INCOME INEQUALITY AND ECONOMIC GROWTH: HOW MUCH DO WE KNOW ABOUT THE RELATIONSHIP AFTER MORE THAN FIVE DECADES OF RESEARCH?

By

Zeeshan Humayun

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Abstract

Ever since Kuznets influential contribution in understanding the relationship between income inequality and economic growth, a vast number of researchers have investigated this relationship. This dissertation looks to answer three questions: (1) after more than fifty years of research in this area, what do we actually know about the relationship between income inequality and economic growth? (2) What were the obstacles facing the researchers examining this subject and how did it affect their conclusions? (3) Given the recent political events around the world, is this still a valid question? All of the questions mentioned above are vital because income inequality and economic growth are key economic issues for any government; growth is considered one of the main targets for any government, and reducing income inequality is not only important in itself but is becoming more crucial given its effect on political stability, which itself affects growth. Therefore, this dissertation extensively examines the existing literature to pinpoint what we know about the relationship. This dissertation uses a Meta-analysis technique to carry out an in-depth analysis of the literature followed by a critical analysis. The analysis shows that there is no concrete consensus amongst the researchers as three completely different results have been obtained regarding the relationship between inequality and growth; inequality is good for growth, bad for growth, and many have obtained mixed results. This dissertation looks at various factors that might have led to these different results and provides ideas for future studies such as data problems, the need for the distinction between growth and development and inequality and social and political instability. The recent political events in the world have brought us to an interesting question regarding the importance and validity of our third question. Our analysis shows that although the question is valid, a minor alteration in the question makes all the difference.
1. Introduction

It is often the case that the easiest and the oldest questions in economics are the ones that remained unanswered. The relationship between income inequality and economic growth has been a subject of study for more than 50 years. It all started with the influential work of Simon Kuznets in 1955. Kuznets (1955) hypothesised that income inequality is expected to firstly increase with growth and later decrease as the economy reaches a certain point. Kuznets is discussed in greater detail later on through the study. Ever since Kuznets’ influential work, many researchers have dwelled into the field to figure out the relationship between income inequality and growth. Researchers have conducted both empirical and theoretical studies over the last five decades, and all the possible results have been obtained.

The purpose of this study is to examine income inequality and economic growth through discussing the existing literature and critically analysing it. The fact that completely different results have been obtained encourages an in-depth analysis of the existing literature, in order to clearly understand how much we know about the subject today. The dissertation looks to answer three questions that will better help understand the relationship and clearly highlight any problems with the literature. (1) How much do we know about the relationship between income inequality and economic growth? (2) What are the obstacles facing the researchers in reaching a unanimous result? (3) What were the key problems in the previous studies? These three questions are very important because both income inequality and economic growth are key issues for any government and its policy makers. Economic growth has always been considered as one of the key targets for a government however, income inequality has become a major threat to the political, economic and social stability recently. The relationship between income inequality and economic growth is critical for a government because if inequality is good for growth, the policy implications are different to if inequality is bad for growth. All of these points clearly point out the importance of the above mentioned questions. In order to clearly analyse the existing literature, Meta analysis technique is used. This methodology is efficient because it will help cover ample literature and provide a clear analysis of the literature. Since income inequality and
economic growth are important for any economy, ample literature exists and an in-depth study of the literature is an excellent way to understand the current consensus regarding the relationship between income inequality and economic growth.

This dissertation is composed of four chapters; this being chapter 1. Chapter 2 utilises a plethora of studies that investigate the relationship between income inequality and economic growth to provide an in-depth descriptive literature review. Chapter 3 will then provide the critical analysis of the literature by shedding light on some of the factors that could have been crucial in producing the conflicting results obtained by various authors. Chapter 4 will then present the main findings, discuss some policy implications and highlight areas of further research.
2. Literature Review

Simon Kuznets (1955) was the first person to study the relationship between income inequality and economic growth and thus can be identified as the pioneer of this area of research. Kuznets looked to answer two questions; (1) does inequality in income distribution increase or decrease over the course of a country’s economic growth? (2) What factors determine the secular levels and trends of income inequalities? He claimed that inequality would increase in the initial stages of growth before declining in the later stages as the countries became more advanced. Kuznets referred to two forces that make for increasing inequality in the initial stages of growth. Firstly, the concentration of savings (which is regarded as crucial to growth) is in the upper-income bracket of the population i.e. there is a high level of inequality in savings as only upper-income brackets are able to save. He claimed that inequality in savings would lead to the concentration of income-yielding assets in the hand of the upper-income bracket, which will be beneficial only for them and their descendents. Kuznets presented his idea by referring to the already developed nations and the fact that these countries grew rapidly by saving. Most of these countries experienced an initial rise in income inequality, which later decreased once the countries were developed. Secondly, income inequality is likely to rise during the process of growth due to the industrial structure of income distribution. This refers to the shift from the agriculture sector to the industrial sector. He explained that little is known of these structures but claimed two points; firstly, average per capita income of the rural population is usually lower in comparison to the urban population. Lastly, inequality in the percentage shares within the distribution of rural income is narrower than that of the urban area. Kuznets speculated that the difference between per capita income in the urban and rural areas does not necessarily decrease during the growth process. He claimed that it is stable at best but this tends to widen because per capita productivity in urban areas, relative to agriculture areas, increases more rapidly, which in turn causes inequality in the total income distribution to increase. This widens the inequality gap and leads to an increase in income inequality. Kuznets argued that income inequality would therefore, increase in the early stages of growth as the urban populations grew. However, inequality would start to
decrease after a certain level of income is obtained as the process of industrialization would eventually increase income levels.

Today, this notion is referred to as the Kuznets Hypothesis. The Kuznets Curve is the graphical representation of the Kuznets Hypothesis, often referred to as the inverted U-shape curve, which shows inequality on the vertical axis and economic growth on the horizontal axis. As a country starts to grow economically, income inequality starts to increase until reaching a certain “turning point” and decreases in the later stages of economic growth.

Kuznets' main objective was to identify the relationship between income inequality and economic growth. This is a critical statement because he was only interested in the relationship, and not the causality. In other words, Kuznets did not try to identify whether inequality causes growth or vice versa. Over the years, researchers have looked at inequality and growth from both directions; relationship wise and causality. Kuznets looked to identify the relationship between inequality and growth only, and not inequality and development. Many researchers after him have tried to observe inequality and development using Kuznets hypothesis. It must be clearly understood, that Kuznets only observed inequality and growth. Growth and development are discussed in later detail in chapter 3.

Another point worth mentioning here is that Kuznets hypothesized his idea with very little empirical support. This might be due to the lack of data available or its poor quality as Kuznets himself declared that the subject of economic growth and income inequality is filled with looseness and inadequate amount of data. According to Kuznets, his paper was mostly speculation:

“The paper is perhaps 5 per cent empirical information and 95 per cent speculation”

(Kuznets, 1955; p26)
Ever since Kuznets Hypothesis, many researchers have tried to examine the relationship between income inequality and economic growth. Moran (2005) asserted that Kuznets inverted U-curve hypothesis was the most influential statement ever made on inequality and development. Many researchers have written in favour of inequality being beneficial to growth, whilst others have written against this view, and still others have even found mixed results. Therefore, it is better to categorize the literature accordingly. The coming part will thus present the literature in favour of inequality being beneficial to growth, followed by the literature against inequality being beneficial to growth and finally the mixed results.

2.1 In Favour of Inequality being Beneficial to Growth

Robinson (1976) is highly regarded for continuing Kuznets’ work as he was one of the early advocates of the Kuznets Hypothesis and he extended Kuznets findings. Robinson tried to explain how the inverted U-shape curve can be obtained using a very simple two-sector model with minimal economic assumptions. He assumed that an economy can be divided into two sectors where each sector has different income distributions. He also assumed a monotonic increase in the comparative population of one of the two sectors as an economy grew. According to Robinson, this assumption seemed empirically unexceptional for a country undergoing economic development and is consistent with many models of development. He used log mean and log variance of income in the two sectors to evaluate the income differences. The author tried to show that if the two-sector models are valid, then one should expect a developing country to be subject to either increasing or unchanged inequality for a substantial period, given the absence of countervailing policies.

