“To combat poverty and increase growth in the world’s poorest countries policy makers need to focus on decreasing world income inequality.”

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1. Introduction

This paper aims to explore the relationship between inequality and growth by surveying, and analysing a select list of papers regarding the subject, but also by developing some theoretical models behind this. By gaining an understanding of the relationship and identifying various channels through which inequality and growth interact we can begin to put forward and discuss various policies aimed at reducing inequality in order to promote growth and reduce poverty.

Before continuing it is fundamental to fully understand each of these factors and discuss methods by which they are calculated. Inequality in income generally refers to a situation where income within a population is unevenly distributed such as a large, widening gap between the rich and poor. We can visually analyse inequality by creating a Lorenz curve, this is done by plotting cumulative income vs cumulative population and drawing a straight diagonal line which represents perfect equality. We then use given income distributions to plot a curve which represents a Lorenz curve for said economy. The further away this curve is from the perfect equality line, the higher the amount of inequality there is within the specific economy. This allows us to graphically compare inequality across different economies or countries. However, when curves intersect a judgement cannot be made as to which country has larger inequality. This leads us to the gini coefficient which, using a numerical formula, creates a complete ranking of inequality for each economy allowing for direct comparisons. In regards to growth, there are various measures available but the ones we typically see are GNP per capita or GDP per capita. GDP per capita measures the value of all goods and services produced within a country during a specific time period per person, GNP per capita differs in that it includes the net from income gained by residents overseas and income earned within the domestic economy by residents overseas.

2. Linking inequality and growth

Research surrounding the relationship between growth and inequality has been conducted consistently throughout the years and has given light to various hypotheses and theories. In order to develop policy aimed at increasing growth via reducing inequality it is important to first gain an understanding of how these two factors interact and to what extent. Thus, this

section will review some of the empirics and theory relating to inequality and growth with the aim of identifying a relationship which has been reinforced by real-life data.

Kuznets (1995) found evidence of a non-linear relationship between inequality and growth which led to his introduction of the Kuznets's inverted "u" hypothesis. The hypothesis states that low-income countries often have low levels of inequality, however as income rises, inequality follows which leads us to middle-income countries which are said to have the highest levels of inequality. Once a certain "turning point" is reached, inequality starts to fall as income rises which suggests that high-income countries have low levels of inequality, thereby creating an inverted u shaped graph. Reasoning behind this relationship is such that: during the original transition of rising income, the benefits of such growth are only experienced by certain groups (typically those with higher income levels already) which therefore leads to higher inequality. However, beyond the turning point, the benefits of income growth are more widely spread and lower income groups begin to experience the benefits from growth, thereby reducing overall inequality. This proposition has led to substantial speculation with various studies finding empirical support of this relationship, and others finding contrasting evidence. Individual studies will be discussed later on in this paper although the general theme is that cross-sectional data tends to fit the Kuznets curve whereas longitudinal data often finds discrepancies.

We can also look at three other models in which inequality may interact with growth. Savings and inequality; Politics and inequality; and Human Capital & Capital Markets.

2.1 Savings and Inequality:

It is uncontested in economic research that savings has a direct effect on growth. This has been pioneered by the Harrod-Domar model and perhaps, the more realistic, Solow growth model. In the Solow growth model savings have a level effect on growth whereby savings do not effect per capita income growth rates in the long run, but they do effect the overall level of income within an economy; as higher saving rates mean that an economy converges to a higher steady-state level of income. Moreover, if we determine that inequality interacts with savings then we may see that inequality has a causal effect on growth. Taking a theoretical approach one can build a model dependent on how different income groups spend differently such that a redistribution of wealth can have positive effects on savings or adverse effects. If we observe that the rich people within a population save little, the poor save little and the middle save a large proportion; a redistribution of wealth from the rich to the middle class (which also means a reduction in inequality) can boost the overall level of savings within an economy. It is reasonable to make the assumption concerning the saving patterns within different income groups as the poor often spend a lot of their income in order to survive otherwise known as subsistence concerns. The rich are likely to spend a large amount for reasons similar to living a luxurious lifestyle which often resembles expensive goods and services. The middle income class, the only one with high savings, may have these levels due to future aspirations whereby they reduce consumption in order to progress into a higher class in years to come with higher living standards; otherwise known as aspirations. It is also worth mentioning that the relative size of each class plays a role in how redistributions of wealth affect savings. When comparing a shift of wealth from rich to

middle-class, if the size of the rich class is relatively smaller in comparison to that of the middle class then we may experience adverse effects on savings and therefore growth. Whilst a large proportion of rich in comparison to middle-income will have the desired effects when we shift wealth in favour of the middle-class.

