Inequality, Growth and Economic Freedom: Re-examining the Role of Government

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Re-examining the Role of Government

[*] **Simrit Kaur**

Introduction

Recent experience of growth in developing countries is associated with accentuation in income inequalities in nations such as India, China and Bangladesh (Wade, 2004). However, an analysis of the factors that underlie accentuation of inequalities has not received sufficient attention. Therefore, the basic objective of the paper is to focus on the roles of inequality in education and land assets as determinants of income inequality. The study supplements this with a detailed analysis of how the economic freedom influences inequality outcomes, given the distribution of human and physical capital.

It is of interest to study this issue on primarily two counts:

Firstly, there is still no consensus regarding the exact relationship between inequality and economic growth, and

Secondly, there is a general consensus regarding a positive relationship between economic freedom (EF) on the one hand and growth, as measured by GDP on the other.

Since most countries have a twin objective of attaining growth with equality, examining how EF affects equality becomes an interesting issue that needs to be resolved. The purpose of this study is, therefore, to present an empirical analysis to examine the above relationship.

In order to study the relationship between inequality, growth and economic freedom the paper has been divided into four sections. In section 1, the empirical and theoretical evidence on the effects of income inequality on growth are investigated. Section 2 throws light on the relationship between economic freedom and growth. Since economic freedom is generally associated with higher growth, while the effect of inequality on growth is uncertain, the basic objective of section 3 is to provide empirical evidence regarding the relationship between the two. This section discusses the methodology and estimation strategy, the choice of variables and data, and the key results obtained. The econometric results provide evidence that increases in economic freedom, particularly through lower *size of the government* and initial land inequality, both affect income equality adversely. Since increasing the *size of the government* necessarily reduces inequality, whereas its impact on growth may be positive or negative, the paper in section 4, concludes by suggesting a four quadrant approach regarding the appropriate *size of the government* in attaining growth with equity in an era of privatization.

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The evidence supporting the fact that higher land inequalities and higher economic freedom as measured by a lower *size of the government,* both increase inequality is of policy relevance in a number of aspects. *First,* measures of deregulation and privatization of state-owned-assets (SOEs) can, if not implemented carefully and accompanied by an appropriate regulatory framework, lead to large increases in the inequality of asset distribution, with its adverse impact on income inequality. Experience suggests that high levels of inequality are very difficult and costly to reverse. Thus special care is to be taken while adopting the policies of privatization. *Second,* redistribution of assets may be a policy option to be seriously considered, especially in countries characterized by high levels of asset inequality. Such asset redistribution is also likely to enhance growth. Deininger and Olinto in their study for the World Bank, find that the initial asset inequality, as measured by the land distribution, has a significant growth reducing impact. Thus, policies to facilitate asset accumulation by the poor may improve long term growth.

Section I

Income Inequality and Economic Growth

Income inequality is of fundamental interest not only to economists, but also to other social scientists. A substantial literature in economics and social sciences has investigated the relationship between income inequality and economic growth. In this section we explore the links between inequality and economic growth. The analysis in this section provides a theoretical review of the relationship between inequality and growth, followed by an empirical evidence of how inequality affects growth.

Most of the economic literature on the relationship between income inequality and economic growth has its origin in the work of Kuznets (1955). In his 'inverted-U' hypothesis, Kuznets suggested that economic growth can initially lead to a rise and then a fall in income inequality within a country. The classical view, that prevailed until recently, claimed that inequality was growth enhancing. It stated that since the marginal propensity to save is higher for the rich, a higher degree of initial income inequality will yield higher aggregate savings, capital accumulation and growth (Houthakker, 1961; Kelly and Williamson, 1968; Cook, 1995).