Ahluwalia (1976a) looked at inequality, poverty and development. He obtained the GNP per capita for a sample of 60 countries (40 undeveloped countries, 14 developed and 6 socialist countries). Ahluwalia used the multivariate regression analysis, in order to estimate the cross-country relationship between the income shares of various percentile groups and certain variables reflecting aspects of the development process that might
influence income inequality. He obtained an inverted U-shape and the turning point occurred at different levels for GNP.

Ahluwalia’s (1976b) paper is different to the previous paper as it re-examined the empirical foundation for Kuznets’ hypothesis, using a set of cross-country data, with no reference to poverty. He used more observations in comparison to the previous paper, 62 instead of 60. The income distribution data consisted of 62 countries (14 of which were developed, 42 undeveloped and 6 socialist countries). The author’s results generated a U-shape curve and confirmed a statistically significant relationship between the income shares of various percentile groups and the log of per capita GNP. However, the results failed to produce any relationship between the level of inequality and the rate of economic growth.

Anand and Kanbur (1993) are often referred to for formalizing the properties of the Kuznets hypothesis. They used the two-sector model through dividing the economy into two sectors; modern and agriculture. As mentioned above, Robinson (1976) used only the variance of log of income as his index for inequality. Anand and Kanbur tried to use the two-sector model to estimate the inequality-development relationship for alternative indices of inequality. The data was the same as Ahluwalia (1976a) with 60 countries. They also derived the functional forms of a turning point in the inequality development relationship. However, the authors stated that the U-shape is significant for some functional forms but not for all. In short, Anand and Kanbur have been very beneficial proponents of the work of Kuznets as they helped to formalize Kuznets’ findings using more indices.

Galor and Tsidden (1996) used a general equilibrium model to try to evaluate the relationship between income distribution and growth. They used an overlapping-generations model that operates in a perfectly competitive world. Their model suggested that in early stages of development, increase in the level of investment in human capital may not be possible unless distribution of human capital itself is unequal. In other words, inequality might be necessary in order to increase the amount of investment in human capital and output. The authors were in agreement with the Kuznets hypothesis because the model showed that:
“Growth is accompanied in the early stages of development by a widening wage differential between skilled and unskilled labour”

(Galor and Tsiddon, 1996, p. 1)

Jha (1996) reassessed the Kuznets curve where the main focus of his study was to show the relationship between equity and growth in three ways; firstly running a pooled regression by using the extended data set (185 observations from 76 countries) obtained from the World Bank, secondly, establish the scale of the data comparability problem during the pooled regressions, and finally, identify the robustness of the development variables’ coefficient (especially education), regarding their statistical significance. The proxies used for income distribution are the share of the total income accumulating to the poorest 20%, poorest 40% and the richest 20%. Jha claimed that although data comparability does exist due to geographic coverage, income recipient etc, this problem will not highly affect the results. The author was able to establish that there is an obvious trade-off between growth and equity and that there is a serious data comparability problem. Education was used as a development variable and it inclusion showed that education improves the overall level of income distribution implying that more recently, the benefits of schooling has started to reach the poor.

Partridge (1997) employed data from a panel of US states to investigate the relationship between income inequality and economic growth. He specifically addressed Persson and Tabellini (1994) as he tried to prove that their findings were not convincing. Persson and Tabellini (1994) discussed the relationship between income inequality and growth from a political point of view. Using a median-voter model, they obtained a negative relationship between income and economic growth. Partridge used a similar model as Persson and Tabellini (1994), where the ten-year growth in real per-capita income is the independent variable. The data comprised of 48 US states for the period 1960-90, a total of 144 observations. The GINI coefficient was employed as the measure of inequality. His

1 Persson and Tabellini (1994) are discussed in greater detail in the next sub-section.
results showed that states with higher inequality were able to grow at higher rates of
growth. Partridge argued that his findings might be different to that of Persson and Tabellini
(1994) because their model might only be applicable to country level and not state level.

Mbaku (1997) used alternative measures of development other than per capita
income (Human Development Index and Physical Quality of Life) to observe the
relationship between income distribution and economic development. He argued that in the
past, researchers generally employed the GNP per capita as their measure for
development, which was inappropriate as it does not capture the real qualitative
development. Therefore, the author wished to use the measures mentioned above in order
to capture real development. Mbaku considered the specification where the measure of
income inequality is related to the level of per capita income and its squared value, i.e. this
is the model employed. A total of 58 countries were included in the dataset. The results
obtained in this study confirmed the inverted-U hypothesis (Kuznets Hypothesis) for
economic development when the GINI coefficient, income share of the top quintile and the
ratio of top quintile to the bottom quintile are used as dependent variables.

Forbes (2000) wanted to challenge the notion that inequality has a negative impact
on growth, a notion which started to be common amongst researchers since the early
1990s. Forbes used the panel technique [using a model similar to Perotti (1996) to observe
the relationship between inequality and economic growth within 45 countries, where
inequality is measured by the GINI coefficient. Growth is estimated as a function of initial
inequality, income, male and female human capital, market distortions, and country and
period dummy variables. Perotti (1996) observed the relationship between income
distribution and growth through three main issues: (1)the properties, usage and reliability of
the data, (2)the robustness of the reduced form inequality-growth relationship, estimated
so far, and (3) the specific channels through which income distribution affects growth\(^2\). Forbin (2000) tried to identify whether the length of the period affects inequality and
growth. The author’s results showed that in the short and medium term, an increase in

\(^2\)Perotti (1996) is discussed in greater detail in the next sub-section.
inequality has a positive relationship with subsequent economic growth. This implied that a country might be faced with a trade-off between reducing inequality and promoting economic growth.

Chen (2003) addressed the relationship between income distribution and economic growth from an empirical point of view using 43 countries, for the period 1970-1992 in their sample. The empirical model in this paper followed Barro (1991). Barro (1991) showed that for 98 countries in the period 1960-85, the growth of real per capita GDP was positively related to initial human capital. Chen used the fixed-effect technique for estimation. After running the model, the author discovered an inverted U-shape between initial inequality and long-run economic growth. The author critically discussed that if this inverted U-shape was to be considered as causality instead of a relationship, then this result has completely different implications. In other words, a low-income country with lower inequality can increase its growth by increasing the level of inequality and vice versa. However, since there is no clear indication of causality, this cannot be confirmed.

Albaquerque (2004) investigated the relationship between inequality and growth using a Cass-Koopmans-Ramsey AK model based on households with heterogeneous productivity levels. He looked at two cases; Brazil (from 1961-1989) and China (from 1981-1992), and produced results which were consistent with the findings of Forbes (2000) that in the short and medium run, an increase in the country’s inequality has a positive relationship with subsequent growth. In the Brazilian case, OLS regression showed that growth was accompanied by rising inequality. China also followed the same path but was much more protracted. Albaquerque argued that policies that shrink income distribution might actually lead to an increase in the growth rate because such a policy will free up resources to individuals with high levels of productivity which in turn will lead to growth. He called this notion “inequality-driven” growth where inequality helps in promoting higher levels of growth.

Huang (2004) used a flexible nonlinear inference approach to study the relationship between income inequality and development. The data comprised of 75 countries and for each of the countries, four variables were considered; Gini coefficient, the GDP per capita,
the percentage of all employed in the state sector and the percentage share of cash and in-kind social transfers in the country’s GDP. Results showed an inverted-U shape between inequality and per capita GDP, therefore, confirming the Kuznets hypothesis. The study looked at the Kuznets hypothesis, thus implying a relationship and not causality. The author only observes the income inequality and economic growth relationship and development is not included in the study.