2.2 Politics and Inequality

Another way of approaching inequality and growth is to look at the political structure within an economy and how tax mechanisms are constructed. In economies which are generally more unequal the culmination of votes are likely to favour redistributive policies. This is due to the fact that a large proportion of the population in an unequal society are likely to demand redistributional measures, for example a shift in taxes aimed at those "better-off" in an economy. For this example, the nature of the tax is not important whether it be corporative or directly aimed at those classed as rich. The important feature is that unequal societies will favour larger taxes for those who have higher incomes which, in turn, may have adverse effects on investment and growth. If such redistributive policies were to be implemented it will reduce the net income of those targeted. If for example, higher taxes were implemented on large business/corporations they may cut their investment and R&D, which may cause a reduction in technological innovation and it may also result in those businesses having to adjust their corporate strategy regarding investment to account for these higher taxes. It is clear to see that these policies will directly harm those involved but the effects may also permeate more widely across the economy and may in fact hamper overall growth in an economy.

2.3 Human capital and Imperfect credit.

In economies where parts of the population-namely the poor, have inadequate access to capital markets we may experience persistent inequality throughout generations. If we use a student as an example whereby in order to continue education one must take out a loan we see that an economy where access to capital markets is limited, one will be unable to borrow money in order to improve their education and therefore increase human capital. By potential students having inadequate access to capital markets the economy loses out as a whole as those students will be less likely to work in higher-skilled jobs and overall human capital within an economy will be hampered. Hence, one may be forced into a lower-skilled job which does not full represent their ability and/or productivity. If this is prevalent on a large scale we can see how this permeates throughout generations as those potential students will grow up and have children. However, as they were forced into a low skilled job they are unable to bequest money to their children, when this is coupled with imperfect credit markets, we see that the cycle continues throughout generations and the economy is essentially stuck in a poverty trap. This can also apply to those wanting to take out a loan to start a company which may benefit the economy as a whole and raise productivity. Thus, we observe that scarcity of capital markets is often coupled with inequality which in turn can dampen growth.

3. Empirical Evidence

This section will look at research relating to the discussed models gauging the extent to which we find supporting or conflicting evidence for.

There exists a plethora of research concerning Kuznets's inverted "u" hypothesis which typically takes the form of cross-sectional, or longitudinal data. Ahluwalia (1976) approaches the hypothesis using cross-sectional data consisting of 60 countries with the share of total income going to group I as the dependent variable and the level of per capita income and its squared quadratic as part of the explanatory variables. He found strong and statistically significant results for all explanatory variables, namely the quadratic term. These results run in accordance with the Kuznets curve as the coefficient on the quadratic term for top 20% is negative. However, his model only includes three explanatory variables and we may find that there are a range of other factors which influence the share of income held by x% of the population which would therefore invalidate these results. It also fails to account for time as the dataset is stationary. Others such as Galor & Tsiddon (1995) also find evidence supporting the hypothesis and advocate that the early stages of development (moving from low-income to middle-income) is accompanied by widening wage differentials between skilled and unskilled labour, whereas in the later stages this gap dwindles away.

Deininger & Squire (1998) approach the Kuznets's curve using time series data, they note that the availability of time series data for developing countries is somewhat incomplete as data for some countries is unavailable. They state that after allowing for accounting for country-specific effects they find no evidence supporting the hypothesis. And that after using various methods to analyse the Kuznet's inverted "u" hypothesis they state that "the Kuznets hypothesis is either too flat to be noticeable in the data (and thus unlikely to be of relevance for policy-makers) or is not relevant for developing countries" (pg 282). We see that when using data stretching over a certain period of time (which of course generates results more representative of reality) there is little to no evidence supporting such a hypothesis, although one should keep in mind that the data is incomplete for some countries and time periods.

Alesina and Rodrik (1994) explore the relationship between inequality and growth using panel data consisting of a large sample of countries stretching from 1960-1985. They ran a regression of per capita income growth on various explanatory variables including Gini60 and LandGini with Gini60 being the gini coefficient on income in 1960, and LandGini being a gini coefficient on land distribution. When both of these variables were included they found that both of the factors were statistically significant at the 10% level, with the land gini being significant at the 1% level of confidence. They note that an increase in the land gini coefficient by one standard deviation *ceteris paribus* results in a reduction in growth of 0.8 percentage points per year (pg 481). Hence, they find a strong relationship between inequality and growth, whereby higher levels of inequality results in lower levels of growth.

