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Agrarian Structures, Urbanization and Inequality

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Abstract

This study examines the impact of agrarian structures on income inequality over the long run. High land inequality increases income Gini coefficients in the urban sector as well as the rural sector, not only by creating congestion in the urban subsistence sector, but also by feeding the growth of the urban reserve army of labor, which pulls down the wages in the urban capitalist sector. An econometric analysis shows that the impact of initial land ownership distribution on both national and urban income distribution can persist for decades.

Keywords: distribution, urbanization, informality, development.

JEL Classification Numbers: O15, Q15, 017, I24.

1 Introduction

Land distribution is not only about the welfare of rural dwellers. Indeed, land distribution can partially explain differences in income inequality even in urbanized societies. This is because land inequality can influence the urban and overall national income distribution through its effects on institutions and labor bargaining relations within the urban sector. The long-run effects may continue even as the country becomes an urbanized society.

The impact of land inequality on urban distribution has been examined in several prior studies (Engerman and Sokoloff, 2002; 2005; Galor and Zeira, 1993; Galor and Tsiddon, 1996; Galor, Moav and Vollrath, 2004; Bourguignon and Verdier, 2000; Frankema, 2009; Wegenast, 2009). These studies focus on institutions, pointing out in particular that greater wealth inequality would lead to institutions that bias education capabilities and policies against the poor. This would result in the transmission of land inequality to urban inequality.

The contribution of this paper is an analysis of the impact of land inequality on class relations and wage bargaining in the urban sector. Consistent with the Harris-Todaro (1970) framework, I assume that the difference between expected urban incomes and rural incomes determines the migration decision. The fallback position of the new urban dwellers thus is formed by the previous rural incomes. As in the Lewis (1954) model, the rural-to-urban migration suppresses wages in the urban sector. In countries with higher land inequality, more migrants are willing to move to the urban sector for lower wages, and the migration process therefore has a more pronounced negative impact on the urban wages.

The wage-bargaining effect of land distribution has been relatively ignored in the existing literature. It is mentioned in a few paragraphs in empirical studies examining the relationship between land and income inequality, in studies whose focus is not on the link between land and urban

distribution (Griffin, Khan and Ickowitz, 2002) and in case studies (De Janvry, 1981; Harris, 1978; Keyder, 1987, Amsden, 1989; 1990) of selected regions. Building on these earlier insights, this study offers a thorough theoretical analysis by developing a model based on the Harris-Todaro (1970) framework as extended by Fields (1975, 2005). The model is then tested in an empirical analysis that examines whether the wage-bargaining effect is relevant even when we control for the education gap and other institutional variables.

As land distribution and urban inequality are closely connected, the implications of this paper are also important for understanding long-run development paths. Inequality often creates impediments to long-run growth. Unequal income distribution has been shown to limit educational opportunities for the poor and/or middle classes, elevate credit constraint problems, decrease domestic demand, increase crime rates and corruption, lead to social unrest in the society and pull down per capita income and educational attainment through higher rates of fertility (Griffin and Ickowitz, 1998; Voitchovsky, 2011). In addition, inegalitarian agrarian structures can lead to lower land productivity (Vollrath, 2007)[1]. A wide range of empirical work (e.g. Easterly, 2007; Alesina and Rodrik; 1994; Deininger and Squire, 1998) confirms that the countries with historically more egalitarian distribution enjoyed greater rates of growth in the second half of the 20th century. In a world where 48 % of the population still lives in rural areas (World Bank, 2012), our results provide support for agrarian policies favoring egalitarian landownership.

The article proceeds as follows. The next section examines the simple correlation between income inequality and land inequality across dozens of countries. The third section develops the theoretical framework that links the two. The fourth section provides a simple model of the relationships among urbanization, income and land distribution. The fifth section presents an econometric test of the theory, and the last section concludes.

2 A comparative perspective

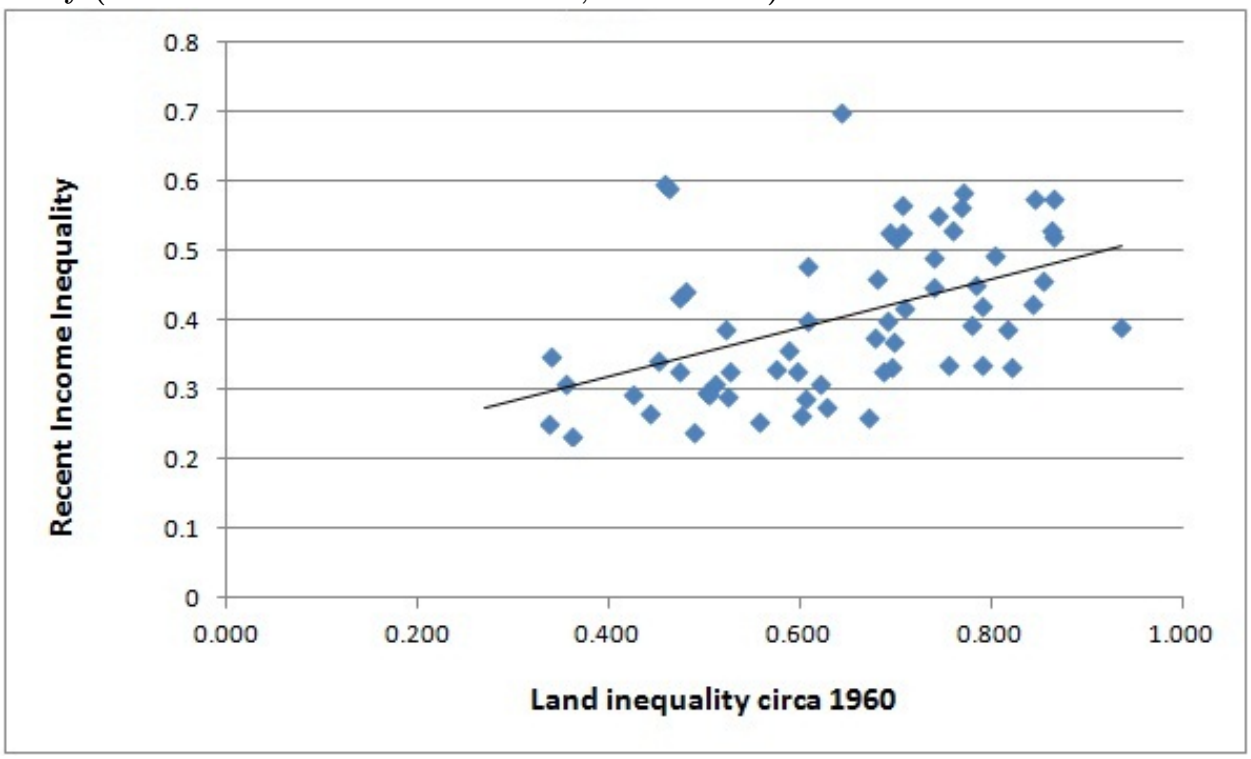
A comparative examination of development experiences in different regions suggests a positive relationship between land ownership inequality and income inequality. Historically, Latin America and parts of Sub-Saharan Africa are associated with a high degree of concentration of land. In much of Latin America, the agrarian structure is characterized by the coexistence of large plantation-type structures and extremely small family farms, called latifundios and minifundios, respectively (Furtado, 1976). The landlords holding latifundios mostly hire wage labor to cultivate their land. These landlords wield not only economic but also political influence over labor and institutions. The power inequality secures the existence of the inegalitarian agrarian structure (De Janvry, 1981). Similar structures are observed in some regions of sub-Saharan Africa (Frankema, 2010).

On the other hand, the agrarian structure in Asia tends to be associated with a greater prevalence of owner-cultivators and tenants. Among the East Asian countries, Korea and Taiwan experienced progressive land reforms, which led to agrarian structures in which small and medium family farms dominate. Even in South Asian and Middle Eastern countries without significant land redistributions, the land inequalities are lower than in Latin America and the proportion of landless labor in the rural population is smaller (see Appendix 1).

Although agrarian structures may be an important factor underlying interregional differences between levels of income inequality, this does not mean that the regions are entirely dominated by a single agrarian structure. Medium-scale family farms are common in parts of Latin America

[1] In a cross-country analysis, Vollrath (2007) empirically finds that the land Gini coefficient has a significant negative relationship with land productivity. Consistent with this finding, a number of studies (Cornia, 1985; Ünal, 2012; Githinji, Konstantinidis and Barenberg, 2011) empirically exhibit that smaller farms have greater land productivity.

Figure 1: Relationship between land inequality in the 1960s and income inequality today (Gini coefficients for 62 countries, corr = 0.48)



Note: See Appendix 1 for the data sources

(Furtado, 1976; Barraclough and Domike, 1966), while in Asia many peasants work under a wage labor relationship (Bardhan, 1984; Boratav, 1989). In addition, even countries with similar agrarian structures may exhibit dissimilar levels of land inequality. Therefore, the national land Gini coefficient is a more accurate measure for land inequality than crude regional dummies.

Prior empirical studies have documented the positive relationship between land and income Gini coefficients (Carter, 2000), and shown that a greater share of land owned by small and medium (Bourguignon and Morrisson, 1998) and/or family farms (Easterly, 2007) reduces overall income inequality. Figure 1, constructed for this study, exhibits a positive relationship between early land inequality and later overall income inequality for 62 countries. The horizontal axis on the figure is the value of land inequality for years in and around the 1960s, here taken as a measure of pre-urbanization land distribution. A large dataset for land Gini coefficients is not available for earlier years, and the massive flows of rural-to-urban migration in the developing world had begun after 1950s (Araghi, 1995). The figure's vertical axis is the most recently measured income Gini coefficient for the country[2]. The Pearson correlation coefficient between the income and land Gini coefficients is 0.48.

The Southern African countries (Botswana, Lesotho, Malawi, South Africa, Swaziland and Zambia) have very high income inequality values compared to their initial land inequalities and

[2]Our larger dataset also includes values of expenditure inequality, but these are excluded in the figure. These observations will proxy income inequality in the econometric analyses, with the use of a dummy to account for the difference between income inequality and consumption inequality.

Figure 2: Relationship between land inequality in the 1960s and income inequality today - Southern African countries excluded (Gini coefficients for 60 countries, corr = 0.58)

Note: See Appendix 1 for the data sources

appear as outliers in Figure 1. One explanation for that might be Southern African countries' high degree of dependence on incomes from minerals, which tend to be very unequally distributed[3]. Interracial income gaps also are an important factor increasing income inequality in some Southern African countries (Özler, 2007). In Figure 2, I exclude the Southern African countries from the sample. Figure 2 presents a clearer positive relationship and the Pearson correlation coefficient increases to 0.58. In summary, the figures suggest that initial conditions of land distribution matter for determining national income inequality in the long run.

3 Theoretical framework

There are two groups of arguments that explain the close relationship between income and land inequalities. Figure 3 presents a schematic picture of both arguments. The institutional mechanism is drawn in blue, the bargaining mechanism in red. This study's emphasis is on bargaining. Nevertheless, I will begin with a brief summary of the institutionalist arguments, and I will control

[3]Acemoglu, Johnson and Robinson (2003) claim that Botswana is an exceptional case, as most of the revenues coming from minerals are captured by the government. They also claim that most of these revenues are used for productive activities like infrastructure investments. Nevertheless, the government of Botswana is also the biggest employer in the country and the salaries that the government pays to high-ranked government officers is substantially higher than the incomes in the rest of the country (Good, 1993). This may be one of the reasons why Botswana is still one of the most unequal countries in the world with an income Gini coefficient of 0.60 (Martin, 2009).

for institutional variables in the regression analysis.

3.1 The institutionalist aspect

The institutionalist studies focus primarily focus on wealth distribution's impact on human capital and biases in education policies. They mostly follow the neoclassical assumption that income differences are the results of labor productivity gaps between individuals. The first group of institutionalist studies addresses the direct impact of land distribution on income inequality. In underdeveloped countries, the poor cannot invest on education due to credit constraints (Galor and Zeira, 1993). Even when credit is potentially available, investment in education is very costly for the poor, since most of it is financed by borrowing capital rather than by intrinsic family incomes (Galor and Tsiddon, 1996). In addition, the returns to investment in education are minimal for very low levels of education. Therefore, education investment becomes beneficial only for the rich; for people with lower income levels the costs of education exceed its expected returns. As a result, the lower-income people are trapped in an inferior education equilibrium. Only the rich benefit from technical change, and income inequality increases[4].

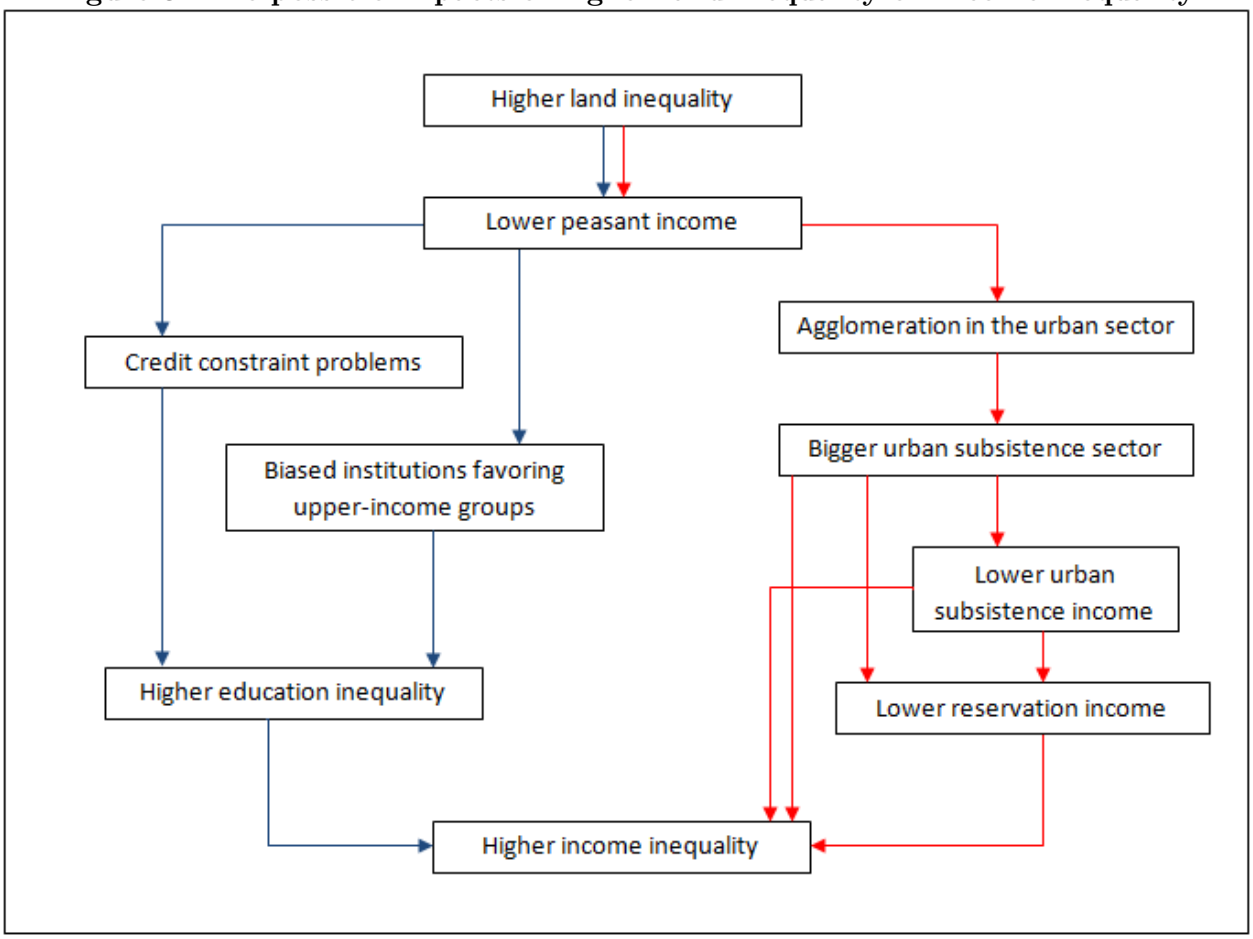
The second line of institutionalist studies addresses the connection between land distribution and power inequality, which might be crucial in determining education policies. According to Galor, Moav and Vollrath (2004), in underdeveloped agrarian societies, the landlords tend to block education reforms that would extend the education frontier to a larger portion of society. This is because landlords see little benefit in having an educated peasantry, so they refuse to finance widespread access to education. The greater land inequality brings landlords greater power to limit public spending on education (Engerman and Sokoloff, 2005; Frankema, 2009; Wegenast, 2009). Eventually, however, industrialization results in a shift of power toward urban capitalists who are more willing to finance public education since educated urban wage laborers are valuable to industrial employers (Galor, Moav and Vollrath, 2004; Bowles, 1978).