Campano and Salvatore (2007) constructed a model which included two sectors and two different goods. The model included a developing country having sectoral inequality. This inequality in sectors was due to labour productivity and relatively superior wages in the modern sector. They used cross-country empirical estimates in their study where quintiles taken from the World Bank’s 2004 World Development Indicators. GINI coefficient was used as the measure for income. The authors explained their model by claiming that, prior to the beginning of the modern sector, the value of the GINI coefficient will be zero. Once the modern sector is introduced, the labour force will migrate from the old, traditional sector to the new, modern sector until the wage in both the sectors are equal. Prior to the equalization between the wages of both sectors, the value of the Gini coefficient will be more than zero and is likely to be at an absolute maximum. The authors realized that economic development cannot be measured by per capita income and quality of life is an appropriate measure to use. A Monte Carlo simulation of 84 countries was employed, which were divided into four groups; lowest wage, labour-intensive countries, (2) low-wage, mixed levels of capital-intensiveness, (3) Medium-wage, mixed capital-intensiveness, (4) High-wage, high capital-intensiveness. The results asserted that income inequality will deteriorate due to the implementation of the modern sector, before reaching a turning point and improving later on. The authors also looked at the entry of a new modern sector arguing that once a new, modern sector is implemented, the potential of income inequality worsening is higher.

Okazaki (2007) addressed the relationship between economic development, income inequality and social stability, using data from pre-war Japan. He used the regression analysis using prefecture level panel data in studying economic development and income
inequality. The author selected four data points for which income inequality index is estimated; 1888, 1896, 1921, 1935. The results produced an inverse U-shape, confirming Kuznets hypothesis that inequality initially rises with growth. In other words, inequality was rising with per capita income in Japan during the four periods mentioned above.

All of the studies mentioned above obtained a positive relationship between inequality and growth, as did Kuznets (1955). However, some points need a brief explanation without going into great detail because an in-depth analysis will be carried out in chapter 3. Firstly, some authors used the same theories mentioned by Kuznets as the basis of their research. Robinson (1976) and Anand and Kanbur (1993) entirely focused on the Kuznets' theories such as savings and industrial shifts in the economy from the agriculture to the industrial sector. Robinson's work was highly beneficial to Kuznets hypothesis however, Robinson failed to take into account systematic changes. Robinson failed to clearly state the two sectors, but instead only mentioned that the two sectors have different income distribution. Another issue that is of importance is that Robinson actually mentioned development but used quantitative measures that measured growth instead of development to establish his results. This point should be carefully interpreted because this paper was written in 1970s and the difference between growth and development was not as clear as it is today. Anand and Kanbur were also very beneficial as they formalized the findings of Kuznets using the similar theories mentioned above. It is also important to point out that some author observed the relationship between inequality and development whereas; Kuznets asserted the relationship between inequality and growth only. The difference between these two notions must be clearly understood and is discussed in greater detail in chapter 3. Regarding this point, another flaw in some of the studies was that authors used quantitative measures to measure development, when in fact these measures were evaluating growth. Ahluwalia (1976a,b) and Okazaki (2007) are two examples of authors that used quantitative measures to evaluate development when in fact their measures were measuring growth. This point is also mentioned in greater detail in chapter 3. Lastly, data was a major issue as no unanimity existed amongst authors as the range and type of data or measures used were extremely wide. These factors can be
argued to have played a role in the results obtained and are analysed in greater detail in chapter 3.

2.2 Against Inequality being Beneficial to Growth

Alesina and Rodrik (1991) observed the relationship between political conflict and economic growth in an endogenous growth model. Their study firstly looked at two “classes” (workers and capitalists) using a basic model, where there is a one sector closed economy with two groups of individuals, workers and capitalists. Using cross-country regressions from 67 countries in the 1950s and 1960s, the authors reached the result that in a democracy, the rate of growth will be lower if the distribution of wealth is unequal. The authors explained the result by arguing that due to an unequal distribution of ownership, a majority of the population owns very little capital, and therefore favour a high tax on capital, which reduces growth. When discussing a democratic system, Alesina and Rodrik claimed that when voting plays a major role in generating policy choices, countries where wealth is unevenly distributed tend to grow more slowly than those where the distribution is better. This is because when the policies are created in a less democratic system, the policy makers decide the weights given to the welfare of different classes which determines growth and not the society. Alesina and Rodrik were only indirectly concerned with inequality and economic growth as they observed the relationship between income distribution and growth through a political framework and focused on the effect of democracies and non-democracies on growth. Their findings were against the Kuznets hypothesis, because they believed that inequality slows growth in a democracy where voters decide the tax rate.

Alesina and Perotti (1993) discussed the effects of income distribution on investment, by focusing on political instability as the channel which links these two variables. They argued that the previous literature has failed to answer the old question regarding the channels through which inequality adversely affects investment and growth. Accordingly Alesina and Perotti tried to answer two questions; does income inequality increase political stability? And does political instability reduce investment? Their findings
suggested that the answer to both of the questions is “yes”. The authors used two-equation model, similar to Alesina and Rodrik (1991), where investment and an index for socio-political instability are the endogenous variables. They performed cross section regressions using a sample of 70 countries for the 1960-85 periods. Alesina and Perotti reached the notion that socio-political instability depresses investment and a rich middle class reduces socio-political stability because of increasing policy uncertainty and threatening property rights. Income inequality increases social discontent and fuels social unrest. This in turn, has a negative impact on economic growth. Therefore, the main conclusion the authors reached is that income inequality and investment are inversely related. The authors studied the relationship between income inequality and growth through the effect of inequality on investment. According to them, inequality and investment are inversely related; therefore, inequality indirectly slows growth.

Persson and Tabellini (1994) assessed the relationship between inequality and growth from a political point of view, where the political process and economic growth are endogenised. The authors investigated two questions in their study; why do different countries, or the same countries in different periods, grow at such different rates? What is the role of income distribution in the growth process? They employed an overlapping-generations model with constant population, where rational individuals lived for two periods and they acted as voters and agents. Each individual in this model had exactly the same preference. Two types of data were used in this model; historical panel data and post war cross sectional data. Historical panel data consisted of nine countries (USA and eight European countries) and started from 1830 and ended in 1985. The second sample is a post-war cross (ending in 1985) section data of many developed and developing countries. Per Capita Growth was the dependent variable with 57 observations. The explanatory variables were, income distribution (personal income before tax, 38 observations), political participation (59 observations), average skills i.e. general education level (52 observations) and development, however this was measured by the ratio between GDP per capita and the highest level of GDP per capita (57 observations). In both the datasets, Persson and Tabellini established a significantly negative inequality-growth relationship. They argued that income inequality is harmful for growth because it led to policies that were detrimental
to property rights and failed to allow “full private appropriation of returns from investment”. This is because political decisions in an unequal society result in policies that allow lower private appropriation and accumulation and, therefore, lower growth.

Birdsall et al. (1995) argued that the outstanding economic performance of the East-Asian economies, with low levels of inequality raises doubts about this conventional view that inequality has a positive effect on growth. The author tried to show that policies (such as education policies) which tried to reduce poverty and income inequality in East Asia also stimulated growth. The authors presented cross-economy regression (with 74 observations between 1960-85) results that implied a positive effect of low inequality on economic growth. The results also showed that low inequality of income was an, “independent” contributing factor to East Asia's rapid growth. Birdsall et al. claimed that lower inequality is beneficial to growth because it leads to political stability, increased savings for the poor and increased rural incomes. The basic idea presented by the author here was based on the importance of policies that promoted equality, specifically growth, also induced growth. Since education leads to an increase in human capital and human capital is a major function in the production function, the output increase, leading to an increase in growth.

Clarke (1995) looked to identify the affect of initial income inequality on subsequent economic growth using cross country growth regression. Using the Barro (1991) type regression, mentioned in the previous section, the results suggested that inequality had a harmful affect on long-run growth. Clarke used the similar model as Barro (1991), therefore, assessing the effect of growth on human capital. However, using cross country regression, Clarke argued that the problem with cross-country data is that one or two outlier may have a big effect on the results. However, he showed that this was not the case by performing a partial scatter of the residuals from growth and GDP and regressed them on the Barro (1991) variables. Barro (1991) showed that for 98 countries in the period 1960-85, the growth of real per capita GDP is positively related to initial human capital. According to Clarke, inequality had a negative impact on growth in both democracies and non-democracies and these results are robust. The reason behind this result is the same as the result obtained by Alesina and Rodrik (1991) mentioned above. In short, in an unequal
society, the population favours a high tax on capital, which reduces growth. This study looked at the causal side of the inequality and growth whereby, Clarke was trying to identify whether inequality causes growth to increase/decrease.