Galor (2000) also argues that for a country, in an early stage of development, inequality would promote growth because physical capital is scarce at this stage and its accumulation requires saving. An increased share of the rich in the population would thus result in higher saving and rapid growth. However, at a later stage of development, underinvestment in human capital accumulation due to credit market imperfections (Galor and Zeira, 1993; Agion and Bolton, 1997), makes the poor find it difficult to invest in human capital. During this stage, income inequality results in a poverty trap and lower growth. Thus the direct channel through which income inequality affects growth via savings has a positive effect on growth in the initial stages of development and a negative effect on growth during the later stages of economic development.

However, recent literature links higher initial income inequality with lower growth. Benabou (1996a, b) concludes that initial inequality is negatively correlated with long run growth. His results state that a one standard deviation decrease in inequality raises the annual growth rate of GDP per capita by 0.5 to 0.8 percent points. Deininger and

Squire (1996) also conclude that less inequality is conducive to higher growth. Barro (1999) also found a negative relationship between inequality and growth in poor countries. However, his results showed, that for rich countries (with GDP per capita above USD 2000 at 1985 prices), inequality had a positive effect on growth. There are four main indirect channels that link higher initial inequality with lower growth, thereby contradicting the conventional wisdom regarding the positive effect of inequality on growth.

The current study, using the OLS estimation technique, also found an inverse relationship between growth rate and income inequality. The study was undertaken for a set of 87 countries using the data made available by the Fraser Institute, in the Economic Freedom of the World, 2004. The data was classified on the basis of growth rate and suitable dummies introduced. The coefficient of income gini (-0.02) was significant at the 5 percent level. Correlation between the income gini's and growth rates were computed, the results of which are given below:

| Average Annual Growth Rate of GDP per capita	Number of Countries	Correlation between Growth Rate and Income Inequality
Less than - 2 %	6	-0.08408
Between -2 and 0%	15	-0.21475
Between 0 to 2%	29	-0.49072
Between 2 to 4%	24	-0.13566
Greater than 4%	13	-0.08199

The empirical evidence for such an association incorporates the following socio-political channels:

i. Through social tensions and political instability that increase uncertainty and discourage investment (Alesina and Rodrik, 1994; Persson and Guido, 1994; Keefer and Knock, 2000; Alesina and Perotti, 1996). Further, greater income inequality implies that the poor have a greater temptation to engage in unproductive rent seeking activities that reduce the security of property rights (Benhabib and Rustichini, 1991; Fay, 1993) thereby lowering economic growth.

ii. Higher inequality necessitates greater redistribution, through taxation, that brings about distortions in the economic decisions, thereby discouraging investment and hampering growth (Persson and Guido, 1994; Alesina and Rodrik, 1994). Barro (1999) argues that inequality can have a negative effect on growth even if no redistribution of income occurs in the equilibrium.

iii. High initial income (or wealth) inequality leads to underinvestment in education (due to imperfect credit markets). This reduces average years of education (Deininger and Squire, 1998). Lower education level leads directly to

lower incomes, lower aggregate savings and investment, thereby retarding growth. However, reverse causality also exits, whereby schooling is seen as a social equalizer (Knight and Sabot, 1983; Park, 1996).

Erik Thorbecke and Chutatong Charumilind (2002) analyze the three channels through which income inequality affects growth. The three channels are depicted in Figure 1. The classical view, as discussed above states that a higher initial income inequality affects growth positively. This is shown in the top panel of Figure 1. The middle channel summarizes the mechanisms that have been proposed in the recent literature in linking higher initial income inequality with lower growth. In the bottom panel, an attempt is made to reconcile these conflicting approaches. It states that the classical approach holds at low income levels but not at later stages of development