Bourguignon and Verdier (2000) analyze the politics of state support for public education. According to Bourguignon and Verdier, in undemocratic societies the educated oligarchy might not have incentives to initiate democratic transition, since democracy forces the rich to subsidize the poor's education. Bourguignon and Verdier show that if inequality is high, the elite would block the democratization process, because the elites' loss from the new taxation would be greater than their gains from the productivity improvements earned by the spread of education. However, if inequality is lower, the rich could benefit from an expanded education frontier as education of the poor results in rising productivity.

Engerman and Sokoloff (2005) show that Bourguignon and Verdier's theory is consistent with the historical experience in the Americas. In the Latin American countries which have relatively hierarchical structures, the franchise and extent of voting enlarged more slowly than in the US and Canada in which more egalitarian structures were observed in the 19th century. As a result, for the period 1850-1950, the literacy rates in the Latin American countries were significantly lower than the literacy rates in the US and Canada. Thus, the education frontier did not extend to a large segment of population in Latin America.

[4]In the later phase of development, a larger portion of the society can and would invest in education as the credit constraint loosens and labor productivity (and hence wages) increases with improving technology. As a result, the negative impact of land inequality would be reduced (Galor and Zeira, 1993; Galor and Tsiddon, 1996).

Figure 3: The possible impacts of higher land inequality on income inequality



3.2 The bargaining aspect

The second aspect of the land-income inequality relationship involves the bargaining impacts of land distribution. In his groundbreaking article "Economic Development with Unlimited Supplies of Labor," Lewis (1954) claimed that flows of labor from the subsistence to the capitalist sector help the accumulation of capital by suppressing wages and enhancing the growth of surplus in the capitalist sector. The flow of labor in the Lewis model is usually associated with rural-to-urban migration (e.g. Ranis and Fei, 1961; Anand and Kanbur, 1985). If we identify rural-to-urban migration with the unlimited supplies of labor in the Lewis model, the model suggests that urbanization will raise the proportion of lower-income groups within the urban population and hold down wages in the urban sector.

Proceeding from this insight, we need to address two questions: 1) What are the major factors that stimulate urbanization? 2) How does the flow of "unlimited supplies of labor" influence urban income inequality?

An individual's decision to move from a rural area to the city is influenced by a host of factors including age, family relations, culture, disasters, conflicts, diseases, and more. Nevertheless, the trend of urbanization is mostly stimulated by changing income opportunities both in the urban and rural areas. Historically, the rate of urbanization accelerated with capitalist development. Indeed,

the percentage of the world population living in cities of 20,000 or more was only 2.4% in 1800. It increased to 9.2% in 1900 and to 20.9% in 1950 (Davis, 1955). Most growth of the world urban population during this period occurred in the nations that were early industrializers.

In the underdeveloped world, the growth of industry was slow until the 1950s. Therefore, between 1925-1950 only 10% of the rural population moved to the urban areas in the developing countries for which data is available (Araghi, 1995). Then from 1950-1975 the percentage of the rural population that moved to the urban sector jumped to 25%. This may be due in part to the emerging industrial policies[5] and availability of cheap food reducing the costs of labor. In addition, push factors like the spread of labor-saving technologies in agriculture (De Janvry, 1981; Köymen, 2008), the destruction of "z-goods" production (Hymer and Resnick, 1969), and an urban bias in national policies (Lipton, 1976; Williamson, 1988) might have stimulated urbanization in the developing economies.

A variety of models such as Harris-Todaro (1970) (also Cole and Sanders, 1985; and Fields, 1975, 2005) seek to explain urbanization on the basis of the difference between expected rural and urban incomes. Moreover, a considerable amount of empirical evidence (e.g. Bowles, 1970; Fields, 1982; Schultz, 1982) shows that intersectoral differences in income levels significantly affect migration decisions. The expected income of a regular rural dweller is determined by both per capita rural income and the distribution within the rural sector. Thus, for the same per capita urban and rural incomes, there will be greater urbanization in countries whose land distribution is more unequal. The congestion in cities is also going to pull down the wages, especially of the urban unskilled workers.

This phenomenon is briefly mentioned by Griffin, Khan and Ickowitz (2002) in this passage: "The incomes of the rural poor set a floor for urban wages, since no one will migrate from the countryside to the city unless they expect to be at least as well off as before migration. Higher rural incomes will therefore raise the 'reservation wage' of the urban poor and this will help to reduce urban poverty." The authors go on to note that redistributive land reforms influence urban distribution.

A number of studies (e.g. Harris, 1978; De Janvry, 1981) on 'inegalitarian' Latin America argue that the poor peasants supply cheap labor both for urban and rural capitalist activities. Cheap labor becomes even more readily available, when the rapid spread of a labor-saving technology leaves the workers in plantations unemployed. This suppresses urban wages in the Latin America. On the other hand Amsden (1989, 1990) for Korea and Keyder (1987) for Turkey[6] claim that the predominance of family farms made staying in agriculture a better option for peasants. This kept urban inequality in Korea and Turkey at lower levels[7] than the inequality in Latin America.

A significant proportion of rural-to-urban migrants cannot be absorbed by the urban capitalist sector. However, consistent with the Harris-Todaro (1970) framework, these individuals still migrate with the future expectation of being employed in a formal job (Banerjee, 1983). For a period of

[5] Amsden (2001) and Chang (2008) give good summaries on how import substitution and export-oriented industrial policies stimulated the growth of industry in the developing world.

[6] See Köymen (2008), Önal (2010) and Gürel (2011) for the critiques of Keyder's(1987) thesis. The main argument in these studies is that the average peasant incomes in Turkey were still low and do not have a positive impact on urban inequality. Gürel explains the higher Turkish wages in 1960s and 1970s by the labor movements at the time. Nevertheless, we need to keep in mind that the labor movements are not entirely exogenous and the agrarian structures can influence the emergence of these movements.

[7] Keyder (1987) frames this as "the agrarian structure exerted an upward pressure on urban wages". The impact of egalitarian distribution is probably better explained by Amsden (1989) who argues that as an outcome of land reform in Korea "rural-urban migration and downward pressure on manufacturing wages can be assumed to have been less massive than it would otherwise have been". We need to keep in mind that in any case the flow of rural to migrants exerts pressure on urban wages, but the pressure is lower for the countries with lower land inequalities.

time, the unemployed new urban dwellers spend their savings and/or receive remittances from their family back in the rural sector (Mazumdar, 1976). In the medium run, these individuals become underemployed in the urban subsistence sector[8]. These individuals wait to be employed especially in formal jobs, where they would receive guaranteed and higher income. Thus, there is a reserve army of labor located within the urban subsistence sector (Patnaik, 2008; Hart, 1973; Williams and Tumusiime-Mutebile, 1978)[9]. The existence of this reserve army limits the bargaining strength of labor and reduces the urban wages in the formal or capitalist sector.

In developing economies, the long-run changes in urban employment are smaller so the waves of urbanization mostly affect the size of urban subsistence sector, which is generally larger than the pool of the unemployed (Fields, 1975). Therefore, this study will focus on the urban subsistence sector. The term "urban subsistence sector" here is slightly different than the classical usage of urban informal sector that includes all unregistered activities (e.g. Schneider, Buehn and Montenegro, 2010; Castells and Portes, 1989). My definition of subsistence sector is similar to the Lewisian definition. The subsistence sector consists of petty commodity producers and self-employed, but excludes unregistered activities that employ wage-labor solely in pursuit of profit maximization.

There are two main characteristics attributed to the subsistence sector. First, the subsistence sector does not accumulate a significant amount of capital. The subsistence activities survive through supplying cheap goods and services to the lower-income groups (Gerry, 1978). The capitalist enterprises leave these activities to the subsistence sector, since these activities are less profitable. Moreover, in the subsistence sector the barriers to entry are very few, which inevitably leads to competition between numerous subsistence agents. Therefore, the markup rates of subsistence activities are low and many of them can survive only with the help of self-exploitation. These producers consume the majority of their surplus and can accumulate very little capital (Kalyan, 2007)[10]. As a result, growth in the urban subsistence sector is significantly lower than growth in the urban capitalist sector. In addition, agents in the subsistence sector have only a very small likelihood of successfully taking on more profitable activities (Nattrass, 1987). The subsistence agent faces disadvantages of capital, skill and institutional structure. Thus, very few activities change sectors and very few subsistence agents become capitalist entrepreneurs.

The second characteristic attributed to the subsistence sector is zero marginal productivity of labor. According to Lewis (1954), there is excess labor employed in the subsistence sector. He defines excess labor using the concept of "disguised unemployment". This term implies that an increase in labor supply does not contribute to the production in the subsistence sector. A few examples fitting this would be street trader/hawkers or small family stores and restaurants in poor neighborhoods that hire unpaid family labor. Both the entry of new street hawkers/family stores and additional family labor engaging in these activities can only have a marginal effect on overall urban subsistence production. We should accept that zero marginal productivity of extra labor is an oversimplification. Nevertheless, it is plausible to assume that congestion in the urban

[8]Urban unemployed's ties with their family also loosen in time. Therefore, it is reasonable to assume that the urban unemployed will not be supported by their already lower income families for a long period of time.

[9]None of these social scientists explicitly use the term subsistence in their work, but they meant activities similar to subsistence activities used in this paper. Patnaik (2008) mentions that there is a "distant reserve army of labor" within the precapitalist sector. According to Williams and Tumusiile-Mutebile (1978) the petty-commodity producers in Nigeria and according to Hart (1973) the underemployed in Ghana's informal sector act as a reserve army. In Hart's study where the term "informal sector" is first defined, Hart uses "informal sector" as to the refer to the unproductive activities of the self-employed that are very similar to the activities I characterize as subsistence sector activities in this paper.

[10]Kalyan (2007) frames the activities we mention here as "the need economy". He proposes a circuit of capital like M-C-C'-M'-M-C in which M'-M is producers' consumption. In this study, we are easing Kalyan's assumption of zero accumulation.

subsistence sector leads to greater impoverishment since an extra laborer only marginally increases total production while reducing the slice of income that each subsistence individual can get.

Next, we will analytically examine how the agrarian structures influence urban inequality through leading to congestion in the subsistence activities.

4 A simple model on urbanization and inequality

4.1 Migration Behavior

For the reasons discussed above, we will assume that the rural-to-urban migration decision depends on the incomes within the urban and rural sectors. For a reasonable analysis, not only the inter-sectoral income gap, but also migrants' chances of being employed should be taken into account. Therefore, I follow the Harris-Todaro (1970) framework in which differences in expected incomes are considered. This can be written as

$$W_U^e = S_R + C \tag{1}$$

where W_U^e is migrants' expected income in the urban sector and S_R is peasants' pre-migration returns. This study will be concerned about the rural-to-urban migration of the masses -peasants in family farms and wage workers in plantations, rather than owners of large landlords who are in the upper income brackets. Because I assume that poor and average rural dwellers are agents who influence urban wages, I focus on peasants pre-migration returns (S_R). S_R is determined by per capita agricultural product and the structure of distribution in different agrarian structures. It would evolve following the agrarian changes in the society. The variable C is the cost of migration from the rural to the urban areas. The cost of migration for rural dwellers is not only the monetary cost of settling in an urban place, but also the psychological cost of the change in lifestyle. I assume that there is a one-way migration trend from the urban to the rural sector, since this paper is interested in long term effects of rural structures. Therefore, the sign for cost of migration is only relevant for migration from rural to urban.

Like Fields (1975, 2005), this paper assumes that the Harris-Todaro equilibrium condition holds in the developing economies. In fact, Pissarides and McMaster (1990) show that interregional migration responds to the changes in regional inequalities; however, individuals follow a lagged response to the changes. Therefore, in reality economies mostly diverge from the Harris-Todaro equilibrium. Nevertheless, this paper examines the long-term impacts of agrarian structures on the urban inequality. The Harris-Todaro equilibrium condition would be a reasonable assumption for analyzing the long-term tendencies.

Some of the studies following Harris-Todaro also investigate whether the expected urban and rural incomes have symmetrical effects (Fields, 1982). The empirical studies (Fields, 1982; Schultz, 1982) show that both declining rural and increasing urban incomes have significant effects on the migration decisions. Therefore, for simplicity changes in the urban and rural incomes are taken to have a symmetric impact on migration.