Perotti (1996) examined the relationship between income distribution, growth and democratic institutions, by tackling three issues: the properties and reliability of the data, the robustness of the reduced form income distribution data and the specific channels through which income distribution affects growth. He stated four channels of operation for distribution of income; (1) endogenous fiscal policy, (2) socio-political instability, (3) human capital investment with borrowing constraints, and (4) education and fertility decision. Inequality was measured through this paper using the combined share of the 3rd and 4th quintiles for 67 countries for the period 1960-1985. The author used reduced-form estimates to analyse the relationship between income distribution and growth.

Reduced-form estimates produced four results; (1) Equality and growth seem to maintain a positive relationship. (2) However, the positive relationship seems to be weaker when evaluated quantitatively, and also statistically insignificant, when considering poor countries. (3) The positive relationship between equality and growth seems to be stronger for democracies; however, this result does not seem very robust. (4) Since there is a high level of democracy in the richer countries, it is very difficult to differentiate the income effect from a democracy effect. The main findings suggested that societies enjoying higher levels of equality tend to experience lower levels of fertility matched with higher levels of investment in education. More unequal societies tend to be socially and politically unstable and all of this is reflected in reduced growth. The author therefore, was not in agreement with the Kuznets hypothesis as he claimed that equal societies are better for growth.

Bowman (1997) used post 1950 data to examine whether the Kuznets affect should be counted on to encourage equality of growth. Bowman decided to conduct longitudinal comparative-historical micro-analyses of economic growth and inequality for all cases which passed through such a range of economic development since the Second World War. He chose nine countries (Brazil, Costa Rica, Greece, Japan, Malaysia, Portugal, South Korea, Taiwan, and Turkey) and reduced the data comparability problem using
various techniques (observing unambiguous changes in the GINI coefficient, longitudinal data for a single case is reliable and tentative findings are supplemented). The evidence from the nine countries challenged the Kuznets effect in LDCs and the author refused the Kuznets hypothesis and argues that the Kuznets hypothesis should have no implication on any government’s policy decision. The author implied that the experience of the nine countries clearly shows that there is no inverted U-shape curve as asserted by Kuznets and thus a government policy should not consider the Kuznets as a criteria when creating policies.

Deininger and Squire (1998) evaluated the inequality-growth relationship using two new data sets. They emphasised that the main reason for a new empirical study in this field was because previous data sets used were not very accurate. The authors stated that a data analysing inequality and growth should have the following three characteristics: Be based on household surveys, have a comprehensive coverage of all sources of income and represent the population and or at national level and not just certain groups. Using this criterion, Deininger and Squire presented their data set on inequality which contained at least one Gini index observation for 108 countries and information on shares received by different quintiles in the population for 103 countries. They claimed that asset (land) distribution might be a very important factor regarding inequality however; little data existed on land distribution. The authors obtained a dataset of initial distribution of operational holdings of agricultural land for 103 countries. They then conducted cross-country analysis to obtain three main results: (1) There is a strong negative relationship between inequality in asset distribution and long-term economic growth, (2) inequality reduces income for the poor, but not for the rich and (3) longitudinal data provides little support for the Kuznets hypothesis. Deininger and Squire observed the inequality-growth relationship from an empirical perspective employing new, reliable data. It is important to note that their study was purely based on identifying the relationship and not the causality.

Zweimuller (2000) suggested that the potential effect of inequality is through the impact on the incentive it provides to save and invest, and thus, tried to observe the effect of inequality on economic growth. His purpose was to give a critical review of the existing
literature on the inequality-growth idea through discussing historical and recent distributional trends. Zweimuller claimed that after discussing ample literature, the inequality-growth relationship seems to be negative from an empirical point of view. According to him, the negative relationship between inequality and growth is generally explained by the effect of inequality on politico-economic approaches i.e. political and social instability which leads to a reduction in investment and output, thus reducing growth.

Frances (2000) aimed to examine the connection between income distribution and economic growth in order to identify policy implications from his analysis. The methodology employed here was a pure qualitative analysis of the existing literature. By looking at Alesina and Rodrik (1991) Perotti (1993) and Persson and Tabellini (1994), he presented the idea that inequality leads to political instability which lowers investment and thus growth. Frances analysed Alesina and Rodrik (1994) and Persson and Tabellini (1994) to claim that higher inequality lead to populist redistributive tax policies, reducing growth. The author argued that it is very difficult for income distribution to vary in the short-run unless there is very radical action involving asset redistribution. In short, the author obtained enough empirical and theoretical support for equality being beneficial to growth. Frances claimed that the globalization in the modern times has skewed the balance of power and benefits towards those with capital, against those without. This study was done by Frances with no empirical model, but is comprehensive in the sense that it captures much of the literature.

Dadkhah (2001) examined the relationship between income distribution and growth from an empirical point of view. He started by discussing the three reasons behind the old wisdom declaring that income inequality has a positive relationship with growth; the rich consume less of their income, thus a higher savings rate would induce growth. Concentration of resources in a few hands is almost a prerequisite for growth because developing countries do not have an effective capital market coupled with indivisibility of investment projects. Workers and employers require incentive to exert their maximum energy and effort i.e. a society which looks towards equality and equal wages would not provide any incentive to individuals to grow. Dadkhah criticised previous studies that
employed cross-sectional analysis due to the poor quality and inconsistency of data. In his study, a panel technique was used within a VAR model, to look at time series data for the period 1947-2001 from the United States. The author was able to obtain 55 consistent annual observations. In his conclusion, Dadkhah stressed that there is a two-way positive relationship between equal distribution of income and a higher rate of economic growth. In other words, policies that promote equality also, indirectly promote economic growth and vice versa. The model produced results which asserted that more unequal distribution leads to an increase in consumption and thus equality does not reduce savings and induces growth.

Knowles (2001) established that many empirical studies have found the relationship between income inequality and growth to be negative. However, these studies need to be interpreted with caution. He tested whether the results from the previous studies are robust when measured consistently. He used the “Barro-style” regression, with cross-country data for the period 1960-1990. Knowles discovered a significant negative correlation between inequality and growth once redistribution had taken place. He specifically addressed Perotti’s (1996)* four main arguments. Knowles argued that Perotti had some problems with the data and that Perotti failed to point out that the hypothesised relationship is likely to hold in the long-run in all of his four arguments. Knowles criticised the empirical literature arguing that previous studies had data quality problems claiming that all studies prior to Deininger and Squire (1998) had data quality problems. Knowles claimed to test the empirical studies consistently, and obtained the same result that inequality is detrimental for growth. This result should only be interpreted on a relationship basis and not a causal basis.

Panizza (2002) observed the relationship between income inequality and economic growth using a panel of income distribution data covering 48 US states for the period 1940-1980. Both fixed effects and GMM estimation techniques are used in this paper. This study was similar to that of Partridge (1997) however, their findings were different. Panizza discussed that cross-country analysis in the past have found a negative relation whereas, panel techniques have produced positive relationships between inequality and growth.
Panizza’s results do not show a positive relationship between inequality and growth but rather there is a slight implication of a negative relationship between inequality and growth but this result is not robust and slight changes in measurement could lead to major differences in results. Panizza returned the difference in his results to that of Partridge, although they used similar techniques, to the differences in estimation techniques and the small differences in the source of data used to measure inequality, which might make a big difference in the outcome.