Figure 1: Inequality and Growth
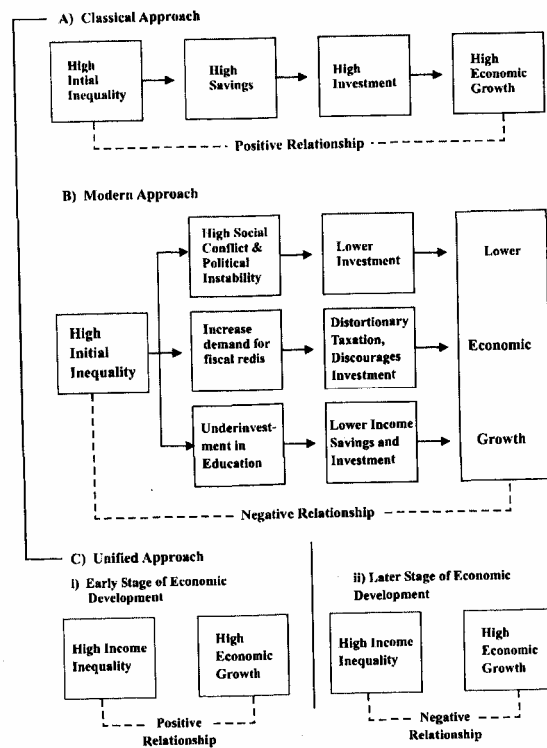
Section 2

Economic Freedom and Growth

The freedom to produce and trade- to earn an honest living- without undue interference is the essence of economic freedom. It includes the right to own, use and dispose property, right to proper and speedy resolution of disputes and enforcement of contracts, and overall protection of life and property so that everyone can earn their livelihood safely and peacefully. The Fraser Institute's economic freedom index (EFI) measures the degree of economic freedom in five major areas. They are:

- ◆   Size of Government: Expenditures, Taxes, and Enterprises
- ◆   Legal Structure and Security of Property Rights
- ◆   Access to Sound Money
- ◆   Freedom to Trade Internationally
- ◆   Regulation of Credit, Labor, and Business[1].

Each component is placed on a scale from 0 to 10 that reflects the distribution of the underlying data. The component ratings within each area are averaged to derive ratings for each of the five areas. In turn, the summary rating is the average of the five area ratings. The index is based completely on empirical data and does not include subjective judgment of the authors.

The economic literature highlights the importance of three alternative theories of growth. First, the neoclassical theory, based primarily on the work of Robert Solow (1956), argues that growth is a result of expansion in the supply of productive inputs and improvements in technology. According to this theory, investment in physical and human capital is the key to economic growth. Second, is the geographic and locational theory of growth (Sachs, 2001; Gallop, Sachs, and Mellinger, 1998; Diamond, 1997). According to this theory, climatic conditions and access to major markets are the primary determinants of growth. Third, is the institutional approach which stresses the importance of creating an institutional and policy environment conducive for the smooth operation of markets and realization of gains from trade and entrepreneurial activities (North, 1990; Hayek, 1945, 1960). Clearly, economists who argue that economic freedom is a key ingredient in the growth process fall into the institutionalist's camp. Many empirical studies have found a positive relation between economic freedom and growth (Barro, 1991; De Vanssay and Spindler, 1994; Gwartney etal, 1998; Ayal and Karras, 1998; Kneller et al 1999; Grubel, 1998; Hanke, 1997). On theoretical grounds, there are primarily three factors that make Tree economies grow more rapidly than those that are less free. They are:

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[1] Within the five major areas, 21 components are incorporated into the index but many of those components are themselves made up of several sub-components. Counting the various sub-components, the Economic Freedom of the World (EFW) index utilizes 38 distinct pieces of data.

- Competition
- Entrepreneurship, and
- Investment

In the final analysis, however, the relationship between free markets and growth is an empirical one. For instance, Carlsson and Lundstrom (2002), in their paper investigate which components of the economic freedom indices are important for growth and the direction of these effects. Based upon their analysis, they conclude that a number of economic freedom measures have a significant effect on growth of GDP. However, this does not mean that increasing economic freedom in general increases growth since some of the categories have a negative effect on growth. They find that, four of the significant economic freedom indices (as shown in Table 1) are positively related to growth, while two are negatively related. In their study, they find that increased freedom to trade with foreigners decreases the growth rate. Increased freedom in terms of lower government consumption and transfers has a positive or a negative impact on growth depending upon the *size of the government.* Consequently, they conclude that there is a hump shaped relation between government size and growth.