The expected urban incomes of migrants depend on the urban wages, and the rate of employment. The expected urban income of migrants is

$$W_U^e = \frac{W_F L_F}{L_U} + \frac{W_S L_S}{L_U} \tag{2}$$

where W_F is an employed migrant's wage, L_F is the volume of urban employment, W_S is an underemployed person's income, L_S is the volume of urban underemployment and L_U is the urban

labor force. An examination of empirical data shows that the unemployment rates generally were not worsened following the urbanization trend (Fields, 1975). The growth in the urban sector rather changed the share of underemployed in the developing economies (Rauch, 1993). Therefore, this study also focuses on urban underemployment and avoids urban unemployment[11]. Hence, the urban population is

$$L_U = L_F + L_S \tag{3}$$

Underemployed individuals are urban dwellers doing subsistence activities. For the reasons that we discussed above, the agglomeration of labor in subsistence activities will not increase overall production, it will rather pull down the average subsistence income. Following Fields (1975), we will assume that the urban subsistence income is equally shared and per capita income is

$$W_S = \frac{Y_S}{L_U - L_F} = \frac{Y_S}{L_S} \tag{4}$$

where Y_S and L_S are total urban subsistence income and the number of underemployed respectively. Combining all, the Harris-Todaro equilibrium condition is

$$W_U^e = \frac{W_F L_F}{L_U} + \frac{Y_S}{L_U} = S_R + C \tag{5}$$

4.2 Agrarian structures and urban wage determination

Since this model assumes no urban unemployment, we assume that a member of the urban labor force will either be employed as a wage worker or will be underemployed in the urban subsistence sector. Urban wages for those employed are determined by a function dependent on urban workers' fallback position. The urban subsistence sector acts as a reserve army of labor and is considered to contain individuals who search for jobs within the urban capitalist sector (Patnaik, 2008; Hart, 1973; Williams and Tumusiile-Mutebile, 1978). Thus, similar to a Phillips Curve relationship, the urban capitalist wage is a positive function of the rate of employment within the urban capitalist sector. The urban capitalist wage is also dependent on the reservation wage z, which is the urban subsistence income in this model. Therefore, urban wages are determined by the following function[12]:

$$W_F = f(z, \frac{L_F}{L_U}) = f(\frac{Y_S}{L_S}, \frac{L_F}{L_U}),\ f_1 > 0,\ f_2 > 0 \tag{6}$$

In this model, x number of capitalists owning x identical firms whose production is described by the production function

$$y_f = n(l_f, k) \tag{7}$$

where l_f is the number of workers employed and k is the capital stock in each firm. Following this, the overall production in the urban capitalist sector is

$$Y_F = F(l_F x, kx) = F(L_F, K) \tag{8}$$

[11]It also avoids the changes in labor participation rate through changing labor participation of women. We will examine the impact of the non-agricultural labor participation of women in the empirical section of this paper.

[12]This condition is also similar to the non-shirking condition function in Shapiro-Stiglitz (1984), which examines the wages from a slightly different perspective by considering the conditions of shirking.

where L_F is the total employment in the urban capitalist sector and K the total capital stock in the urban capitalist sector. The first and second order conditions for the production function are

$$F_1 > 0,\ F_2 > 0,\ F_{11} < 0,\ F_{22} < 0,\ F_{12} > 0 \tag{9}$$

Wage improvements reduce employers' incentive to hire. Following this the aggregate labor demand (L_D) is

$$L_D^F = g(W_F, K),\ g_1 < 0,\ g_2 > 0 \tag{10}$$

In summary, the bargaining and labor demand functions determine the levels of urban wages and employment. Thus we can rewrite the bargaining equation (BC) as:

$$W_F = f(\frac{Y_S}{L_S}, \frac{L_F}{L_U}) = f(\frac{Y_S}{L_U - g(W_F, K)}, \frac{g(W_F, K)}{L_U}) \tag{11}$$

From here the impact of urbanization on wages is

$$\frac{dW_F}{dL_U} = \Big(\frac{Y_S f_1}{(L_U - g)^2} + \frac{g f_2}{L_U^2}\Big) \Big/ \Big(\frac{Y_S f_1 g_1}{(L_U - g)^2} + \frac{g_1 f_2}{L_U} - 1\Big) < 0 \tag{12}$$

In the case that all other conditions are the same, the increase in the urban population pulls the urban wages down by reducing urban subsistence income and the employment rate. We can rewrite the bargaining equation (BC) and labor demand (L_D) as a function of urban population and reorganize the Harris-Todaro equilibrium:

$$W_F = h(L_U),\ h^{'} < 0 \tag{13}$$

$$L_F = g(h(L_U), K),\ g_1 < 0,\ g_2 > 0 \tag{14}$$

$$\frac{g(h(L_U), K)}{L_U} h(L_U) + \frac{Y_S}{L_U} - S_R - C = 0 \tag{15}$$

which gives

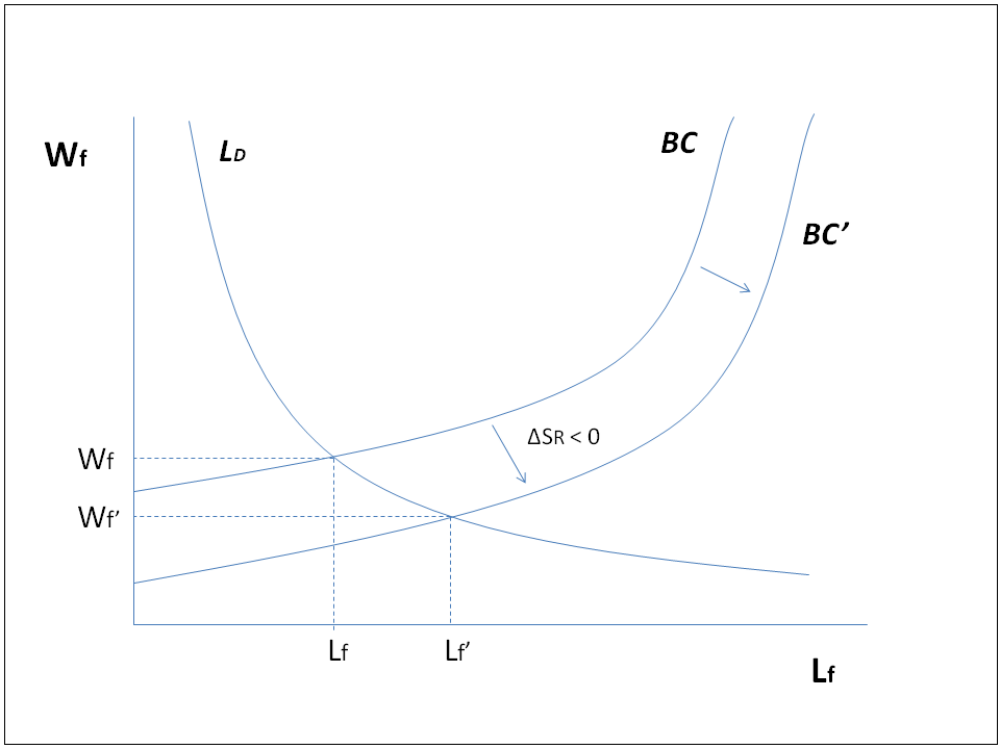
$$\frac{dL_U}{dS_R} = \frac{L_U^2}{-Y_S + h^{'}(g_1 h + g) L_U - g h} \tag{16}$$

dL_U/dS_R will surely be negative, if $(g_1 h + g) > 0$. This condition holds if the wage elasticity of labor demand is greater than -1. Most of the empirical studies on developing economies including studies on Latin American, African, Eastern European and Asian countries (Fajnzylber and Maloney, 2005; Lucas, 1996; Basu, Estrin and Svejnar, 2000; Min, 2007) show that the wage elasticity of labor demand is significantly greater than -1. Thus, dL_U/dS_R is very likely to be negative. When this is so, from (13),(14) and (16) higher income for peasants leads to higher wages and lower employment in the urban capitalist sector.

$$\frac{dW_F}{dS_R} > 0,\ \frac{dL_F}{dS_R} < 0 \tag{17}$$

Also from (6) and (12), we know that increase in L_U cannot reduce L_S by creating more employment(L_F) than the increase in L_U. Hence,

Figure 4: The impact of changing peasant income on the urban capitalist wages



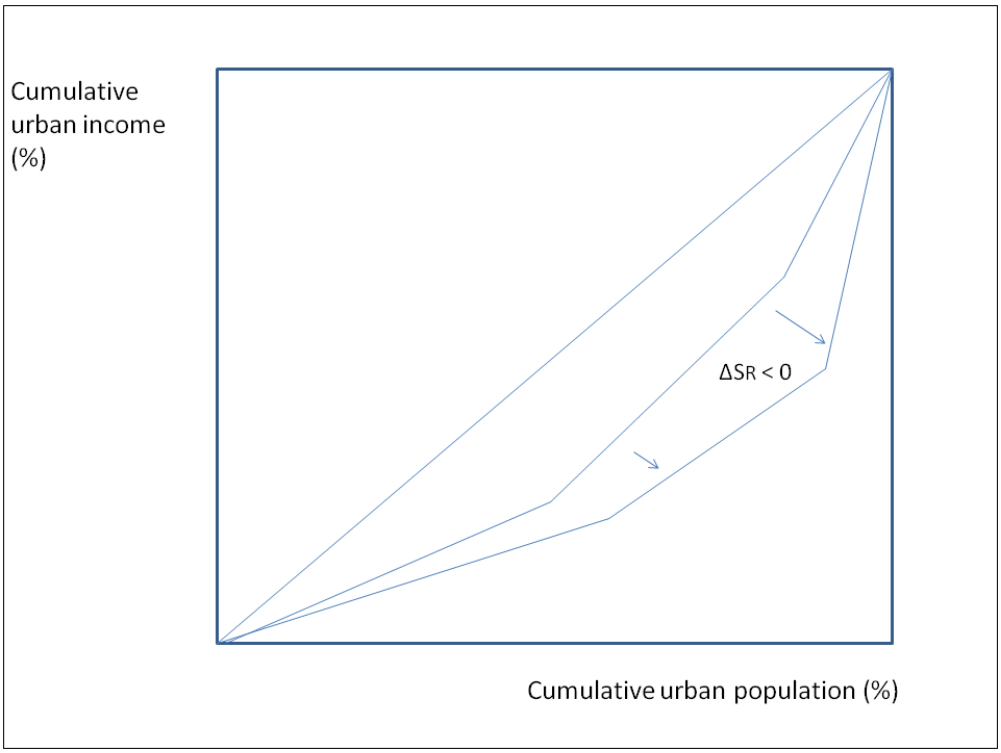
$$\frac{dL_S}{dL_U} > 0,\ \frac{dL_S}{dL_U}\frac{dL_U}{dS_R} < 0,\ \frac{d(Y_S/L_S)}{dS_R} > 0 \tag{18}$$

The implications of the model can graphically be observed in Figure 4. In the figure, the wages are determined by the bargaining (BC) and labor demand (L_D) curves. The curve BC' represents bargaining when peasant incomes are lower. That is, when peasant incomes are lower, so are urban capitalist wages. The reasoning here is that when peasant incomes are lower, there is a greater push toward the cities. Nevertheless, not all of these extra migrants will be able get employed in the urban capitalist sector. Hence, a greater number of urban dwellers will be congested in the urban subsistence sector. The congestion will pull the per capita urban subsistence incomes down to an even lower level. This would decrease the fallback position for the urban wage workers and allow a slightly greater number to be employed in the urban capitalist sector. Hence, if the wage elasticity of labor demand is above -1 the profit shares increase:

$$\frac{d((Y_F - W_F L_F)/Y_F)}{dS_R} < 0 \tag{19}$$

Figure 5 exhibits the possible increase in the urban Gini coefficient. In the Lorenz Curve, the urban population is divided into the three categories of urban underemployed, urban employed, and urban capitalists, listed in order of ascending income. The ratio between proportions of urban subsistence income to total urban income and urban subsistence workers to total urban population $\left(\frac{(Y_S/(Y_F+Y_S)}{L_S/L_U}\right)$ gives the slope on the left part of the Lorenz Curve. As the congestion in urban subsistence sector does not lead to greater employment in the urban employed, the rise in the overall urban inequality will be guaranteed. This can clearly be seen from

Figure 5: The impact of declining peasant income on urban inequality



$$d\left(\frac{(Y_S/(Y_F+Y_S)}{L_S/L_U}\right)\Big/ dL_S = \frac{(d(L_F/L_S)/dL_S + d(x/L_S))/dL_S)}{(1+Y_F/Y_S)} - \frac{(d(Y_F/Y_S)/dL_S)(L_U/L_S)}{(1+Y_F/Y_S)^2} \tag{20}$$

where x is the number of urban capitalists. In this condition, a decline in the peasants' income increases overall urban inequality, since the slope representing the underemployed becomes flatter and the urban population share of subsistence workers increases. Since the profit share would also rise, the Lorenz Curve would expand.

The incomes of peasants will be determined by the combination of the overall level of agricultural production and the distribution imposed by agrarian structures. There are several agrarian structures that can be considered and in each structure different outcomes for distribution could be observed. The agrarian structures that we will examine are:

a. Subsistence rural sector with fully egalitarian distribution: As with the urban subsistence sector, we make the extreme assumption of zero marginal productivity of labor; the extra family labor does not contribute to production. This is an assumption imposed in the Lewis (1954) model and could be a reasonable approximation for many developing economies. The assumption of fully egalitarian distribution gives us the result that each peasant's income is equal to the average product:

$$S_R = \frac{Y_R}{L_R} \tag{21}$$

where Y_R and N_R are the total amount of output and labor in the rural sector. It is assumed that all of the rural labor is employed, so the labor force is equal to employment ($N_R = L_R$).

b. Subsistence rural sector with identical peasants and income extraction of rentiers: In many of the structures with subsistence farms, we observe that subsistence farms coexist with larger landlords. The large landlords also take a rentier class position and earn rent through sharecropping/fixed rent contracts. In addition, they extract part of peasants' surplus through merchant and usury activities. This kind of surplus extraction is a significant feature of the agrarian structures in various parts of Asia (Bardhan, 1984; Chang, 1989; Boratav, 1989).

In these kinds of structures the distribution of land between small and large farms influences the shares of rent extracted. First, a monopsonic landowner holds an opportunity to demand a higher rent in fixed rent contracts or a greater share in sharecropping contracts (Griffin, Khan and Ickowitz, 2002). Even where the 50-50 rule is common in sharecropping contracts, the monopsonic landowner can extract a greater share of rent through leaving the burden of input on the tenants. Second, as the land concentration increases the larger landlords can achieve greater control of merchant and usury activities, which would improve their share of rent.