Kustepeli (2006) investigated the relation between income inequality and growth in per capita income in the context of EU enlargement. He was interested in analysing whether the EU enlargement of 2004 had an effect on income distribution in the region. Kustepeli tested whether adding the ten new members (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia) and three additional members (Bulgaria, Romania, and Turkey) to the EU affects the relation between income inequality and growth in the European Union. The data was obtained from the Deininger and Squire (1998) data set which contained the GINI coefficient, cumulative quintile shares, and explanations about the basis on which the Gini coefficients were computed. Two Kuznets curve specifications were estimated for several EU groups. Five groups were included; European Union before the enlargement on May 2004, European Union 2004 enlargement, European Union after admitting the three candidates, the newly accepted countries and the current non-member countries. The average number of observations per country was thirteen with the time period of 1951-1998. Kustepeli’s estimation results indicated no evidence of a statistically significant original or reverse Kuznets curve for any of the groups of countries in this study. Simply put, the author refused the Kuznets hypothesis as his results indicate no presence of the Kuznets curve. This is also a relationship result and Kuznets (1955) was only interested in the relationship and not the causality between income inequality and growth.

Qin et al. (2009) looked at the effects of income inequality on China’s economic growth by incorporating panel data information via a quarterly macro-econometric model (sample size is 1992Q1-2003Q4). The authors’ results supported the idea that income
inequality cannot be ignored in determining consumption, especially when income inequality is evolving overtime. The authors’ main findings regarding determination of consumption were consistent with that of Zweimuller (2000) that inequality has a negative impact on long-run aggregate demand. However, looking at consumption from the demand side is not enough, therefore the authors run a model simulation. Their main finding was that significant changes in income inequality – have negative effects on macro-economic stability as they lead to a surge in consumption and then investment. Qin et al. are only interested in growth as they see the effect of income inequality on macroeconomic factors such as consumption and investment. Their results refused the Kuznets hypothesis as they established a negative relationship between inequality and growth.

Isagiller (2011) wanted to empirically investigate whether there is any systematic relationship between income inequality and economic growth in both directions; the effects of growth or development on inequality and the effects of inequality on subsequent growth. He used traditional cross-country ordinary least-square estimation using recently updated data on several variables and a much consistent data on income inequality, the Theil indexes. The relationship between inequality and growth was investigated in different samples for two periods, covering the years between 1965-1985 (92 observations) and 1985-2005 (62 observations). Results showed that poor countries are more unequal than richer countries and increases in per capita income are associated with declining income inequality. Isagiller thus found no support for the Kuznets hypothesis. The results also showed that when structural differences among countries were taken into account, an inverted U-curve emerges; however, this is because most of the countries with high inequality and middle per capita income are the Latin American countries which are characterized by high levels of inequality relative to the other countries in the study. Therefore, the inverted U-curve seemed to be an artificial fact as a consequence of these Latin American countries clustering in the middle.

All of the studies mentioned above obtained a negative relationship between inequality and growth, contrary to the findings of Kuznets. However, some points need to be mentioned briefly without going into greater detail because chapter 3 will carry out an in-
depth analysis of the literature. Researchers obtained various reasons for the negative relationship obtained between inequality and growth. For instance, many authors including Alesina and Perotti (1993) and Persson and Tabellini (1994) asserted that inequality was negatively related to growth because inequality increased political and social instability which in turn decreased investment, thus reducing growth. Birdsall et al. (1995) argued that policies that improved education also improved inequality and led to growth. Clarke (1995) argued that an unequal society favoured high tax on capital, which reduces growth. All of the above mentioned examples somehow affect productivity. If we are to take the production curve mentioned by Mankiw (2003):

\[ Y = AF (L, K, N) \]

\(Y\) = Implies the quantity of output

\(A\) = Technology available

\(L\) = Labour and Human Capital

\(K\) = Physical capital

\(N\) = Land or Resources

\(F\) = Function showing how various inputs are used.

Therefore, an increase in inequality eventually affects productivity, either through the decrease in investment. Investment would then affect the production function through its affect on capital, technology and even human capital. If inequality affects education, as argued by Birdsall (1995), it would affect labour and human capital. In short, all of the factors mentioned by researchers in this section lead to a decrease in productivity.

Data comparability, usage and availability continued to be a problem for researchers in this section as no constant model or measure was used. Distinction between growth and development seemed very ordinary.
2.3 Mixed Results

Braulke (1983) considered the inverted U-hypothesis as a theory about the nexus between growth and inequality and the objective of his study was to investigate how realistic its underlying assumptions were. He performed a small cross country study using a sample of 33 countries. His results showed that income distribution in the rural sector tends to have somewhat less inequality than that in the urban sector. However, the difference between the urban and the rural sectors eventually decreases because the more modern technologies, first introduced in the urban sector, will also eventually spread to the rural sector, thereby increasing this sector's productivity level to that of the urban sector. The results also showed that many countries in fact do deviate or move away from what the U-hypothesis suggests for the representative country at the same stage of development. The sample of 33 countries in this study is used to construct a “representative” country. The study also showed that countries with balanced income distribution have better levels of growth. However, the main conclusion Braulke reached was that each country has considerable freedom to determine the distribution between sectors, and therefore the level and the shape of the U.curve it will travel.

Eusufzai (1997) argued that if there is a relationship between inequality and GNP per capita in terms of an inverted U-shape, then an econometric test should detect where the break exactly occurs in the inequality-GNP per capita relationship. The author used the Quandt Log-likelihood Ratio Test (QLRT) arguing that this technique is the most appropriate when the relationship is believed to have changed abruptly at an unknown point. He obtained the data from Anand and Kanbur (1993). The per capita GNP was measured in 1970 USD and six inequality indices were considered. Data consisted of 54 countries, 41 of which were developing countries and cross country data was used. At first, the results indicated a break in the relationship however; the author confirmed this by calculating the correlation coefficient between the inequality measures and the GNP per capita, before and after the breakpoint. The results confirmed a breakpoint regarding the relationship between inequality and growth but failed to clearly specify whether the
relationship is positive or negative. Eusufzai claimed that it is hard to test the Kuznets hypothesis with just one test, and Eusufzai’s results were mixed.

Savvides and Stengos (2000) re-examined the inequality–development relationship by endogenously testing whether there is an existence of a threshold level in the Kuznets hypothesis. The threshold regression (TR) model was used and it allowed the level of development (however this was measured using per capita income and implied growth) to determine whether there was any existence of a threshold level in the Kuznets hypothesis. The authors followed Hansen (1999) who proposed a “bootstrap procedure to test the null hypothesis of a linear formulation against a TR alternative”. The authors used panel estimates of the GINI coefficient (measure of income with 618 observations), which were obtained from Klaus and Deininger (1998). Their result failed to assert any relationship between income inequality and per capita income, in any case of the inequality index used.

Barro (1999) evaluated the relationship between income inequality and growth using a panel of countries. He started his paper by first listing the theoretical effects of inequality on growth and investment. He argued that theories can be classified into four categories; (1) Credit market imperfections which typically reflect the asymmetric information and the lack of legal institutions. Credit market is very important as financing for the poor is as important as the rich and distortions in credit providing increases the inequality gap, (2) Political economy i.e. a greater level of inequality leads to more redistribution through the political process, which affects growth as more capital is accumulated by all sectors of the society (3) Social Unrest. This is very clear in the literature as many authors have claimed that inequality leads to social and political instability, reducing investment, which is detrimental to growth. (4) Saving Rates, in the sense that redistribution will lead to decrease in the amount of aggregate saving i.e. when redistribution takes place from the rich to the poor, the rich households will save much less, thus negatively affecting growth. The empirical framework in Barro (2000) was based on conditional convergence. The data was obtained from the Deininger and Squire (1998) which provided constant GINI coefficients and Barro performed a cross-country research. He argued that there is little overall relationship between income inequality at one hand and growth and investment at
the other hand. However, for growth there was clear indication that poor income distribution slows growth in poor countries while encouraging growth in richer countries.