Table 1

Effect of Economic Freedom on Growth

(Summary Results)

	Economic Freedom variable	Sign of the Effect	Robustness
1.	Size of Government	Negative / Positive	Robust
2.	Economic Structure and use of markets	Positive	Non-Robust
3.	Monetary Policy and Price Stability	Insignificant	Non-Robust
4.	Freedom to use Alternative Currencies	Positive	Almost Robust
5.	Legal Structure and Security of Ownership	Positive	Robust
6.	Freedom to trade with Foreigners	Negative	Robust
7.	Freedom to exchange in Capital Markets	Positive	Non Robust

Figure 2 shows the growth rate of GDP per capita from 1980 to 2000, of countries with Economic Freedom of the World (EFW) rating of more than 7, between 5 and 7, and less than 5 (after adjustment for differences in initial income level, tropical location, and growth in human capital). The EFW 2004 states that the persistently free group achieved an average annual growth rate of 3.44 percent, compared to 1.67 percent for the

middle group, and 0.37 percent for the least free group[2].

Figure 2: Economic Freedom and Growth (Percent) of GDP Per Capita 1980-2000
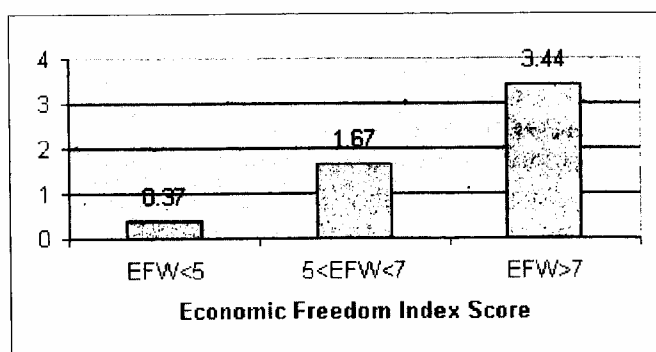
Our study estimated the correlation between the EF and the GDP per capita for the period 1975 to 2002, the results of which are given below:

Year	Correlation Between EF And GDP per capital
1975	0.469
1980	0.548
1985	0.616
1990	0.670
1995	0.657
2000	0.674
2001	0.654
2002	0.657

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[2] However, some economists have expressed concern that the observed correlation between the EFW variables and growth may, at least potentially, reflect reverse causality. The proponents of this view suggest that rather than economic freedom causing growth, the relationship may reflect a tendency of rapidly growing economies to liberalize.

Section 3

Econometric Analysis

A vast scholarly enterprise has arisen that is devoted to the study of income inequality. By Deininger and Squire's (1996) count, more than 2500 calculations of gini coefficients have been made across countries and time, with India having done it the maximum number of times. The gini coefficient is concerned with relative positions, and perfect income equality can be said to exist when it equals zero.

Policy Variables Included:

In trying to provide an answer to the question of how economic freedom relates to equality, we have come to the empirical study, which makes use of the regression analysis. In accordance with the availability of data, 37 countries have been included. In addition to the economic freedom variables two other independent variables viz. land gini and education gini have also been included in the regressions. The first controls for the influence of material wealth on equality, while the second controls for the influence of ability to read and write on equality. The illiteracy variable seems important since, say, the ability of poor people to make good use of economic development could be expected to be influenced by their degree of literacy. Data on land holdings are attractive for a number of reasons. First, possession of land could be a major determinant of individuals' productive capacity and their ability to invest, especially in agrarian economies where land is a major asset. Second, in contrast to income, the measurement of which is often associated with large errors, the distribution of land is relatively easily ascertained[3] and does not require assumptions regarding the mapping from income flows into stocks of assets. The paper therefore focuses on the roles of inequality in assets and economic freedom as determinants of income inequality.

Methodology and Data Sources:

Following World Bank's Classification the data is classified on the basis of both region and income. In this section we present the results based on income classification.