We can see the impact of greater land concentration through the following model. We assume that large landlords own β_F of total land (H_T), lease α of their land through fixed rent or sharecropping contracts, get λ of surplus from leased land and extract γ of peasants' income through merchant or usury activities. We still follow the Lewisian assumptions for subsistence activities. Therefore, peasants' total incomes from self-owned (Y_P) and rented (Y_R) land are

$$Y_P = y_P H_P,\ Y_R = y_P H_R \tag{22}$$

where y_P, H_P, H_R are identical small peasants' production per land, amount of total land owned and amount of land rented respectively. Hence, income for each subsistence peasant is

$$S_R = \left(\frac{(1-\beta_F) y_p H_T + (1-\lambda(\beta_F))\alpha\beta_F y_p H_T}{N_P} \right)(1-\gamma(\beta_F)) \tag{23}$$

N_P is the number of small peasants in the rural sector. Greater land concentration (β_F) raises landlords' share on rent contracts and usury and merchant activities for the reasons suggested above. From here, the migration function for this type of agrarian structure is:

$$\frac{g(h(L_U), K)}{L_U} h(L_U) + \frac{Y_S}{L_U} - S_R^*(1-\gamma(\beta_F)) - C = 0 \tag{24}$$

where $S_R^* = ((1-\beta_F) y_p H_T + (1-\lambda(\beta_F))\alpha\beta_F y_p H_T))/N_P$

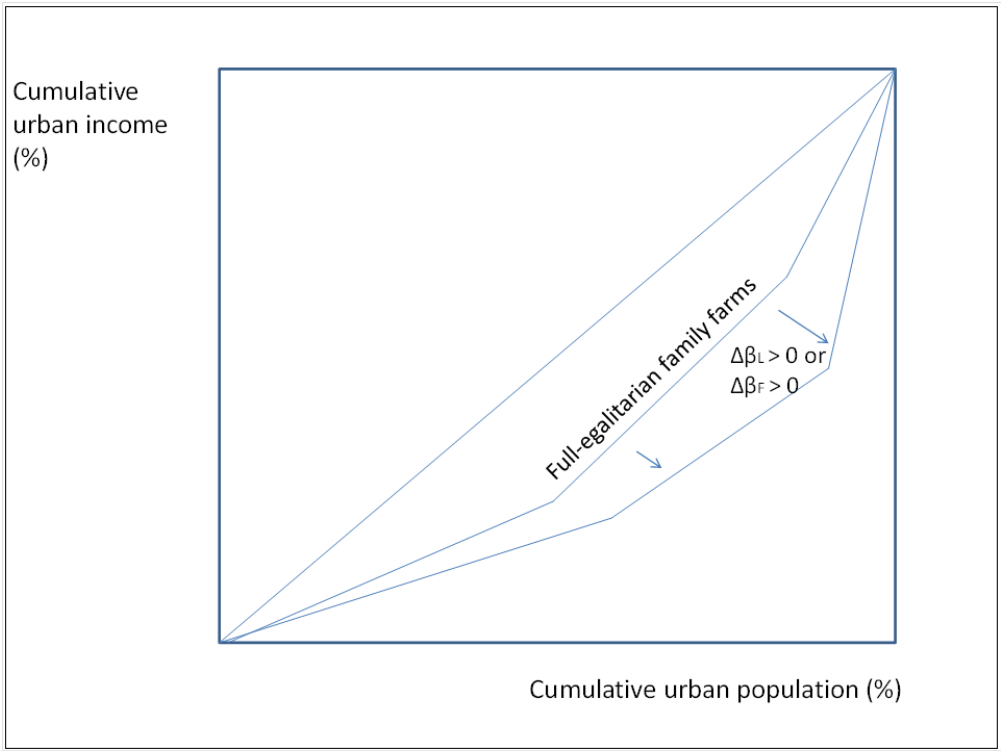
From the implicit function theorem, the impact of greater land concentration on the rate of urbanization is

$$\frac{dL_U}{d\beta_F} = \frac{y_p H_T((1-\gamma)/N_P)(1-(1-\lambda)\alpha + \lambda'\alpha\beta_F) + \gamma' S_R^*}{Y_S/L_U^2 + gh/L_U^2 - h'(g_1 h + g)/L_U} \tag{25}$$

If we follow the assumption the wage elasticity of labor demand is greater than -1, then $dL_U/d\beta_F > 0$, since α, λ, γ and β_F are between 0 and 1, and $(dN_P)/(dL_U) = -1$. The impact of land concentration will rise as monopsony power of rentiers influence the rent contacts and usury and merchant share more. Therefore, higher rentier share would increase urban inequality as in Figure 6.

c. Latifundio-minifundio type farms: The plantation-type farms are rural structures in which the production is done by wage workers. These structures are mostly associated with the Latin American countries like Brazil, Chile and Peru (Furtado, 1976). Like urban capitalist enterprises,

Figure 6: The impact of rising land concentration on urban inequality



plantations are concerned with profit maximization. In Latin American countries, latifundios co-exist with minifundios in which peasants own an extremely limited income that would hardly enable them live. These are very small-scale subsistence family farms. Hence, it is plausible to assume that in minifundios the marginal labor does not contribute to overall production. Hence, peasant income in minifundios is

$$S_M = \frac{Y_M}{L_M} = \frac{(1-\beta_L)H_T y_M}{L_M} \tag{26}$$

where Y_M and L_M respectively are the total production and labor in minifundios and H_T, β_L, y_M are overall rural land size, latifundios' land share and minifundios' production per land.

The total output in latifundios is dependent on labor and land size:

$$Y^W = Y^W(L_W, \beta_L H_T) \tag{27}$$

with the conditions of

$$Y_1^W > 0,\ Y_2^W > 0,\ Y_{11}^W < 0,\ Y_{22}^W < 0,\ Y_{12}^W > 0 \tag{28}$$

We take latifundios as profit maximizing structures with following profit function

$$\pi_W = Y^W(L_W, \beta_L H_T) - W_W L_W \tag{29}$$

where W_W is wage and L_W is amount of wage-labor in latifundios. The first order condition $Y_W^W = W_W^*$ will give the wage labor in plantations (L_W^*).

Nevertheless, we haven't yet examined what will determine the wages in latifundios (W_W). Since the minifundios and latifundios mostly coexist together, the labor markets in each structure are not entirely distinguished from each other. In minifundios, extreme poverty forces the peasants to work in plantations either as temporary or permanent worker (De Janvry, 1981). If $\bar{L}_W$ is the number of landless peasants in latifundios and is $\bar{L}_M$ the labor living in minifundios, the owners of latifundios will demand extra labor (t) from minifundios, as long as the following condition exists

$$Y_1^W(\bar{L}_W, \beta_L H_T) > \frac{Y_M}{\bar{L}_M} \tag{30}$$

The flow of labor from minifundios will stop at

$$W_W^* = Y_1^W(L_W^*, \beta_L H_T) = S_M^* = \frac{Y_M}{L_M^*} \tag{31}$$

where

$$L_W^* = \bar{L}_W + t,\ L_M^* = \bar{L}_M - t \tag{32}$$

Thus, we get an equivalent level of income minifundios and wage workers in latifundios, which determine the level of income for marginal peasant. By using this model we can also show the impact of changing distribution in these structures. The income of each minifundista can be rewritten as

$$S_M = \frac{(1-\beta_L)H_T y_M}{\bar{L}_M - t} \tag{33}$$

From here we can get two equations that explain the changes in the latifundio-minifundio structure:

$$F^1 = Y_1^W(\bar{L}_W + t, \beta_L H_T) - (1-\beta_L)H_T y_M/(\bar{L}_M - t) = 0 \tag{34}$$

$$F^2 = \frac{g(h(L_U), K)}{L_U} h(L_U) + \frac{Y_S}{L_U} - \frac{(1-\beta_L)H_T y_M}{\bar{L}_M - t} - C = 0 \tag{35}$$

The changing land share affects both the amount of t and L_U. The impact of land share is determined by

$$\begin{bmatrix} \frac{dF^1}{dL_U} & \frac{dF^1}{dt} \\ \frac{dF^2}{dL_U} & \frac{dF^2}{dt} \end{bmatrix} \begin{bmatrix} \frac{dL_U}{d\beta_L} \\ \frac{dt}{d\beta_L} \end{bmatrix} + \begin{bmatrix} \frac{dF^1}{d\beta_L} \\ \frac{dF^2}{d\beta_L} \end{bmatrix} = 0 \tag{36}$$

From here the Jacobian is

$$\left|J\right| = \begin{bmatrix} \frac{(1-\beta_L)H_T y_M}{(\bar{L}_M - t)^2}\frac{d\bar{L}_M}{dL_U} + Y_{11}^W \frac{d\bar{L}_W}{dL_U} & Y_{11}^W - \frac{(1-\beta_L)H_T y_M}{(\bar{L}_M - t)^2} \\ \frac{(g_1 h' h + g h')L_U - gh}{L_U^2} - \frac{Y_S}{L_U^2} + \frac{(1-\beta_L)H_T y_M}{(\bar{L}_M - t)^2}\frac{d\bar{L}_M}{dL_U} & -\frac{(1-\beta_L)H_T y_M}{(\bar{L}_M - t)^2} \end{bmatrix} \tag{37}$$

and

$$\left|J\right| < 0 \tag{38}$$

considering that the total decline in population in minifundios and latifundios is the growth of population in the urban sector ($d\bar{L}_W/dL_U + d\bar{L}_M/dL_U = -1$) and following the assumption that the wage elasticity of labor demand is greater than -1. The impact of land share on the urban population is

$$\frac{dL_U}{d\beta_L} = -\frac{\begin{bmatrix} Y_{12}^W H_T + \dfrac{H_T y_M}{\bar{L}_M - t} & Y_{11}^W - \dfrac{(1-\beta_L)H_T y_M}{(\bar{L}_M - t)^2} \\ \dfrac{H_T y_M}{\bar{L}_M - t} & -\dfrac{(1-\beta_L)H_T y_M}{(\bar{L}_M - t)^2} \end{bmatrix}}{\big|J\big|} \tag{39}$$

Thus, the sign of $dL_U/d\beta_L$ becomes positive when

$$\frac{(1-\beta_L)H_T}{\bar{L}_M - t} Y_{12}^W + Y_{11}^W < 0 \tag{40}$$

which is satisfied when

$$\frac{d(\bar{L}_W + t)}{d(\beta_L H_T)} < \frac{\bar{L}_M - t}{(1-\beta_L)H_T} \tag{41}$$

Thus, a regressive redistribution favoring latifundios pushes peasants to the urban sector, if the redistribution cannot create as many jobs in the latifundios as the number of the minifundistas losing their land. This depends on labor productivities in latifundios and minifundios.

According to Furtado's definition, the latifundios in Latin America are classified as farms hiring more than 12 workers. For examining the labor productivity ratios between latifundios and minifundios, we can check the empirical studies. Thiesenhausen and Melmed-Sanjak (1990) examine the labor productivities in Brazilian farms for 1970s and 1980s. According to their estimates in the farms with land size between 2000-10000 hectares, the labor productivity is 5.2 times more than the farms with size between 10-50 hectares, 12.1 times more than the farms with size between 1-10 hectares and 22 times more than farms with land below 1 hectare. Therefore, if there is a regressive land distribution favoring latifundios, latifundios new land over wage labor created cannot exceed the production over labor ratio in minifundios. Hence

$$\frac{dL_U}{d\beta_L} > 0 \tag{42}$$

is very likely to be observed. Therefore, a regressive land redistribution pulls down both incomes of minifundios and wages in latifundios[13] and pushes peasants to the urban sector. Following our model, urban inequality is expected to be greater in a less egalitarian minifundio-latifundio structure.

4.3 Limitations of the model

The model presented above suggests a mechanism connecting land and income inequalities. Nevertheless, it excludes several issues that might deserve attention in future studies. First, the model takes the growth of capital in the given sectors as exogenous. The reason for that is that income inequality's influence on the long-run economic growth depends on various factors that can hardly

[13]The latifundios often also extract part of minifundios' income through usury and merchant activities (De Janvry, 1981). Following Griffin, Ickowitz and Khan (2002), greater land concentration will have even further negative influence on S_R due to latifundios' greater rent extraction.

be fully understood by the simple assumptions imposed in a model. The classical Lewis (1954) model conceives the flow of "unlimited supplies of labor" as positive for capital accumulation, since it lowers the capitalist wages and contributes to the growth of surplus. On the other hand, the neo-Kaleckian models take the capacity utilization rates into account and suggest that the Lewisian arguments might not hold. Among the neo-Kaleckian models, Dutt (1984) suggests a model which exhibits developing economies as wage-led, and Marglin and Bhaduri (1990) show that economies might either be wage or profit-led depending on their structures. In addition, the neo-Marxian models (Goodwin, 1967; Skott, 1989) claim that growth and wage shares are endogenous to each other; therefore, the unemployment rate and wage share follow circular cycles.

There are other factors that these models do not capture. As mentioned in the previous sections, high inequality creates an important impediment to the development of human capital. In addition, high inequality might lead to problems such as credit constraint problems, increased crime and corruption and social unrest (Griffin and Ickowitz, 1998; Voitchovsky, 2009) that might impede long-run economic growth. Indeed, several empirical studies (Easterly, 2007; Alesina and Rodrik; 1996; Deininger and Squire, 1998) show that higher income inequality reduced long-run growth during the second half of the 20th century. Due to the complex structure of inequality's long-run influence on growth, this article prefers not to touch on inequality's impact on capital accumulation.

Second, the model does not take the urban-rural terms of trade into account. Following the Harris-Todaro (1970) framework, urban-rural terms of trade are influenced by the ratio of total urban and rural incomes. However, it might also be reasonable to assume that the urban-rural terms of trade converges to the world prices and turns into an exogenous variable as the economies become open to trade (Skott and Larudee, 1998). Nevertheless, my model does not have a detailed interpretation of inequality's impact on growth. Therefore, the model does not include a variable on the urban-rural terms of trade.

Third, the model does not consider the urban "marginal mass" consisting of workers who are not able to function as a reserve army for many industries (Nun, 2000)[14]. The group of workers named as the "marginal mass" might not be capable of working in the sectors that requires skilled labor. Nevertheless, the marginal mass might still increase the surplus in the skilled sectors through providing cheap services to the wage workers, which might pull the skilled wages down in nominal terms.

Lastly, here I assume that rural dwellers are employed only in the agricultural sector. However, in the contemporary world an increasing number of peasants are employed in industry or services, which are often associated with the urban sector (Keyder and Yenal, 2011; Bernstein, 2003). These individuals either are employed in full-time jobs in the industrial or services sector or they work for wages part-time and pursue their traditional activities part-time. The direction that the new rural sector is moving towards is not entirely inconsistent with the framework depicted in this article. Higher land inequality might not enforce migration in every case. However, the individuals still can be added to the reserve army of labor as they seek jobs outside agriculture, even while they are living in the rural areas.

5 Empirical Analysis

5.1 Variable selection

This section presents an empirical analysis testing the relevance of the arguments in the model. We will try to examine land inequality's influence on both urban and overall income inequality.

[14] Also see Kay (1989) for a detailed summary discussions around the marginal mass argument.

Table 1: Dataset Summary Statistics

	Mean	Std. Dev.	Min	Max
Land Gini Coefficient	0.61	0.16	0.27	0.92
Overall Income/Expenditure Gini Coefficient	0.41	0.10	0.24	0.70
Urban Income/Expenditure Gini Coefficient	0.46	0.08	0.30	0.67
Rate of Urbanization	0.59	0.23	0.13	0.99
GDP per capita (1000 USD)	12.69	13.57	0.23	49.97
Trade Openness	0.78	0.36	0.23	1.83
Women's Non-agricultural Labor Participation Rate	0.39	0.12	0.10	0.52
Education Gini Coefficient	0.36	0.17	0.11	0.83
Polity IV Index	4.26	6.13	-10.00	10.00
Voice and Accountability Index	-0.03	0.96	-1.74	1.61
Land Area	956437.7	1924322	760	9327490

For measuring land distribution, I use a dataset of 99 countries including Gini values from the 1960's. Using land distribution data from the 1960s has two advantages. First, it demonstrates the lasting effects of the pre-urbanization initial conditions. Second, it prevents any questions of reverse causality from clouding the analysis.

The overall income inequality is measured with an income Gini coefficient. However, some countries report only expenditure Ginis rather than income. This study uses expenditure Ginis as a proxy for income Ginis, but since expenditure Gini coefficients are smaller than income Ginis for the majority of countries that report both (Deininger and Squire, 1996), my regression includes a dummy variable controlling for the use of this proxy. The measurement of urban income inequality follows the same procedure: income Ginis where available, expenditure Ginis and a dummy variable when necessary. For measuring the level of urbanization, I used an urbanization rate variable showing the share of population living in the urban sector.