Barro (2008) was a continuation of Barro (1999). He looked to test whether the relationship between income inequality and economic performance transformed along with modern developments over the last few decades, specifically globalisation (in particular, increased international trade). He assessed whether the Kuznets curve has shifted in years. The data in Barro (2008) is different to the previous study as the datasets improved. In this study, Barro used *World Income Inequality Database (WIID)* which was compiled by UN in 2007. WIID incorporates the dataset prepared by Deininger and Squire (1998) and includes up-to-date observations to enhance the previous data. Barro concluded that the Kuznets curve is an “empirical phenomenon” because income inequality initially rises during the process of growth but later on decreases with GDP per capita. The range of declining inequality covers the majority of country-time observations. He also asserted that the Kuznets curve maintained stability from the 1960s all the way to 2000s. However, the curve failed to clarify the fluctuations and variations in income inequality across countries or over time. Barro also asserted that international openness seemed to have a positive effect on income inequality. To sum up, Barro concluded that the cross-country growth analysis produced a negative effect of income inequality on economic growth, given that certain set of other explanatory variables are fixed. However, as per capita GDP rises, this effect of inequality on growth diminishes and could possibly be positive for the richer countries. This statement indicates the Barro was observing causality as he mentioned the effect of inequality on growth and not the relationship. In short, his results are mixed and neither support or refute the Kuznets hypothesis.

Chen and Guo (2002) reexamined the study by Li and Zou (1998), in which they argued that theoretically, inequality can lead to higher economic growth when public consumption enters the utility function. According to Li and Zou (1998), various estimations and a sensitivity analysis show that income inequality is positively associated with economic growth. Chen and Guo used an endogenous growth model called AK model where A represents the level of technology and K is the human capital. The model
employed Constant Relative Risk Aversion (CRRA) specifications for both private and public consumption goods with a more generalized utility function. The AK model is a simple model of growth which works on the property of absence of diminishing returns to capital. The theoretical results showed that the effect that income inequality can have on economic growth can be either zero, positive or negative. However, the quantitative analysis clearly identified the parameter combinations required to produce a positive or negative relationship between inequality and growth.

Bleaney and Nishiyama (2004) tested the hypothesis proposed by Barro (2000) that inequality is harmful for growth in poor countries but good for growth in the richer countries. They employed the GINI coefficient as the measure of inequality and used the WIID dataset. In order to test the Barro (2000) hypothesis, the authors added the initial Gini coefficient to each growth regression and allowed its coefficient to differ according to the level of per capita GDP. In their results, Bleaney and Nishiyma found no evidence for the notion that the sign of the initial income inequality coefficient differs between rich and poor countries in cross-country regressions. This means that the authors obtained no clear result regarding inequality and growth i.e. their results neither supported nor refuted the Kuznets hypothesis.

Shin (2008) used a stochastic optimal growth model composed of heterogeneous agents, including a progressive tax system, to evaluate the relationship between income inequality and growth. He argued that although extensive literature exists on the relationship between income inequality and economic growth, no general consensus is established as of yet and the results are inconclusive. The author’s main findings were in agreement with Barro (1999) that inequality tends to be negatively affected with growth during the initial stages of development, but inequality seems to have a positive effect on growth near the steady state” (Inyong, 2008).

The in-depth literature review presented here looked to provide the reader with an idea of how the relationship between inequality and growth has been extensively studied by various authors and a number of conclusions have been reached. The next section will
provide a critical analysis of the literature in order to better understand the factors that might have produced such mixed results.
3. Critical Analysis of the Literature: Why have we not reached a Consensus on the Inequality-Growth Relationship?

3.1 What do we know so far?

The literature review chapter clearly highlighted how many researchers have rigorously observed the relationship between income inequality and economic growth. Ever since Kuznets (1955) presented his hypothesis on income inequality and economic growth, researchers have continuously tried to establish a consensus on the relationship. However, Kuznets idea has evolved overtime and how researchers observe the relationship has also changed. This is the very notion which has encouraged this dissertation, and is the subject of this coming part.

In the initial decades, Kuznets hypothesis was regarded as a concrete theory as Moran 2005 asserted:

“In the 30 years following its 1955 publication, the inverted U-curve was transformed across the social sciences from a speculative hypothesis to an inevitable and unavoidable socioeconomic "law" that provided both scholars and policy makers with an articulated world view of the nature of growth and inequality”

(Moran, 2005; p2).

Comparing Moran’s (2005) statement with the literature review confirms this. To name a few, earlier authors such as Robinson (1976) extended Kuznets‘ work. Ahluwalia (1976a, b) also confirmed Kuznets hypothesis and Anand and Kanbur (1993) assisted in formalizing the works of Kuznets. Thus, there is enough evidence, when going through the literature, to conclude that in the first three decades, ever since Kuznets presented his hypothesis in 1955, there was a sense of unanimity amongst researchers regarding the relationship between inequality and growth. A number of studies in favour of the Kuznets hypothesis and inequality being beneficial to growth continued throughout the 1990s and 2000s, as for instance, Partridge (1997) Forbes (2000) and Pedro (2004) all observed a
positive relationship between inequality and growth. However, this did not go unchallenged; Kuznets hypothesis started facing challenges in the late 1980s. As Moran (2005) stated that:

“The unanimity surrounding the U-curve hypothesis began to face a wide challenge in the 1980s. By the end of the decade, the interpretation of the U-curve turned from being generally regarded as an "iron law of development" to a contentious hypothesis associated with contradictory findings and ambiguous conclusions”.

(Moran, 2005; p. 12)

This notion is also confirmed by observing the literature review, most of the prominent studies that observed a negative relationship between income inequality and growth are found to begin in the early 1990s. Alesina and Rodrik (1991), Alesina and Perotti (1993) and Persson and Tabellini (1994) are amongst the most prominent studies that observed the negative relationship between income inequality and economic growth via a political framework. Other authors such as Deininger and Squire (1998) and Panizza (2002) observed the relationship directly (not via a political channel or any other indirect way), and established a negative relationship between inequality and growth.

For decades, the argument regarding the relationship between income inequality and economic growth has gone back and forth with no concrete consensus amongst researchers. Where some have established a positive relationship between inequality and growth, others have contradicted this notion using both empirical and theoretical frameworks. Prime example of this statement is that Persson and Tabellini’s (1994) findings are challenged by Partridge (1997) and proven wrong (according to Partridge (1997). Partridge (1997) is later challenged by Panizza (2002) and proven wrong. This has been the case for decades as authors have constantly challenged each other on different grounds. There are even researchers who have stated that there is no clear relationship between income inequality and economic growth e.g. Savvides and Stengos (2000).
In short, the relationship between income inequality and economic growth has been subject to rigorous study, but no clear consensus exists amongst economists regarding the relationship. Our analysis determines two basic factors that could have had an effect on the ambiguity of the results. These two factors are data problems and the lack of distinction between growth and development. The next two sections analyse the role of these two factors and the third sub-section looks at the affect of inequality on social and political instability.

3.2 Data Problems

Data availability, comparability and usage have been a very ambiguous criterion in all the literature studied in this dissertation. In all of the studies discussed regarding the inequality-growth relationship, there is no clear outline on the data used or the data technique employed in the study. There is no particular inequality measure, or any particular growth measure. Different authors have used different measures for inequality and growth thus creating a sense of confusion when judging the credibility of each study. Data is critical to empirical studies as it shapes the results and the interpretations. Data is one of the main reasons that no clear consensus exists amongst researchers on the relationship between inequality and growth.

The studies can be divided into two main types of analysis; cross-sectional analysis and panel technique. Authors such as Alesina and Perotti (1993), Deininger and Squire (1998) and Isagiller (2011) are all examples of cross-sectional studies that found a negative relationship between income inequality and growth. Forbes (2000) argued that most of the cross-sectional studies tend to find a negative relationship between inequality and growth but did not to state why. Panizza (20020 claimed that most cross-country studies obtain a negative relationship between income inequality and growth whereas, panel data results suggest a positive relationship between inequality and growth. However, Ahluwalia (1976) used cross-country analysis to confirm the Kuznets Hypothesis. This causes a lot of confusion given that the same type of study leads to completely opposite results. Researchers have also criticized various techniques used during analysis. Forbes (2000)
argued that cross-country data is not the right way to measure inequality and such data can lead to “measurement error and omitted-variable bias”. Ahluwalia (1976) and Knowles (2001) both argued that cross-country analysis is ideal because not enough data is present to carry out panel analysis. Almost all of the researchers understand the data problem and clearly mention this point in their studies.