Persson and Tabellini (1994) look at the effects of inequality on growth whist controlling for schooling and political participation. Whilst using the share of income of the richest 20% and the ratio of GDP per capita to the highest value in the sample as measures of inequality they find that both of these variables have significant negative coefficients which suggests that inequality has a negative relationship with growth, similar to Alesina and Rodrik 1994.

After consideration of the reviewed literature and empirics it is clear to see that inequality can have substantial negative effects on growth, particularly land and income inequality. So in answer to whether or not policy makers need to focus on decreasing world income inequality to combat poverty and increase growth, the simple answer is that they should indeed focus on reducing inequality to promote growth within developing countries.

4. Policy Implications

As aforementioned earlier taxation adjustments is one method in which inequality can be combatted. Implementation of a progressive tax system is one way in which redistributional policies can be introduced. A progressive tax means that the rich are taxed harder as it takes a larger proportion of income from the higher earners relative to those in lower tax brackets. Income gathered from taxes can be redistributed by government spending aimed at those who are poorer, this could be via various channels, such as subsidies and advanced welfare systems. This type of tax is notably hard to implement as individuals can disguise their wealth by putting it towards physical assets or financial assets which generate a stream of revenue detached from gross income; thus it is hard to determine who to tax and by how much.

Alesina and Rodrik (1994) mention that collective bargaining could be introduced to redistribute wealth and decrease inequality; this essentially refers to liaising with employers such like a union, to generate better working conditions for employees whether it be physical conditions or specific terms such as sick-pay. They also note that minimum wage laws and trade and capital restrictions are some amongst many other ways that government policy can be adapted to reduce inequality. However, it is worth noting that the introduction of redistributive policies generally introduce economic distortions (i.e reduced investment in those bearing the brunt of the tax) into the economy which in turn, hampers growth. This is something highlighted by Alesina and Rodrik (1994) and must be considered carefully before implementing a policy. Redistributive measures may take the form of various assets and endowments, for example, land. By redirecting ownership of land to the poorer parts of the population these owners may have a larger incentive to work harder and reduce costs in comparison to working for someone belonging to the “richer” part of the population who owns the land and retains the profits made for themselves.

Deininger & Squire (1998) come to the conclusion that accumulation of new assets is likely to be a more effective way of reducing poverty than efforts to redistribute existing assets. A policy involving redistribution of assets may come at the expense of aggregate investment leading to negative connotations for the poor. By introducing capital accumulation in developing countries one may expect a large increase in productivity and output which may lead to higher investments and growth. As developing countries typically have a large proportion of rural/agricultural sectors which are labour intensive and have an abundance of labour supply, we may expect lower marginal product of labour. Thus introducing new capital/technology will cause productivity to rise substantially allowing the economy to grow faster as a whole.

5. Conclusion

We have seen that inequality and growth are strongly related and have put forward various models in which inequality effects growth. According to the Kuznet's hypothesis, the relationship is non-linear and takes an inverted "u" shape. This poses some interesting implications at it would suggest that inequality disappears over time as income rises thus the market essentially corrects itself and there exists no need for government intervention and policy. This theory has been widely rejected when using time series data, only holding true when cross sectional data is used. Therefore, besides the opinion that ignoring inequality is somewhat unethical this hypothesis appears to crumble when compared to actual, experienced data. We have also discussed how savings, politics, and human capital & credit markets all react to changes in inequality and as a result, affect growth. This shows that there is an opening for government policy aimed at reducing inequality to promote growth leading to the answer of the paper's question, as , yes. We have discussed several policies aimed at reducing inequality with the main theme being to redistribute wealth in favour of those below the median income level. Redistributive policies must be approached with caution as Alesina and Rodrik mentioned, distortions which reduce growth can often be incurred whilst seeking such policies. Other policies such as unionism and collective bargaining have also been mentioned as they provide empowerment to employees who beforehand may have no choice in their working conditions and contracts. Overall, further research into inequality policies is something which may be beneficial to the world, as has been mentioned by several authors so that we can gain a deeper understanding into the true effects of a policy before implementation.

References:

Alesina and Rodrik (1994). "Distributive Politics and Economic Growth"

Persson and Tabellini (1994). "Is Inequality Harmful for Growth?"

Deininger & Squire (1998). "New ways of looking at old issues: inequality and growth"

Galor & Tsiddon (1995). "Income Distribution and Growth: the Kuznets Hypothesis Revisited"

Ahluwalia (1976). "Inequality, Poverty and Development"

Kuznets (1995). "Economic growth and income inequality"