The regressions also control the Kuznets (1955) hypothesis by using log(GDP per capita) and its square. This is similar to the estimations in a number of studies (Ahluwalia, 1976; Jha, 1996; Mbaku, 1997; Barro, 2000). Another variable that might affect income inequality is trade openness. The mainstream argument relying on the traditional trade theory claims that trade openness increases inequality in the developed economies and reduces it in the developing economies (Stolper and Samuelson, 1941). Nevertheless, many political economists (Burke and Epstein, 2001; Kaplinsky, 2001; Onaran, 2009; Pollin, 2002; Rao, 1998; Rudra, 2008) claim that trade openness leads to more unequal distribution both in the developed and developing world. They assert that trade openness reduces labor's bargaining power through rising flexibility and substitutability of labor. This might lead to lowering wage shares and hence higher overall inequality. The arguments for trade openness will be controlled by a variable measuring trade openness as a ratio of trade volume (exports + imports) over GDP.

This study conceives of the rural-to-urban migration as an important source for the creation of a larger reserve army of labor. However, there are other sources that can also help to sustain high levels of surplus. Both Marx (1867) and Lewis (1954) discuss the role of women's labor participation on the growth of the reserve army/unlimited supplies of labor. Therefore, this study also controls for the non-agricultural labor participation rate of women.

The regressions on the rate of urbanization control for the logarithm countries' total land area. Many countries experience "first city bias", where a significant part of the urban activities agglomerate around one or two cities (Todaro and Smith, 2009). In countries with a large land area, large distances between the leading cities and rural areas might limit the growth in the share of urban population by increasing the costs of migration.

Lastly, this study also tests the relevance of arguments by Galor and Zeira (1993), Galor and Tsiddon (1996), Bourguignon and Verdier (2000) and Galor and Moav and Vollrath (2004) concerning institutions and education inequality. Controlling for the institutional mechanisms that might translate land inequality into urban income inequality allows us to see whether the bargaining effect makes a contribution independent of education disparities. The outcomes of higher education inequality can be observed in the longer run. Hence, I used 10-year lags of education Gini and indices of democracy. This also relieves the problem of reverse causality in the regressions where education Gini and indices of democracy are controlled.

5.2 Data sources

The land distribution dataset used in this study is available in Appendix-1. For consistency, I relied mainly on the land distribution dataset of Frankema (2010). Nevertheless, data from major sources like Deininger and Squire (1998), Muller and Seligson (1987), Berry and Cline (1979) and IFAD (2001) are also added to the sample[15]. In these studies, FAO's reports on the World Census (1950, 1960, 1970) are important sources for the calculation of the majority of the land Gini values. Nevertheless, the agriculture surveys are not conducted yearly. For the majority of countries, there is a long time span between two surveys and for many of the countries there are only 1-2 available land distribution observations. This does not allow us to have a balanced series for land distribution. Therefore, this study uses one observation from a year around 1960.

The overall income/expenditure Gini coefficients are from CEPAL database for Latin American, PovcalNet for Asian and African, Asian Development Bank database for Asian, Eurostat database for European and OECD database for non-European developed countries. Various other sources were helpful including UNU-WIDER (2008)'s World Income Inequality Database for reaching data not available in any of the sources above[16]. The details for the data sources are listed Appendix-1. The urban inequality dataset is limited compared to the dataset for overall income inequality. One of the reasons for this is that in most of the developed economies, a clear divide between urban and rural sectors disappeared. Hence, for the majority of developed countries Gini values are not calculated separately for urban and rural sectors. For the developing countries, two UN-Habitat (2010a, 2010b) reports, "State of the World Cities 2010/2011: Bridging the Urban Divide" and "The State of African Cities 2010: Governance, Inequality and Urban Land Markets" are important sources for urban Gini coefficients. The rest of the observations come from CEPAL (2011), PovcalNet (2011), Eastwood and Lipton (2004) and various other sources listed in the Appendix-1. Since the observations for urban Gini are already limited, I only used the most recent urban Gini observations.

For GDP per capita, I used the data of Penn World Tables v7.0. The urbanization rate, trade openness, non-agricultural labor participation rate and total land area come from World Bank's World Development Indicators. Education Gini coefficients come from Benaabdelaali, Hanchane and Kamal's (2012) study. Benaabdelaali, Hanchane and Kamal calculate education inequality by using Barro and Lee (2010)'s dataset on educational attainment. I used education Gini coefficients

[15]Countries with a population below 1 million are excluded from the sample.

[16]The main problem with the UNU-WIDER (2008) database is that it has not been updated recently; the database ends at 2006

for population aged 15 and over. For controlling the levels of democracy I used two different indices. The first index is Polity IV formed by Marshall and Cole (2011). This index measures whether a country's regime is closer to full democracy or full autocracy. The second index I used is World Bank's Voice and Accountability index of Worldwide Governance Indicators. World Bank defines it as an index reflecting "perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media". The increases in both indices imply improvement in democracy. As these indices exhibit the citizens' capability of participating in political process, they can also be considered as a proxy of power inequality.

Table 2: The impact of land inequality from 1960's on the recent urban income inequality - *dependent var: Urban income Gini coefficient*)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Land Gini (1960)	0.130***	0.167**	0.199**	0.201*	0.215*	0.202*	0.165**	0.153**
	(0.068)	(0.067)	(0.074)	(0.057)	(0.058)	(0.068)	(0.069)	(0.066)
Expenditure	-0.048**	-0.065*	-0.021	-0.052*	-0.057**	-0.036	-0.061*	-0.056**
	(0.021)	(0.022)	(0.022)	(0.018)	(0.020)	(0.029)	(0.021)	(0.021)
Log_GDP		-0.011	0.061***		-0.008	0.094**	-0.017	-0.009
		(0.015)	(0.034)		(0.017)	(0.042)	(0.014)	(0.013)
$(\text{Log\_GDP})^2$		-0.003	-0.028***		-0.002	-0.035**	-0.004	-0.006
		(0.007)	(0.014)		(0.007)	(0.017)	(0.007)	(0.007)
Openness			-0.033			-0.026		
			(0.020)			(0.020)		
Women			0.330*			0.308**		
			(0.101)			(0.146)		
Southern Africa	0.144*	0.139*	0.120**	0.161*	0.155*	0.125**	0.126*	0.130*
	(0.029)	(0.027)	(0.053)	(0.025)	(0.027)	(0.051)	(0.029)	(0.028)
Education Gini (2000)				0.083	0.042	0.090		
				(0.060)	(0.073)	(0.119)		
Voice and Acc. (2000)							0.024	
							(0.016)	
Polity IV (2000)								0.004**
								(0.001)
Constant	0.387*	0.392*	0.222*	0.302*	0.328*	0.161***	0.411*	0.388*
	(0.052)	(0.051)	(0.053)	(0.058)	(0.067)	(0.092)	(0.055)	(0.048)
Adj. R-squared	0.39	0.40	0.49	0.45	0.44	0.50	0.41	0.43
Observations	56	56	35	54	54	34	56	56

Notes: Robust standard errors are reported in parentheses. *, **, *** denote 1%, 5% and 10% confidence levels, respectively.

5.3 Empirical results

The cross-country equations I estimate are in the form of

$$urbangini_i = \beta_0 + \beta_1 landgini_i + \sum_{k=2}^{n} \beta_k X_{ki} + \epsilon_i \tag{43}$$

$$incomegini_i = \beta_0 + \beta_1 landgini_i + \sum_{k=2}^{n} \beta_k X_{ki} + \epsilon_i \tag{44}$$

where for country i and in year t, *urbangini*, *incomegini*, and *landgini* are urban income Gini, overall income Gini and land Gini coefficients respectively. I use OLS regressions, since the land inequality data is very limited, imbalanced and discrete. Moreover, the land inequality data are richer for 1950s, 1960s and 1970s; whereas, the income inequality data are richer for the period after 1990. This does not allow a reliable empirical analysis using country fixed effects. Nevertheless, OLS regressions are useful for our purposes, they allow us examine whether the cross-country differences of land inequality are transmitted to the cross-country differences of urban and income inequalities.

Table 3: The impact of land inequality from 1960's on overall income inequality for all years *(OLS regressions - dependent var: Overall income Gini coefficient)*

	(1)	(2)	(3)	(4)	(5)	(6)
Land Gini (1960)	0.195*	0.151*	0.170*	0.206*	0.130**	0.142*
	(0.018)	(0.051)	(0.054)	(0.070)	(0.058)	(0.051)
Expenditure	0.010	-0.072*	-0.085*	-0.017	-0.086*	-0.094*
	(0.064)	(0.022)	(0.019)	(0.025)	(0.025)	(0.019)
Log_GDP		0.029	0.109*		0.017	0.082*
		(0.019)	(0.025)		(0.020)	(0.024)
(Log_GDP)^2		-0.021*	-0.041*		-0.020*	-0.037*
		(0.005)	(0.006)		(0.005)	(0.006)
Openness			0.012			-0.010
			(0.022)			(0.015)
Women			0.136***			0.157***
			(0.073)			(0.092)
Southern Africa		0.126*	0.180*		0.119*	0.171*
		(0.030)	(0.029)		(0.032)	(0.030)
Education Gini (2000)				0.134***	-0.032	-0.048
				(0.069)	(0.072)	(0.104)
Constant	0.284*	0.393*	0.259*	0.236*	0.442*	0.342*
	(0.044)	(0.045)	(0.050)	(0.051)	(0.073)	(0.087)
Adj. R-squared	0.08	0.52	0.76	0.10	0.57	0.80
Observations	99	99	64	92	92	62

Notes: Robust standard errors are reported in parentheses. *, **, *** denote 1%, 5% and 10% confidence levels, respectively.

First, Table 2 reports the results for the urban Gini coefficient. Consistent with our model, the results support a positive relationship between land inequality in the 1960s and recent urban Gini coefficient, when we control for Southern African countries (Botswana, Lesotho, Malawi,

Mozambique, South Africa, Swaziland, Zambia) and several other variables. The Southern African dummy is significant for all of the regressions; however, we cannot see a significant proof for the existence of the Kuznets Curve and trade openness. There is a weak evidence on women's labor force participation rate's negative impact on urban income inequality. Lastly, the coefficient education inequality is insignificant and the democracy indices take wrong signs implying that the expansion of democracy frontier increase the income inequality. The lack of significance in some of the coefficients might be due to size of the sample used. Thus, we might expect the regressions with overall income inequality to give clearer results.

Next, the estimations for the overall income Gini coefficients are exhibited by Tables 3 and 4. The significance of coefficients in these tables improves with the larger number of observations. The coefficients for the land Gini are significantly positive in all of the regressions, which supports our hypothesis. In Table 3, the signs for $log(GDP)$ and $log(GDP)^2$ are respectively positive and negative and they significant at 1% level, when trade openness and women's non-agricultural labor participation are controlled. This seems to be an evidence in favor of the Kuznets hypothesis.

Table 4: The impact of land inequality from 1960's on overall income inequality for all years when institutions are controlled *(OLS regressions - dependent var: Overall income Gini coefficient)*

	(1)	(2)	(3)	(4)	(5)	(6)
Land Gini (1960)	0.173*	0.150*	0.170*	0.195*	0.145*	0.157*
	(0.060)	(0.051)	(0.055)	(0.064)	(0.052)	(0.051)
Expenditure	-0.037***	-0.073*	-0.088*	0.009	-0.064**	-0.080*
	(0.021)	(0.022)	(0.020)	(0.019)	(0.023)	(0.019)
Log_GDP		0.029	0.108*		0.031***	0.099*
		(0.018)	(0.024)		(0.019)	(0.025)
(Log_GDP)^2		-0.020*	-0.041*		-0.022*	-0.040*
		(0.005)	(0.007)		(0.005)	(0.006)
Openness			0.012			0.001
			(0.022)			(0.016)
Women			0.110			0.050
			(0.111)			(0.097)
Southern Africa		0.127*	0.178*		0.125*	0.179*
		(0.030)	(0.030)		(0.030)	(0.028)
Voice and Acc. (2000)	-0.040*	-0.002	0.006			
	(0.011)	(0.011)	(0.016)			
Polity IV (2000)				-0.001	0.001	0.003
				(0.002)	(0.001)	(0.002)
Constant	0.318*	0.392*	0.275*	0.288*	0.387*	0.303*
	(0.042)	(0.046)	(0.064)	(0.045)	(0.046)	(0.052)
Adj. R-squared	0.18	0.51	0.76	0.07	0.53	0.79
Observations	99	99	64	97	97	63

Notes: Robust standard errors are reported in parentheses. *, **, *** denote 1%, 5% and 10% confidence levels, respectively.

The impact of trade openness is not significant in all of the regressions and has contradicting signs. Thus, we cannot find strong evidence for the impact of trade openness on overall Gini coefficients. The coefficient for women's non-agricultural labor participation is only significantly positive at 10% level in two of the four regressions; however, the signs are positive for all regressions. Thus, there is only weak that women's non-agricultural labor participation tends to increase income inequality. [17]. One potential explanation for the less significant effect of women's labor force participation is that, especially in the more developed economies, some women might occupy capitalist or rentier class positions. In this case, some of the increase in women's labor force participation is not captured by the reserve army of labor.

Table 5: The impact of land inequality from 1960's on the rate of urbanization *(OLS regressions - dependent var: Rate of Urbanization in 2010)*

	(1)	(2)	(3)	(4)
Land Gini (1960)	0.446*	0.224**	0.245**	0.246**
	(0.142)	(0.095)	(0.101)	(0.099)
Log_GDP		0.120*	0.131*	0.131*
		(0.012)	(0.011)	(0.011)
Openness			0.002	0.018
			(0.047)	(0.054)
Log_Area				0.008
				(0.011)
Constant	0.323*	0.243*	0.207*	0.097
	(0.089)	(0.056)	(0.074)	(0.167)
Adj. R-squared	0.08	0.56	0.62	0.62
Observations	99	99	87	87

Notes: Robust standard errors are reported in parentheses. *, **, *** denote 1%, 5% and 10% confidence levels, respectively.

The effect of education inequality is positive at 10% significance level for only one of the three regressions controlling for the education Gini coefficient. Thus, the evidence on the impact of education inequality on the overall income inequality is surprisingly weak. This might be explained by two reasons. First, the education Gini coefficients are strongly correlated with GDP per capita. This is because the education Gini is strongly negatively correlated with the years of schooling[18] (Benaabdelaali, Hanchane and Kamal, 2012; Thomas, Wang and Fan, 2011), and increasing income per capita has a very positive effect on years of schooling. For this reason also, education Gini's coefficients are more significant in the regressions where $log(GDP)$ and $log(GDP)^2$ are not included. We will not be concerned with the correlation between education Gini and GDP, since the focus of this study is exhibiting the importance of the bargaining aspect. Second, in many countries the premium for skill increases due to skill-biased technical change (Autor, Katz and Kearney, 2008). The increasing skill premium might keep income inequality at higher levels in countries where the

[17] We need to keep in mind that the income inequality in here is mainly measuring the inequality between households. For the obvious reasons, greater labor force participation of women is expected to increase the income gaps within households. However, this effect cannot be captured by this study's dataset.