Another major issue is the dataset used. Data is critical as it shapes the results and data availability and data comparability are two very serious issues when studying inequality and growth. For some countries, the data is not available making it very hard to obtain reliable results. Due to the different economic characteristics of countries, it is very hard to compare their data. Deininger and Squire (1998) is the most commonly used data set when observing the relationship between income inequality and economic growth. Knowles (2001) discussed that all the studies prior to Deininger and Squire (1998) had data quality problems. Deininger and Squire (1998) improved the dataset immaculately however; data comparability continues to be a challenge. The UN later developed the World Income Inequality Database (WIID) which updates Deininger and Squire (1998). Therefore, constant changes in the datasets are made in order to ensure high quality data but there are no clear guidelines on what dataset to employ when studying inequality and growth.

Measurement of inequality and growth is also a very unclear path. GINI coefficient is the most commonly used measure of inequality and most of the authors have employed GINI coefficient as their measure (Partridge, 1997 and Forbes, 2000 etc). On the other hand, some authors such as Isagiller (2011) used the Theil Index as their measure. Growth on the other hand has also been measured using various measures. GNP per capita is used as the measure for growth by many researchers such as Ahluwalia (1976) and Eusufzai (1997). GNP per capita seems to be the likely measurement for growth however; other authors have used various measures. The main measure of equality used by Perotti (1996) is the combined share of the third and fourth quintiles for his observations. Partridge (1997) used ten-year growth in real per-capita income as his measure for growth. The above examples give an idea of how much doubt and confusion exists when measuring both inequality and growth and this might be one of the reasons behind the variety of
results obtained. Estimation techniques have also differed immensely in the literature discussed. For instance, Chen (2003) used the fixed-effect technique in his estimation to obtain a positive inequality-growth relationship, whereas Panizza (2002) also used fixed effect to obtain a negative relationship between inequality and growth. This might be due to the data used as Panizza (2002) was only observing inequality at the state level and not country level.

In short, empirical studies carried out to investigate the relationship between inequality and growth have been plagued with data shortage, comparability and usage problems, a very valid reason for the mixed results obtained.

The next sub-section discusses yet another problem with the literature which is regarding using growth and development interchangeably. Growth and development are not the same and it is critical to understand the difference between the two.

3.3 Is it Growth or Development?

When Kuznets presented his hypothesis in 1955, he discussed the relationship between Economic “Growth” and Income Inequality. Over the years, however, many authors have tried to observe the relationship between income inequality and “development”. It is crucial to understand the difference between the two notions. Broadly speaking, growth is said to be a quantitative indicator (GDP, Per Capita Income). Development, on the other hand, is thought to be a qualitative indicator (quality of life, standard of living), but there are ways to quantify development as well. Flammang (1979) stated that:

“Economic growth is a process of simple increase, implying more of the same, while economic development is a process of structural change, implying something different if not something more.”

(Flammang, 1979; p4)
Michael Todaro, author of *Economic Development* (published in 1993), defines economic development as the following:

“Development is a multidimensional process involving changes in structures, institutions, and attitudes as well as the acceleration of economic growth, the reduction of inequality, and the eradication of absolute poverty.”

(Todaro, 1993)

In short, there are many definitions of both growth and development but they are two different phenomenons and must be differentiated.

Some authors have tried to observe the relationship between income inequality and development when in fact; their measures have been quantitative and thus implying economic growth. To name a few, Ahluwalia's (1976) paper is titled “Income Distribution and Development: Some Stylized Facts”. However, the author used per capita GNP as his measure for development. Karpowicz (2008) argued that GNP is a purely economic indicator and fails to allow for change in social or political conditions. Therefore, Ahluwalia (1976) actually observed economic growth and not economic development. Robinson (1976) also observed the U-hypothesis, specifically looking to understand the relationship between income inequality and economic development. Robinson (1976) does not present any qualitative measures in his study and by default, actually looks at growth instead of development. Okazaki (2007) also tries to observe economic development in pre-war Japan however; most of his findings are dependent on GNP. This shows that Okazaki (2007) failed to capture the qualitative factors in his study. One important point worth mentioning here is that most of the studies that looked at development using quantitative measures were in early times, 1970 and 1980s, because the distinction between growth and development was not very clear. However, today the distinction is clear and Okazaki (2007) is too recent to be making this error.

This is not always the case as some authors have used quantitative measures for growth and qualitative measures for development. For example, Mbaku (1997) observed
the problems with using GDP as the measure for development and decided to use Physical Quality of Life and Human Development Index as the measures for development. This allows Mbaku (1997) to capture qualitative factors in his study and specifically look at development.

The Literature shows enough ambiguity regarding growth and development. No matter how different authors have perceived growth and development, it must be understood that the two are different. According to Flammang (1979), growth and development are different processes. They are complementary in the long run but competitive in the short run. Trying to understand the relationship between inequality and growth is completely different to understanding the relationship between inequality and development. This is primarily because growth does not mean development. In other words, a country might be enjoying high rates of GDP growth but the level of development (health, schooling) might be extremely poor. This is a crucial point because using the right method or objective of the study can have immense affects on the result as well as policymakers, who are either looking to target growth or development.

Easterly (2001) tried to observe the “growth without development” phenomenon in Pakistan. He observed that Pakistan has enjoyed a decent growth rate ever since its independence, however, social indicators like infant mortality and female primary and secondary school enrollment were among the worst in the world. The main reason being the political instability in Pakistan as the country has suffered from political issues ever since its independence from the British in 1947.

India, like Pakistan, has had very impressive growth in the recent decades but development has not followed such a pattern.

“The Indian economy has grown at an average rate of 6.4% a year since 1992... The fact is that 44.2% of India’s population lives with an income of less than USD 1/day.3 The Human Development Report 2001 ranks India 115, with a Human Development Index (HDI) value of 0.571” (Samuel, 2001; p1)
According to the Samuel (2001), growth has not led to development for three main reasons in India; Inequitable distribution of land, Insufficient budget and inefficient management and Economic Recession.

These two studies are just two examples that prove that growth does not always lead to development. This part of the research will provide more statistics to prove once again the point mentioned above, but more importantly will be the building block upon which the following section will be based. The United Nations Development Program’s (UNDP) Human Development Report (HDR) is the most trusted source which can provide development indicators. The Human Development Report uses the Human Development Index (HDI) as its measure for development. HDI is measured on a scale from 0 to 1, where 1 represents the highest level of development and 0 represents the lowest level of development. HDI is simply used to distinguish between developed and developing countries (UNDP, 2011). HDI takes into account life expectancy, education, literacy, quality of life and standards of living for 185 member states of the United Nations (UN). Using the HDI, the HDR ranks the countries based on their performance on the HDI scale. Data on growth will be obtained from The World Bank Database for its reliability.

The data is for six selected countries, five of which are developing; Egypt, Tunisia, China, India and Brazil, and have shown excellent economic growth in the recent past. The sixth country is the United States which is the only developed country in the data for reasons that are explained later.
As shown in table 1, Egypt grew at an average of 6.54% from 2005-2010 however; the country’s performance on the HDI is disappointing with a very poor ranking, 113. 6.54% average growth in GDP over five years is an excellent achievement but unfortunately this could not be translated into “development” in Egypt. Tunisia is almost the same as Egypt when it comes to development, a decent growth rate of almost 5% could not be translated into development. Given Tunisia’s low population, such growth rate could have led to a decent level of development, but this was not the case and Tunisia ranks 94 on the global HDI list. China and India have grown outstandingly for decades, sustaining their growth for years but the development indicators for China and India do not look impressive with poor rankings, 101 and 134 respectively. However, their HDI constantly increasing by decent percentages, but the main problem facing these two countries is that development is occurring in clusters. China’s development is almost solely along the coastal lines where business takes place, whilst rest of the mainland is highly undeveloped. India’s growth is
also occurring in certain areas while other areas remain highly under developed. United States (US) is an interesting case as it is already a developed country and achieving higher rates of growth are difficult due to the steady state position. It ranks 4\textsuperscript{th} on the HDR and has one of the highest standards of living and quality of life.

