2014) focuses on the declining portion of the inverse-U, attributing to Kuznets an overly optimistic trickle down view of growth and development. While it is certainly true that some of the post-Kuznets literature drew this unwarranted inference, this paper argues that Kuznets (1955) has a much more detailed and nuanced positive analysis of the components of income distribution change in a structural frame. Analysts should get the most they can out of this framework rather than be pulled into a singular view of Kuznets and the inverse-U.

The paper shows how the Kuznetsian framework can be used, for example, in predicting the differential relationship between urbanization and inequality in India versus China, in assessing the detail of the contribution of sectoral mean and inequality evolution to overall inequality change, and in linking the recent inequality of opportunity literature to rural-urban migration. Thus Kuznets (1955) has the seeds of getting us beyond Kuznets as sometimes (mis) understood in the literature on structural transformation and income distribution.

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