[18] The correlation coefficient is -0.63 for the recent data.

education inequality is lower.

Table 6: The impact of urbanization on overall income inequality ***(IV regressions - dependent var: Overall income Gini coefficient)***

Two stage least squares					
	(1)	(2)	(3)	(4)	(5)
Log(Urbanization)	0.051***	0.074**	0.054**	0.075**	0.073**
	(0.030)	(0.030)	(0.026)	(0.029)	(0.030)
Expenditure	-0.099*	-0.098*	-0.121*	-0.098*	-0.088*
	(0.023)	(0.019)	(0.018)	(0.020)	(0.021)
Log_GDP	0.030	0.025	0.005	0.024	0.026
	(0.029)	(0.030)	(0.025)	(0.030)	(0.030)
$(\text{Log\_GDP})^2$	-0.028*	-0.027*	-0.026*	-0.027*	-0.028*
	(0.006)	(0.006)	(0.005)	(0.007)	(0.006)
Openness	0.021	0.008	-0.006	0.008	-0.001
	(0.021)	(0.019)	(0.015)	(0.019)	(0.016)
Southern Africa		0.135*	0.117*	0.134*	0.135*
		(0.024)	(0.027)	(0.024)	(0.025)
Education Gini (2000)			-0.102		
			(0.072)		
Voice and Acc. (2000)				0.002	
				(0.010)	
Polity IV (2000)					0.002
					(0.001)
Constant	0.321*	0.229**	0.400*	0.229**	0.230**
	(0.111)	(0.108)	(0.100)	(0.109)	(0.110)
First stage for log(urbanization)					
Log(Urbanization) - 1990	0.829*	0.827*	0.808*	0.828*	0.826*
	(0.066)	(0.071)	(0.074)	(0.072)	(0.072)
F-values	134.09	135.67	85.75	96.47	97.39
Observations	87	87	82	87	85
Ordinary least squares					
Log(Urbanization)	0.054***	0.075**	0.052***	0.075**	0.070**
	(0.030)	(0.033)	(0.028)	(0.033)	(0.032)

Notes: Robust standard errors are reported in parentheses. *, **, *** denote 1%, 5% and 10% confidence levels, respectively.

The inequality reducing impact of democracy is significant only in one of the six regressions in which I used Polity IV and Voice and Accountability index as a proxy for democracy. Although democracy might expand the education frontier as depicted in Bourguignon and Verdier (2000) and Engerman and Sokoloff (2005), as with education inequality, better democracy might not necessarily reduce inequality due to rising skill premium. The signs for land Gini coefficients are significantly positive in the regressions that control for education Gini. Hence, our hypothesis regarding land

inequality's impact on bargaining relations is still not rejected[19] even when we control for education inequality. Moreover, the lack of evidence on the influence of education inequality and democracy indices might suggest that the bargaining aspect explains that relationship between land and income Gini coefficients better than the institutionalist aspect focusing on the education inequality.

To support the interpretation above, we will examine whether the positive relationship between land and income inequalities is due to the mechanism I suggested back in the theoretical section. First we will examine whether higher land inequality lead to greater agglomeration in today's urban sector.

$$urban_i = \beta_0 + \beta_1 landgini_i + \sum_{k=2}^{n} \beta_k X_{ki} + \epsilon_i \tag{45}$$

where *urban* is the rate of urbanization. Table 5 presents the results for the cross-country OLS estimation. The results are consistent with the argument that greater land inequality pushes more individuals to the urban sector. Also, as expected, higher GDP is associated with greater level of urbanization.

Last, we will test the influence of greater urban agglomeration on income inequality. An OLS regression between the urbanization rate and income inequality would very likely suffer from an endogeneity problem[20]. Hence, I instrumented the rate of urbanization with the 20 years lag of rate of urbanization in the following form:

$$log(urban_i) = \beta_0 + \beta_1 log(urban90_i) + \sum_{k=2}^{n} \beta_k X_{ki} + \epsilon_i \tag{46}$$

$$incomegini_i = \beta_0 + \beta_1 log(urban_i) + \sum_{k=2}^{n} \beta_k X_{ki} + \epsilon_i \tag{47}$$

Table 6 show the results for the 2SLS regressions. The regressions exhibit that an increase in urbanization leads to higher inequality when other variables are controlled. Thus, consistent with the model, for a given income level, a greater congestion in the urban sector might increase income inequality. The relationship is significant at 5% level in four of the five regressions. Lastly, for testing the robustness of results, I also exhibit the simple OLS regressions where a higher rate of urbanization is found to increase income inequality. Nevertheless, the estimations in Table 6 do not support the claim that the expansion of education frontier is determinant on the cross country differences of income inequality. This again suggests that the bargaining aspect is more explanatory than the institutionalist aspect.

6 Conclusions

This study explores how the development paths that the developing countries follow are influenced by their agrarian structures. Much of the literature on land-income inequality relationship suggests that land inequality leads to unequal educational opportunities that are often elevated by institutions favoring non-poor (Engerman and Sokoloff, 2002; 2005; Galor and Zeira, 1993; Galor and

[19]The correlation between education inequality and land inequality is very weak and surprisingly negative. The correlation coefficient between land and education Gini coefficients are -0.126. Similarly, the correlation coefficient between Polity IV index and land Gini coefficient are 0.094 the correlation coefficient between Voice and Accountability index and land Gini coefficient are 0.057

[20]Indeed, the Hausman test shows that there is an endogeneity problem between urbanization and income inequality.

Tsiddon, 1996; Galor, Moav and Vollrath, 2004; Bourguignon and Verdier, 2000). On the other hand, a number of studies briefly points out that land inequality also adversely affect bargaining power of workers (Griffin, Khan and Ickowitz, 2002; De Janvry, 1981; Harris, 1978; Keyder, 1987, Amsden, 1989; 1990). This study's contribution is to put the bargaining aspect at the center of the analysis and to develop a more thorough model explaining the causal link between land inequality and the distribution of income among different groups of urban dwellers.

My conclusion is that if the countries had lower land inequalities, a lower share of these countries' population would have been engaged in urban subsistence activities with low productivity. This would have allowed wage-workers to earn higher wages and hence the countries would have followed a more egalitarian development path with lower poverty. The results are also supported by an empirical analysis showing that land inequality circa 1960s has significant positive impact on both more recent urban and overall income inequalities. The analysis also tests the robustness of bargaining effects by considering the education aspect. The impact of land inequality remains significant even when controlling for education Gini coefficients and power inequality/level of democracy controlled, supporting my contention that land inequality influences urban income inequality through the wage bargaining mechanism. This bargaining effect operates independently of the education mechanism.

The results suggest that policies such as progressive land reforms or/and subsidies protecting small peasantry can have a positive long-term influence on the urban income distribution. Moreover, a significant amount of work suggests that countries with egalitarian agrarian structures can experience faster accumulation of human capital (Easterly, 2007; Deininger and Squire, 1998; Griffin and Ickowitz, 1998; Voitchovsky, 2011), which would increase the rates of long-run growth, as observed in the "East Asian Miracles" that followed serious redistributive land reforms. Considering that almost the half the world's population is still living in rural areas, policies favoring the small peasantry can have lasting positive impacts; hence, more countries experiencing successful egalitarian development models can emerge. The results presented in this essay do not cover several issues, like the role of urban marginal masses or the evolving structure of the rural sector. Hence, this study leaves space for further examination of the relationship between income inequality and land inequality.

References

Acemoglu, D., Johnson, S. and Robinson, J.A. (2003), "An African Success Story: Botswana.", in (ed.) D. Rodrik, *In Search of Prosperity: Analytic Narratives on Economic Growth*, Princeton, NJ: Princeton University Press, 80-122.

Ahluwalia, M.S. (1976), "Income Distribution and Development: Some Stylized Facts", *American Economic Review*, 66

Alesina, A. and Rodrik, D. (1994), "Distributive politics and economic growth," *Quarterly Journal of Economics* 108: 465-90.

Ali, A. A. G. (2003). Globalization and inequality in the Arab region. Unpublished Paper, Arab Planning Institute, Kuwait.

Amsden, A. (1989). *Asia's Next Giant: South Korea and Late Industrialization.* New York: Oxford University Press

Amsden, A. (1990), "South Korea's Record Wage Rates: Labor in Late Industrialization", *Industrial Relations*, 29(1), 77.

Amsden, A. (2001), *The rise of "the rest": challenges to the west from late-industrializing economies*, Oxford University Press: New York

Anand S. and Kanbur, S.M.R. (1985), "Poverty under the Kuznets process", *Economic Journal* 95. Supplement, Jan., pp. 42-50.

Anand, S. and Kanbur, S.M.R.(1993), "The Kuznets process and the inequality development relationship". *Journal of Development Economics*, 40, pp. 25-52

Araghi, F. (1995). "Global de-peasantization, 1945-1990". *Sociological Quarterly*, 36(2), 337-368.

Asian Development Bank (2012), *Asian Development Outlook 2012: Confronting Rising Inequality in Asia*

Autor, D. H., Katz, L. F., and Kearney, M. S. (2008). "Trends in US wage inequality: Revising the revisionists". *The Review of Economics and Statistics*, 90(2), 300-323.

Bahrain Economic Development Board (2011), "The Current Economic Outlook: Risks of Stagnation and Weaker Global Demand"', Bahrain Economic Quarterly Third Quarter 2011

Banerjee, B. (1983), "'The Role of the Informal Sector in the Migration Process: A Test of Probabilistic Migration Models and Labour Market Segmentation for India"', *Oxford Economic Papers* 35, 399-422

Bardhan, P. (1984), *Land, Labor and Rural Poverty*, Columbia University Press: New York

Barraclough, S. L. and Domike, A. (1966), "Agrarian structure in several Latin American countries", *Land Economics*, vol. 42, No. 4.

Barro, R.J. (2000). "Inequality and Growth in a Panel of Countries." *Journal of Economic Growth*, 5, March, 5-32.

Barro, R.J. and Lee, J. W. (2010). "A new data set of educational attainment in the world, 1950-2010." N*BER Working Paper* No 15902.

Basu, S., Estrin S. and Svejnar J. (2000), "Employment and Wages in Enterprises under Communism and in Transition: Evidence from Central Europe and Russia," *The William Davidson Institute Working Papers*, No.114b

Benaabdelaali,W., Hanchane, S. and Kamal, A. (2012), "Educational Inequality in the World, 19502010: Estimates from a New Dataset", in J. A. Bishop, R. Salas (eds.) *Inequality, Mobility and Segregation: Essays in Honor of Jacques Silber (Research on Economic Inequality, Volume 20)*, Emerald Group Publishing Limited, pp.337-366

Bernstein, H. (2003). "Changing before our very eyes: agrarian questions and the politics of land in capitalism today.", *Journal of Agrarian Change*, 4(1-2), 190-225.

Berry, R. A. and Cline, W. R. (1979), *Agrarian Structure and productivity in developing countries: a study prepared for the ILO within the framework of the World Employment Programme*, The Johns Hopkins University Press, Baltimore and London.

Boratav, K. (1989), *Agrarian Structures and Capitalism (Tarımsal Yapılar ve Kapitalizm)*, Imge Yaynevi

Bourguignon, F. and Morrisson, C. (1998), "Inequality and Development: The Role of Dualism," *Journal of Development Economics* 57(2), 233-258

Bourguignon, F. and Verdier, T. (2000), "Oligarchy, democracy, inequality and growth", *Journal of Development Economics*, 62, 285-313.

Bowles, S. (1970), Migration as Investment:Empirical Tests of the Human Investment Approach to Geographic Mobility. *Review of Economics and Statistics* 2:356-362.

Bowles, S. (1978), "Capitalist development and educational structure" *World Development*, 6(6): 783-796.

Brzezinski, M. and Kostro, K. (2010). "Income and consumption inequality in Poland, 1998-2008". *Bank i Kredyt*, 41(4), 45-72.

Burke, J. and Epstein, G. (2001), Threat Effects and the Internationalization of Production. P*olitical Economy Research Institute Working Papers*, No. 15.

Carter, M. (2000), Land ownership inequality and the income distribution consequences of economic growth. *World Institute for Development Economics Research*, Working Paper 201, Helsinki.

Castells, M. and Portes, A. (1989), World Underneath: The Origins, Dynamics and Effects of the Informal Economy, in: Portes, A., Castells, M. and Benton, L.(eds.), *The Informal Economy: Studies in Advanced and Less Developed Countries*, Baltimore: The John's Hopkins University Press.

Chang, H. (2008), *Bad Samaritans: The Myth of Free Trade and the Secret History of Capitalism*, Bloomsbury Press: New York

Chang, Y. (1989), "Peasants Go To Town: The Rise ofCommerical Farming in Korea", *Human Organization*, Vol. 48, No. 3

Cole, W. E., and Sanders, R. D. (1985), "Internal Migration and Urbanization In The Third World" *American Economic Review*, 75, 481-93

Cornia, G. A. (1985), "Farm Size, Land Yields, and the Agricultural Production Function: An Analysis for Fifteen Developing Countries". *World Development* 13(4), 513-534.

Davis, K. (1955) "The Origins and Growth of Urbanization in the World", *The American Journal of Sociology*, Vol. 60 (5): 429-437

De Janvry, A. (1981), *The Agrarian Question and Reformism in Latin America.* The Johns Hopkins Studies in Development

Deininger K. and Squire L. (1996), "A New Data Set Measuring Income Inequality", *World Bank Economic Review* V. 10, No 3 Pp. 565-591

Deininger K. and Squire L. (1998), "New ways of looking at old issues: inequality and growth", *Journal of Development Economics* Vol. 57, 259-287

Dutt, A.K. (1984) "Stagnation, income distribution and monopoly power". *Cambridge Journal of Economics*, 8, pp. 25-40.

Eastwood, R. and Lipton, M. (2004). "Rural-urban dimensions of inequality change". in *Inequality, Growth and Poverty in an Era of Liberalization and Globalization*, ed. Cornia GA, UNU-WIDER Studies in Development Economics, Oxford University Press, Oxford.

El-Ghonemy, R. (1990). *The political economy of rural poverty: the case for land reform.* Routledge.

Engerman, S. L. and K.L. Sokoloff (2002), "Factor Endowments, Inequality and Paths of Development among New World Economies", *Economia*, 3:1, pp. 41-88, Fall

Engerman, S.K. and K.L. Sokoloff (2005), "Colonialism, Inequality, and Long-run Paths of Development", *NBER Working Paper*, No. 11057

Easterly, W. (2007), "Inequality does cause underdevelopment: insights from a new instrument", *Journal of Development Economics*, 84, pp. 755-76.

Fields, G. S. (1975). "Rural-Urban Migration, Urban Unemployment and Underemployment and Job Search Activity in LDCs." *Journal of Development Economics*, Vol. 2, No. 2, pp. 165-88.

Fields, G. S., (1982) "Place-to-place migration in Colombia", *Economic Development and Cultural Change* 31, 538-558 . Fields, G. S., (2005) "A Welfare Economic Analysis of Labor Market Policies in the Harris-Todaro Model", *Journal of Development Economics* 76, 127 - 146

Fajnzylber, P. and Maloney, W. (2005). "Labor Demand and Trade Reform in Latin America," *Journal of International Economics*, Vol. 66, No. 2, pp. 423-446.