This subsection shed light on the difference between growth and development. In the literature discussed, researchers have tried to observe both, but a lot of doubt remains as the distinction is not clearly understood in the literature. For instance, the US has enjoyed excellent growth and development, but is currently suffering from social unrest. This is the topic of the next subsection, which will look into inequality and political and social instability.

3.4 Inequality and Social and Political Instability

The notion that inequality is harmful for growth because it affects political stability is not a new one. Authors such as Perotti (1993), Persson and Tabellini (1994) and Alesina and Rodrik (1991) all established that inequality is harmful for growth as it has a negative effect on political stability. Policymakers always tend to argue that economic growth is the most important economic indicator and that if the economy is growing; things are bound to be good. This idea goes against our findings from the literature. If economic growth was accompanied by rising income inequality, this will lead to political instability. Political instability is vital for growth as it directly affects investment. Thus, it becomes a vicious cycle. The main argument here is that the right questions need to be asked. Just observing growth is not enough because other issues can indirectly be detrimental to growth as mentioned above.

The notion that inequality leads to political stability can be studied using various real world examples that are considerably recent. The revolutions in Egypt and Tunisia occurred mainly because of massive inequality gaps, corruption and poverty. Both Tunisia and Egypt enjoyed economic growth in the recent past as Table 1 in the previous section shows, however, that was not translated into development and the inequality gap in these countries grew very rapidly. This was mainly due to the extraordinary level of corruption from the
government. In Egypt, businessmen with political power exploited their powers to gain very high levels of wealth. Given a very poor redistribution system, the inequality gap in Egypt rose to new heights. The revolutions in both Tunisia and Egypt were mainly due to income inequality, causing both regimes to topple. For instance, the motto of the Egyptian revolution was “Bread, Freedom and Social Justice”. Given this example, we can assert that inequality does indeed lead to political instability. According to Gregor (2012) from The National newspaper of United Arabic Emirates, capital flight in Egypt and Libya during the revolutions hit $8 billion. Political instability is known to be detrimental to economic growth. Today, Egypt is politically unstable, which has shrunk the GDP growth levels and the level of investment is very low because no one wants to invest in such a risky political situation. According to French (2012) from Reuters, Egypt is unlikely to meet its investment target.

Egypt and Tunisia are transition economies that were ruled by autocratic regimes for decades. Corruption was high as expected with poor economic structures. However, it will be interesting to look at the situation in the United States. According to CIA Factbook (2011), the US has much higher inequality than both Egypt and Tunisia. Inequality is measured by CIA Factbook (2011) using the GINI coefficient and US ranks as the 42nd most unequal country in the world. In contrast, Tunisia and Egypt rank 62nd and 90th respectively. According to a documentary by Al Jazeera (2011), the richest one per cent of the Americans earn nearly a quarter of the country’s income. The most interesting aspect of this fact is that the US is one of the richest countries in the world and it ranks 4th on the Human Development Report rank. In other words, US economy is consistently growing (slight fall in GDP due to 2008 financial crisis but the economy is recovering) and the US is highly developed, but inequality is still high. In this light, it is no surprise that the US is suffering from protests such as “Occupy Wall Street” (OWS) which began in late 2011. The OWS are protests against inequality (both social and economic), corruption and other economic issues. OWS began mainly because of the rising income inequality in the US. The Congressional Budget Office (CBO) shows that income inequality in the US rose very rapidly for the top 1% of the Americans. The figure below is obtained from the CBO and depicts how the income of the top 1% of the American society has risen.
The figure clearly shows that percentage of income going to the top 1% rose sharply between 1980 and 2007. In 1980, 10% of total income went to the top 1%. By 2007, 23.5% of annual US income went to the top 1%. This shows the massive disparity in income in the US and why protests like OWS are starting to occur. All of the above examples of Egypt, Tunisia and the US show that growth is not the only criteria that policymakers should observe. In other words, growth should not be the only factor assessed in understanding an economy but instead development should also be considered. This is because development takes into account more qualitative factors, including income inequality, which are useful in evaluating an economy rather than just number implying growth in GDP. The right question to ask is that should we be concerned with inequality and growth, or inequality and development. Our analysis shows that development is critical because there are examples of countries which continue to grow but fail to achieve development. Egypt and Tunisia grew impressively in terms of economic growth, but economic development indicators in both countries remain. Therefore, if development is to be taken as the factor upon which economies are judged, qualitative factors such as income inequality, quality of
life, education, health and social security will automatically be included. Therefore, it seems that development is definitely the better factor to observe when judging economies.
4. Findings and Conclusion

Ever since Kuznets presented his hypothesis claiming that inequality initially increases with growth before decreasing in the later stages of growth, many researchers have tried to figure out the relationship. A vast variety of results have been obtained by various researchers. Those in favour of the Kuznets hypothesis claim that factors such as the saving rate and wage differential cause inequality to rise with growth, because higher inequality leads to a larger amounts of saving by the rich, and since savings induce growth, higher inequality leads to higher rates of growth. On the other hand, those against Kuznets hypothesis argued that a more equal distribution is beneficial to growth, mainly because of the socio-political instability caused by income inequality, which causes investment to shrink, and reduces growth. Mixed results have also been produced by some researchers claiming that the Kuznets hypothesis is neither supported nor refuted. Our critical analysis provided some insight into the reasons that might have led to such a situation where there are completely different results obtained regarding the same relationship. Two main factors are discussed in this dissertation; firstly, Data availability and comparability and secondly, the lack of distinction between growth and development. Firstly, Data availability, usage and comparability have been a major issue as no one dataset, or measure is available. Therefore, completely distinctive measures and datasets are used by researchers which makes it hard to compare and evaluate results. Growth and inequality measures are also victim of the same problem as both the variables are measured by different measures. Secondly, there seems to be a lack of distinction between “growth” and “development” in the literature. Kuznets examined the relationship between inequality and growth; however, overtime many researchers have examined inequality and development. The major problem, though, exists in the measurement of development employed as many authors have used quantitative measures to evaluate development, when in reality these measures are actually measuring growth and not development. Lastly, our analysis shows, using examples from the real world, that inequality has a major affect on social and political stability implying that growth is not the only factor which judges an economy, but other factors such as inequality can also play a major role on the economy.
Our results provide us with certain policy implications. Firstly, we assert that development is a broader notion than growth as it incorporates various factors such as inequality, quality of life and standard of living to name a few. In the past, policymakers have always observed growth and depended on growth as the right measure of the state of an economy. This study argues otherwise, claiming that the right measure of an economy should be the level of development since it incorporates all the crucial factors that provide an overview of the quantitative factors of an economy and the qualitative factors (inequality and poverty etc) as well. This point is clearly asserted in this dissertation. Using statistics from six countries, this dissertation shows that growth does not always transform into development and growth also does not guarantee socio-political stability. Therefore, our main policy implication is that when evaluating the performance of an economy, it is not growth that should be the only factor that should be relied on but instead, development is a better measure of an economy as it incorporates a wider range of factors.

The purpose of this study was to examine the relationship between inequality and growth and understand exactly what we know about inequality and growth. We can now answer this question by claiming that we do not know much more than we did a few decades ago due to the reasons mentioned above. However, we can strongly argue that the right question to be asked should be: how can growth and development can be achieved together without trading off one for the other and if they cannot be achieved together what is the payoff for achieving better equality and development?

This study has provided an extensive analysis of the literature and opened doors for new research. Given that after half a century of research, and we still do not know any more than we did when Kuznets presented his hypothesis, it must be asserted that future research is necessary. Future research should look to indentify the relationship between inequality and development, using appropriate measures that actually measure development and not growth. Another area of further research should look to identify ways to achieve growth and development mutually, or to achieve one of the two with little payoff for equality.
## Appendix: Summary Table

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<th>In Favour of Inequality being beneficial to growth</th>
<th>Against inequality being beneficial to growth</th>
<th>Mixed Results</th>
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