Frankema, E. (2009). "The expansion of mass education in twentieth century Latin America: a global comparative perspective." *Revista de Historia Economica*, 27(3), 359.

Frankema, E. (2010), "The colonial roots of land inequality: geography, factor endowments, or institutions?", *Economic History Review*, 63, 2, pp. 418-451

Furtado, C. (1976), *Economic development of Latin America: Historical background and contemporary problems*, Cambridge University Press

Galor, O. and Tsiddon, D. (1996), "Income distribution and growth: the Kuznets hypothesis revisited." *Economica* 63:S103-117

Galor, O. and Zeira, J. (1993), "Income Distribution and Macroeconomics", *The Review of Economic Studies*, Vol. 60, no. 1, pp. 35-52

Galor, O., Moav, O. and Vollrath, D. (2004), "Land Inequality and the Origin of Divergence and Overtaking in the Growth Process: Theory and Evidence." *CEPR Discussion Paper* No. 3817

Gerry, C. (1978), "Petty production and capitalist production in Dakar: the crisis of the self employed". *World Development* 6, 1147-60

Githinji, M. w., Konstantinidis, C. and Barenberg, A. (2011), "Small and as Productive : Female Headed Households and the Inverse Relationship between Land Size and Output in Kenya", *University of Massachusetts Amherst Economics Department Working Paper* 2011-3

Goodwin, R. M. (1967) "A Growth Cycle", in C.H. Feinstein, (ed.) *Socialism, Capitalism and Economic Growth.* Cambridge: Cambridge University Press

Griffin, K., and Ickowitz, A (1998). "The Distribution of Wealth and the Pace of Development" United Nations Development Programme

Griffin, K.B., Khan, A.R. and Ickowitz, A. (2002) "Poverty and the Distribution of Land," *Journal of Agrarian Change* 2(3): 279-330

Good, K. (1993), "At the Ends of the Ladder: Radical Inequalities in Botswana", *The Journal of Modern African Studies*, Vol. 31, No. 2, pp. 203-230

Gürel, B. (2011), "Agrarian Change and Labour Supply in Turkey, 1950-1980", *Journal of Agrarian Change*, Vol. 11, No.2 , pp. 195-219

Harris, J., and Todaro, M. (1970). "Migration, Unemployment and Development: A Two-Sector Analysis", *American Economic Review*, 60(1):126-42.

Harris, R.L. (1978), "Marxism and the Agrarian Question in Latin America", *Latin American Perspectives*, 5: 2-26,

Hart, K. (1973) "Informal income opportunities and urban employment in Ghana" *Journal of Modern African Studies*, Vol. 11, No.1, pp. 61-89

Hymer, S. and Resnick, S. (1969). "A Model of an Agrarian Economy", *American Economic Review*, 59 (4), 493-506

IFAD (2001), *Rural Poverty Report 2001: the challenge of ending rural poverty.* Oxford: Oxford University Press.

IMF (2003), Cameroon: Poverty Reduction Strategy Paper, Country Report No. 03/249

Jha, S. (1996), "The Kuznets curve: a reassessment", *World Development*, 24, 4, pp. 773-. 780

Kalyan, S. (2007), *Rethinking Capitalist Development: Primitive Accumulation, Governmentality and Post Colonial Capitalism*, New Delhi: Routledge.

Kaplinsky, R. (2001) Is globalization all it is cracked up to be? *Review of International Political Economy*, 8: 45-65

Kay, C. (1989) *Latin American Theories of Development and Underdevelopment.* New York: Routledge

Kay, C. (2002), "Why East Asia Overtook Latin America: Agrarian Reform, Industrialisation and Development", *Third World Quarterly* 23, No. 6: 1073-1102

Keyder, . (1987), *State and Class in Turkey: A Study in Capitalist Development*, Verso

Keyder and Yenal Z. (2011), "Agrarian change under globalization: markets and insecurity in Turkish agriculture." *Journal of Agrarian Change* 11(1): 60-86.

Khan, A. R. (2005). "Measuring Inequality and Poverty in Bangladesh: An Assessment of the Survey Data". *The Bangladesh Development Studies*, 1-34.

Kim, J. (2011), The Dynamics of Income Inequality in Korea, The Center for Regional and Global Economic Studies at Bryant University, Working Paper 2

Köymen, O. (2008). *Capitalism and Peasantry: Agas, Producers, Bosses (Kapitalizm ve Köylülük: Ağalar, Üretenler, Patronlar).* Istanbul: Yordam Kitap

Kuznets, S. (1955), "Economic growth and income inequality", *American Economic Review*, 45, 1-28.

Lahouel, M.H. (2007), The Success of Pro-Poor Growth in Rural and Urban Tunisia. In T.Besley and L.J.Cord (eds.), *Delivering on the Promise of Pro-Poor Growth. Insights and Lessons from Countries Experiences.* Palgrave Macmillan and the World Bank, pp. 199-218.

Leibbrandt, M., Woolard, I., Finn, A. and Argent, J. (2010), "Trends in South African Income Distribution and Poverty since the Fall of Apartheid", *OECD Social, Employment and Migration Working Papers*, No. 101, OECD

Lewis, W. A. (1954), "Economic development with unlimited supplies of labour" *The Manchester School.*

Lipton, M. (1976). *Why Poor People Stay Poor: Urban Bias in World Development*, Cambridge, MA: Harvard University Press

Lucas, R.E.B. (1996), "Pollution Levies and the Demand for Industrial Labor: Panel Estimates for China's Provinces," *Institute for Economic Development Discussion Paper*, Boston University, June.

Marglin, S. and Bhaduri, A. (1990) Profit Squeeze and Keynesian Theory." In: S. Marglin and J. Schor (eds). T*he Golden Age of Capitalism - Reinterpreting the Postwar Experience.* Oxford: Clarendon.

Marshall M.G. and Cole, B. R. (2011), Global Report 2011: Conflict, Governance, and State Fragility, Center for Systematic

Marx, K. (1867). *Capital: A Critique of Political Economy: Volume 1 - The Production Process of Capital*, New York: International Publishers, 1967.

Martin, P. (2009): A Closer Look at Botswana's Development: The Role of Institutions, Paterson Review Vol. 9, Ottawa

Mazumdar, D. (1976), "The urban informal sector." *World Development* 4(8), 655-679.

Mbaku, J. M. (1997). "Inequality in Income Distribution and Economic Development: Evidence Using Alternative Measures of Development". *Journal of Economic Development*, 22(2), 57-67.

Min, H. (2007), "Estimation of Labor Demand Elasticity. For the RMSM-LP: Revised Minimum Standard Model For Labor And. Poverty Model", *International Business Economics Research*

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Muller, E. N., and Seligson, M. A. (1987). "'Inequality and insurgency"'. *The American Political Science Review*, 425-451

Nattrass, N. J. (1987). "Street Trading in Transkei: A Struggle Against Poverty, Persecution, and Prosecution", *World Development*, Vol.15, No. 7

Nun, J. (2000). "The End of Work and the "Marginal Mass" Thesis". *Latin American Perspectives*, 27(1): 6-32

Onaran, Ö. (2009), "Wage share, globalization and crisis:the case of the manufacturing industry in Korea, Mexico and Turkey". *International Review of Applied Economics*, 23: 113-134.

Önal, N. E. (2010), *150 years of Agriculture in Anatolia (Anadolu Tariminin 150 Yillik Öyküsü)*, Yazilama Yayinevi

Özler, B. (2007), "Not Separate, Not Equal: Poverty and Inequality in Post-apartheid South Africa", *Economic Development and Cultural Change*, Vol. 55, No. 3, pp. 487-529

Patnaik, P. (2008), *The Value of Money*, Tulika Books

Pedersen, J. and Lockwood, K. (2001), Determination of a Poverty Line for Haiti. FAFO

Pissarides C. A., and McMaster, I. (1990), "Regional Migration, Wages and Unemployment: Empirical Evidence and Implications for Policy", *Oxford Economic Papers*, New Series, Vol. 42, No. 4, pp. 812-831

Pollin, R. (2002), Globalization and the Transition to Egalitarian Development. Amherst, MA: *Political Economy Research Institute Working Papers*, 42.

Ranis, G. and Fei, J.C.H. (1961), "A Theory of Economic Development," *American Economic Review*, Vol. 51, pp. 533-565.

Rao, J. M. (1998), Development in a Time of Globalization. Amherst, MA: *Political Economy Research Institute Working Papers*, No. 1.

Rauch, J. E. (1993). "Economic Development, Urban Underemployment, and Income Inequality", *Canadian Journal of Economics*, vol. 26(4), pages 901-18

Ray, D. (1998), *Economic Development*, Princeton University Press

Rudra, N. (2008), *Globalization and the Race to the Bottom in Developing Countries: Who Really Gets Hurt?* Cambridge University Press.

Salehi-Isfahani, D. (2009). "Poverty, inequality, and populist politics in Iran." *Journal of Economic Inequality*, 7(1), 5-28.

Schneider, F., Buehn, A., and Montenegro, C. E. (2010), "New Estimates for the Shadow Economies all over the World" *International Economic Journal*, Vol 24. No 4, 443-461

Schultz, T.P., (1982),"Lifetime migration within educational strata in Venezuela: Estimates of a logistic model", *Economic Development and Cultural Change* 31, 559-593.

Seligson, M. A. and Muller, E. N. (1987), "Inequality and Insurgency", *The American Political Science Review*, Vol. 81, No. 2 , pp. 425-452

Shapiro, C. and Stiglitz, J. E., (1984). "Equilibrium unemployment as a worker discipline device", *American Economic Review*, vol. 74(3), pp. 433 - 444.

Sharma, K. (2006). "The political economy of civil war in Nepal". *World Development*, 34(7), 1237-1253.

Skott, P. (1989), "Effective Demand, Class Struggle and Cyclical Growth", *International Economic Review*, Vol. 30, No. 1, pp. 231-247

Skott, P. and Larudee, M. (1998), "Uneven Development and the Liberalization of Trade and Capital Flows", *Cambridge Journal of Economics*, 277-295.

Stolper, W. F. and Samuelson, P. A. (1941) Protection and real wages. *Review of Economic Studies*, 9: 58-73

Taylor, C. L. and Jodice, D. A. (1985). W*orld Handbook of Political and Social Indicators III: 1948-1982 (Vol. 2)*. Inter-university Consortium for Political and Social Research.

Thiesenhusen, W. C., and Melmed-Sanjak J. (1990), "Brazil's Agrarian Structure: Changes from 1970 through 1980", *World Development*, 18 : 393-415

Thomas, V., Wang, Y., and Fan, X. (2001). *Measuring education inequality: Gini coefficients of education* (Vol. 2525). World Bank Publications.

Todaro, M. and Smith, S. C. (2009), *Economic Development*, Pearson: Addison Wesley

Turkstat (2011), Income and Living Conditions Survey 2010, Press Release No: 8661

UN-HABITAT (2010a). *State of the World's Cities 2010/2011: Bridging the Urban Divide*. Earthscan

UN-HABITAT (2010b). *State of African Cities 2010, governance, inequalities and urban land markets*. Nairobi: UNEP

UNU-WIDER (2008), *World Income Inequality Database*, Version 2.0c

Ünal, G. (2012), *Land Ownership Inequality and Rural Factor Markets in Turkey: A Study for Critically Evaluating Market Friendly Reforms (Economics of the Middle East)*, Palgrave MacMillan

Voitchovsky, S. (2011), "Inequality, growth and sectoral change", in W. Salverda, B. T. Nolan and T. M. Smeeding (eds.), *Oxford Handbook of Economic Inequality*,, Oxford University Press

Vollrath, D. (2007), "Land Distribution and International Agricultural Productivity," *American Journal of Agricultural Economics*, 2007, 89(1), pp. 202-216.

Wegenast, T. (2009). "The Legacy of Landlords: Educational Distribution and Development in a Comparative Perspective",*Zeitschrift fr vergleichende Politikwissenschaft*, 3(1), 81-107.

Williams, G. and Tumusiime-Mutebile, E. (1978), "Capitalist and Petty Commodity Production in Nigeria: A Note", *World Development*. Volume 6 No. 9-10. November-December. pp. 1103-1104.

Williamson, J. (1988). Migration and Urbanisation. in H. Chenery, H. T. Srinivasan. (Eds.), *Handbook of Development Economics Vol 1*, Amsterdam: Elsevier Science Publishers

World Bank (2008), *World Development Indicators*, World Bank.

World Bank (2011),*PovcalNet*, PovcalNet Online Poverty Analysis Tool.

World Bank (2012), *World Development Indicators*, World Bank.

Appendix - 1: The datasets on urban and overall income/expenditure Gini coefficients and land Gini coefficient

Table - A1: Urban Gini Coefficients

	Year	Urban Gini	Source	E/I
Algeria	1995	0.350	UN-HABITAT(2010a)	0
Argentina	2010	0.449	PovcalNet(2012)	0
Austria				0
Australia				0
Bahrain				0
Bangladesh	2005	0.347	Khan (2005)	1
Belgium				0
Bolivia	2007	0.499	CEPAL(2011)	0
Botswana	2001/02	0.500	UN-HABITAT(2010a)	0
Brazil	2009	0.569	CEPAL(2011)	0
Cameroon	2001	0.406	IMF(2003)	0
Canada				0
Central African Republic	2003	0.420	UN-HABITAT(2010a)	1
Chad				0
Chile	2009	0.524	CEPAL(2011)	0
China	2008	0.355	PovcalNet(2012)	1
Colombia	2009	0.555	CEPAL(2011)	0
Congo, Dem. Rep.	2004/05	0.400	UN-HABITAT(2010a)	1
Congo, Rep.				0
Costa Rica	2009	0.494	CEPAL(2011)	0
Cote d'Ivoire	2008	0.440	UN-HABITAT(2010a)	1
Denmark				0
Dominican Republic	2009	0.585	CEPAL(2011)	0
Ecuador	2009	0.485	CEPAL(2011)	0
Egypt, Arab Rep.				0
El Salvador				0
Ethiopia	2004/05	0.440	UN-HABITAT(2010a)	1
Finland				0
France				0
Gabon				0
Germany				0
Ghana	1998	0.600	UN-HABITAT(2010b)	0
Greece				0
Guatemala	2006	0.547	CEPAL(2011)	0
Guinea-Bissau				0
Haiti	2000	0.574	Pedersen and Lockwood (2001)	1
Honduras	2009	0.469	CEPAL(2011)	0
India	2009/10	0.393	PovcalNet(2012)	1

Note: 1 stands for expenditure and 0 for income Gini coefficient.

Table - A1(cont.): Urban Gini Coefficients

	Year	Urban Gini	Source	E/I
Indonesia	2011	0.422	PovcalNet(2012)	1
Iran, Islamic Rep.	2004	0.4	Salehi-Isfahani(2009)	1
Iraq				0
Ireland				0
Israel				0
Italy				0
Jamaica				0
Japan				0
Jordan	1992	0.435	UNU-Wider(2008)	1
Kenya	2006	0.450	UN-HABITAT(2010a)	1
Korea, Rep.				0
Kuwait				0
Lebanon				0
Lesotho	1991	0.580	Eastwood and Lipton (2004)	0
Liberia				0
Madagascar				0
Malawi	1998	0.520	UN-HABITAT(2010a)	1
Malaysia	1999	0.420	UN-HABITAT(2010a)	0
Mali				0
Mexico	2008	0.487	CEPAL(2011)	0
Morocco	1998	0.380	UN-HABITAT(2010a)	1
Mozambique	2002/03	0.480	UN-HABITAT(2010a)	1
Nepal	2003/04	0.440	Sharma (2010)	0
Netherlands				0
New Zealand				0
Nicaragua	2005	0.500	CEPAL(2011)	0
Niger				0
Nigeria	2006	0.580	UN-HABITAT(2010a)	0
Norway				0
Pakistan	2004	0.340	UN-HABITAT(2010a)	1
Panama	2009	0.475	CEPAL(2011)	0
Paraguay	2007	0.480	UN-HABITAT(2010a)	0
Peru	2009	0.422	CEPAL(2011)	0
Philippines	2003	0.450	UN-HABITAT(2010a)	0
Poland	2008	0.300	Brzezinski and Kostro (2010)	0
Portugal				0
Puerto Rico				0
Saudi Arabia				0
Senegal	2001/02	0.380	UN-HABITAT(2010b)	1
Sierra Leone	2002	0.390	UN-HABITAT(2010b)	1
South Africa	2008	0.670	Leibbrandt et. al.(2010)	0
Spain				0
Sri Lanka	2006/07	0.550	UN-HABITAT(2010a)	0

Note: 1 stands for expenditure and 0 for income Gini coefficient.

Table - A1(cont.): Urban Gini Coefficients

	Year	Urban Gini	Source	E/I
Sudan				0
Swaziland				0
Sweden				0
Switzerland				0
Syrian Arab Republic				0
Tanzania	1993	0.420	Eastwood and Lipton (2004)	1
Thailand	1986	0.460	Eastwood and Lipton (2004)	0
Togo	2006	0.310	UN-HABITAT(2010a)	1
Trinidad and Tobago	1992	0.514	UNU-Wider(2008)	0
Tunisia	2000	0.391	Lahouel (2007)	0
Turkey	2010	0.389	Turkstat (2011)	0
Uganda	2005/06	0.430	UN-HABITAT(2010a)	0
United Kingdom				0
United States				0
Uruguay	2009	0.433	CEPAL(2011)	0
Venezuela, RB	1997	0.496	UNU-Wider(2008)	0
Vietnam	2002	0.420	UN-HABITAT(2010a)	0
Zambia	2006	0.660	UN-HABITAT(2010a)	0

Note: 1 stands for expenditure and 0 for income Gini coefficient.

Table - A2: Overall Gini Coefficients

	Year	Overall Gini	Source	E/I
Algeria	1995	0.353	PovcalNet(2012)	1
Argentina	2010	0.449	PovcalNet(2012)	0
Austria	2010	0.261	Eurostat(2012)	0
Australia	2008	0.336	OECD(2011)	0
Bahrain	2006	0.390	Bahrain EDB(2011)	0
Bangladesh	2010	0.321	PovcalNet(2012)	1
Belgium	2010	0.266	Eurostat(2012)	0
Bolivia	2007	0.565	CEPAL(2011)	0
Botswana	2006	0.600	Martin(2009)	0
Brazil	2009	0.576	CEPAL(2011)	0
Cameroon	2007	0.389	PovcalNet(2012)	1
Canada	2008	0.328	OECD(2011)	0
Central African Republic	2008	0.563	PovcalNet(2012)	1
Chad	2005	0.350	World Bank(2008)	0
Chile	2009	0.524	CEPAL(2011)	0
China	2006	0.434	Asian Development Bank (2012)	1
Colombia	2010	0.578	CEPAL(2011)	0
Congo, Dem. Rep.	2005/06	0.444	PovcalNet(2012)	1
Congo, Rep.	2005	0.473	PovcalNet(2012)	1
Costa Rica	2010	0.492	CEPAL(2011)	0
Cote d'Ivoire	2008	0.415	PovcalNet(2012)	1
Denmark	2010	0.269	Eurostat(2012)	0
Dominican Republic	2010	0.554	CEPAL(2011)	0
Ecuador	2010	0.495	CEPAL(2011)	0
Egypt, Arab Rep.	2008	0.307	PovcalNet(2012)	1
El Salvador	2010	0.454	CEPAL(2011)	0
Ethiopia	2005	0.295	World Bank(2011)	0
Finland	2010	0.254	Eurostat(2012)	0
France	2011	0.299	Eurostat(2012)	0
Gabon	2005	0.415	PovcalNet(2012)	1
Germany	2010	0.293	Eurostat(2012)	0
Ghana	2005/06	0.428	PovcalNet(2012)	1
Greece	2010	0.329	Eurostat(2012)	0
Guatemala	2006	0.585	CEPAL(2011)	0
Guinea-Bissau	2002	0.355	PovcalNet(2012)	1
Haiti	2001	0.592	PovcalNet(2012)	0
Honduras	2010	0.567	CEPAL(2011)	0
India	2010	0.370	Asian Development Bank (2012)	1
Indonesia	2011	0.389	Asian Development Bank (2012)	1
Iran, Islamic Rep.	2005	0.383	PovcalNet(2012)	1
Iraq	2006	0.309	PovcalNet(2012)	1
Ireland	2010	0.332	Eurostat(2012)	0
Israel	2001	0.372	UNU-Wider(2008)	0

Note: 1 stands for expenditure and 0 for income Gini coefficient.

Table - A2: Overall Gini Coefficients (cont.)

	Year	Overall Gini	Source	E/I
Italy	2010	0.312	Eurostat(2012)	0
Jamaica	2004	0.455	UNU-Wider(2008)	1
Japan	2006	0.329	OECD(2011)	0
Jordan	2010	0.354	PovcalNet(2012)	1
Kenya	2005	0.477	PovcalNet(2012)	1
Korea, Rep.	2010	0.310	Kim (2011)	0
Kuwait	1999	0.360	Ali (2003)	1
Lebanon	2004	0.360	Bibi and Nabli (2010)	1
Lesotho	2002	0.520	PovcalNet(2012)	1
Liberia	2007	0.382	PovcalNet(2012)	1
Madagascar	2010	0.441	PovcalNet(2012)	1
Malawi	2004	0.390	PovcalNet(2012)	1
Malaysia	2009	0.462	PovcalNet(2012)	0
Mali	2010	0.330	PovcalNet(2012)	1
Mexico	2010	0.481	CEPAL(2011)	0
Morocco	2007	0.409	PovcalNet(2012)	1
Mozambique	2007	0.457	PovcalNet(2012)	1
Nepal	2010	0.328	PovcalNet(2012)	1
Netherlands	2010	0.255	Eurostat(2012)	0
New Zealand	2001	0.335	UNU-Wider (2008)	0
Nicaragua	2005	0.532	CEPAL(2011)	0
Niger	2007	0.335	PovcalNet(2012)	1
Nigeria	2009	0.488	PovcalNet(2012)	1
Norway	2010	0.236	Eurostat(2012)	0
Pakistan	2007	0.300	PovcalNet(2012)	1
Panama	2010	0.519	CEPAL(2011)	0
Paraguay	2010	0.533	CEPAL(2011)	0
Peru	2010	0.458	CEPAL(2011)	0
Philippines	2009	0.430	PovcalNet(2012)	1
Poland	2010	0.311	Eurostat(2012)	0
Portugal	2010	0.337	Eurostat(2012)	0
Puerto Rico	2003	0.529	UNU-Wider(2008)	0
Saudi Arabia	2006	0.397	World Bank(2011)	0
Senegal	2005	0.392	PovcalNet(2012)	1
Sierra Leone	2003	0.425	PovcalNet(2012)	1
South Africa	2008	0.700	Leibbrandt et. al.(2010)	0
Spain	2010	0.339	Eurostat(2012)	0
Sri Lanka	2006	0.403	PovcalNet(2012)	1
Sudan	2009	0.353	PovcalNet(2012)	1
Swaziland	2009	0.515	PovcalNet(2012)	1
Sweden	2010	0.241	Eurostat(2012)	0
Switzerland	2010	0.295	Eurostat(2012)	0
Syrian Arab Republic	2004	0.374	PovcalNet(2012)	1

Note: 1 stands for expenditure and 0 for income Gini coefficient.

Table - A2: Overall Gini Coefficients (cont.)

	Year	Overall Gini	Source	E/I
Tanzania	2007	0.376	PovcalNet(2012)	1
Thailand	2009	0.400	PovcalNet(2012)	1
Togo	2006	0.344	PovcalNet(2012)	0
Trinidad and Tobago	1992	0.403	PovcalNet(2012)	0
Tunisia	2005	0.414	PovcalNet(2012)	1
Turkey	2010	0.402	Turkstat (2011)	0
Uganda	2009	0.443	WB(2011)	0
United Kingdom	2010	0.330	Eurostat(2012)	0
United States	2008	0.378	OECD(2011)	0
Uruguay	2010	0.422	CEPAL(2011)	0
Venezuela, RB	2010	0.394	CEPAL(2011)	0
Vietnam	2008	0.354	PovcalNet(2012)	1
Zambia	2006	0.546	PovcalNet(2012)	1

Note: 1 stands for expenditure and 0 for income Gini coefficient.

Table - A3: Land Gini Coefficients

	Year	Land Gini	Source
Algeria	1973	0.650	Muller and Seligson(1987)
Argentina	1960	0.740	Frankema (2010)
Austria	1960	0.671	Frankema (2010)
Australia	1960	0.820	Frankema (2010)
Bahrain	1970	0.521	Taylor and Jodice(1983)
Bangladesh	1961	0.418	Frankema (2010)
Belgium	1959	0.600	Frankema (2010)
Bolivia	1960	0.768	Frankema (2010)
Botswana	1969	0.459	Frankema (2010)
Brazil	1960	0.835	Deininger and Squire (1998)
Cameroon	1972	0.407	Frankema (2010)
Canada	1961	0.526	Frankema (2010)
Central African Republic	1974	0.336	Frankema (2010)
Chad	1973	0.340	Muller and Selingson(1987)
Chile	1965	0.865	Frankema (2010)
China	1960/61	0.474	Berry and Cline(1979)
Colombia	1960	0.860	Deininger and Squire (1998)
Congo, Dem. Rep.	1970	0.592	Deininger and Squire (1998)
Congo, Rep.	1973	0.270	Muller and Seligson(1987)
Costa Rica	1963	0.739	Frankema (2010)
Cote d'Ivoire	1974	0.415	Frankema (2010)
Denmark	1959	0.442	Frankema (2010)
Dominican Republic	1960	0.745	Frankema (2010)
Ecuador	1954	0.804	Frankema (2010)
Egypt, Arab Rep.	1961	0.633	Frankema (2010)
El Salvador	1960	0.783	Frankema (2010)
Ethiopia	1977	0.424	Frankema (2010)
Finland	1959	0.338	Frankema (2010)
France	1963	0.502	Frankema (2010)
Gabon	1975	0.410	Muller and Seligson(1987)
Germany	1960 (FRG)	0.524	Frankema (2010)
Ghana	1970	0.530	Frankema (2010)
Greece	1961	0.597	Berry and Cline(1979)
Guatemala	1964	0.770	Frankema (2010)
Guinea-Bissau	1960/61	0.397	Author's calculations
Haiti	1971	0.462	Frankema (2010)
Honduras	1952	0.706	Frankema (2010)
India	1960	0.583	Deininger and Squire (1998)
Indonesia	1963	0.527	Frankema (2010)
Iran, Islamic Rep.	1960	0.623	Frankema (2010)
Iraq	1958	0.820	Frankema (2010)
Ireland	1960	0.575	Frankema (2010)
Israel	1970	0.698	Frankema (2010)

Table - A3: Land Gini Coefficients (cont.)

	Year	Land Gini	Source
Italy	1960	0.620	Frankema (2010)
Jamaica	1961	0.757	Frankema (2010)
Japan	1960	0.411	Deininger and Squire (1998)
Jordan	1983	0.643	Frankema (2010)
Kenya	1960	0.762	Frankema (2010)
Korea, Rep.	1961	0.354	IFAD(2001)
Kuwait	1970	0.725	Frankema (2010)
Lebanon	1970	0.770	Muller and Selingson(1987)
Lesotho	1960	0.381	Frankema (2010)
Liberia	1971	0.681	Frankema (2010)
Madagascar	1961	0.804	Frankema (2010)
Malawi	1969	0.340	Muller and Selingson(1987)
Malaysia	1960	0.680	Frankema (2010)
Mali	1960	0.451	Frankema (2010)
Mexico	1960	0.607	Frankema (2010)
Morocco	1962	0.577	Frankema (2010)
Mozambique	1970	0.705	Author's calculations
Nepal	1961	0.570	El-Ghonemy(1990)
Netherlands	1959	0.557	Frankema (2010)
New Zealand	1960	0.696	Frankema (2010)
Nicaragua	1963	0.759	Frankema (2010)
Niger	1960	0.468	Author's calculations
Nigeria	1973	0.370	Griffin Khan Ickowitz(2002)
Norway	1959	0.362	Frankema (2010)
Pakistan	1960	0.596	Deininger and Squire (1998)
Panama	1960	0.699	Frankema (2010)
Paraguay	1961	0.863	Frankema (2010)
Peru	1961	0.854	Frankema (2010)
Philippines	1960	0.508	Deininger and Squire (1998)
Poland	1960	0.511	Frankema (2010)
Portugal	1968	0.756	Frankema (2010)
Puerto Rico	1959	0.707	Frankema (2010)
Saudi Arabia	1974	0.780	Muller and Selingson(1987)
Senegal	1960	0.467	Frankema (2010)
Sierra Leone	1970	0.436	Frankema (2010)
South Africa	1960	0.643	Frankema (2010)
Spain	1960	0.791	Frankema (2010)
Sri Lanka	1961	0.627	Frankema (2010)
Sudan	1965	0.577	Deininger and Squire (1998)
Swaziland	1971	0.835	Frankema (2010)
Sweden	1961	0.488	Frankema (2010)
Switzerland	1969	0.504	Frankema (2010)
Syrian Arab Republic	1971	0.643	Frankema (2010)

Table - A3: Land Gini Coefficients (cont.)

	Year	Land Gini	Source
Tanzania	1960	0.790	Frankema (2010)
Thailand	1963	0.444	Frankema (2010)
Togo	1961	0.452	Frankema (2010)
Trinidad and Tobago	1963	0.691	Frankema (2010)
Tunisia	1961	0.616	Frankema (2010)
Turkey	1960	0.608	Frankema (2010)
Uganda	1963	0.481	Frankema (2010)
United Kingdom	1960	0.687	Frankema (2010)
United States	1959	0.677	Frankema (2010)
Uruguay	1960	0.791	Frankema (2010)
Venezuela, RB	1961	0.924	Deininger and Squire (1998)
Vietnam	1960	0.562	Frankema (2010)
Zambia	1971	0.699	Frankema (2010)