The four income classifications being:

> i) Low income countries

> ii) Middle income and lower middle income countries

> iii) Upper middle income countries, and

> iv) High income countries

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[3] Problems may arise from the fact that aggregate measures of land distribution do not adjust for soil quality or land improvements (e.g. irrigation), rarely account accurately for land held under communal tenure arrangements, and that -especially in regions such as Sub-Saharan Africa where population density is still relatively low-land may not have scarcity value.

Suitable dummies were introduced before running robust regressions (with high-income country as the reference classification). The cross sectional data on income gini, land gini and education gini pertain to 1990. The data for land gini and education gini was collected from the Word Bank site. Data on income inequalities was taken from the World Development Indicators, various issues. Data on various measures of economic freedom index are for 1985. This is because the impact of economic freedom on inequality is expected to take place only after a time lapse[4]. The data for this has been collected from the Fraser Institute's EFW, 2004.

As per the Fraser Institutes Economic Freedom Index (Gwartney and Lawson, 2004) countries with more government enterprises and government investment received lower ratings. When there were few State Owned Enterprises (SOEs) and government investment was generally less than 15 percent of total investment, countries were given a rating of 10. The rating scale adopted by them is given below:

The Rating Scale

Government Investment as Percent of Total Investment	EFW Rating
Less than 15%	10
Between 15 & 20%	8
Between 20 & 25%	7
Between 25 & 30%	6
Between 30 & 40%	4
Between 40 & 50%	2
Greater than 50%	0

Empirical Results:

The regression results presented in table 2 show that the major underlying factor causing accentuation of income inequalities is inequality of land rather than inequality of education. The coefficient of land gini is significant at the 1 percent level. The results show that an increase in the value of land gini by 1 percent makes the income gini go up by 0.23 percentage points. The coefficient of education gini

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[4] Economists believe that a lagged relationship also exist between economic freedom and growth. This is because even if economic freedom enhances growth, it will take time for higher levels of income to be achieved. Further, when only short time periods are considered, the linkage between economic freedom and growth may be weakened by other factors such as business cycles and changes in the world price of important export and import items. Thus, we look at the relationship between economic freedom and growth after a lapse of five years since decision makers will be willing to make major behavioral changes, if they are convinced that the change in policy direction is permanent rather than temporary.

remains non significant even at the 10 percent level[5]. The regression results also show that the aggregate measure of Economic Freedom Index (EFI) has no significant impact on equality. This is in contrast to the result obtained by Berggren. (1999) and Scully (2002)[6]. Berggren's results show that the level of economic freedom is negatively related to the level of equality, plausibly because of less redistribution. On the other hand, Scully has concluded the opposite. Scully's results reveal that economic freedom promotes both economic growth and equality. This means that nations that have more EF, have a more equal income distribution[7].

Table 2: Results of Regressions Using Aggregate Measure of Economic Freedom

(Dependent Variable: Income Inequality)

Independent Variables	Estimated Coefficient Values	Standard Errors	t Value
Constant	11.832	12.309	0.96
Land gini	0.235	0.062	3.763*
Education gini	-0.064	0.124	-0.518
EF,., Aggregate measure of EFI	1.396	1.520	0.918
Income Dummies			
D_1	5.765	4.68	1.232
D_2	13.074	3.72	3.511*
D_3	10.672	2.99	3.565*
No. of observations	**37**		
R-Squared	**58.33%**		

* Significant at the 1 percent level

D_1. Income dummy for Low-income countries

D_2 Income dummy for Middle income and lower middle income countries

D_3 Income dummy for Upper middle-income countries,

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[5] This result is in sharp contrast to the regression results based on regional classification. For this regression, the coefficient of education gini was significant while land gini was non significant. Economic freedom index continues to have a non significant impact on income inequality.

[6] The differences in results could be due to different sample of countries and the different data sources. For instance, in Berggren's study the summary measure of economic freedom is based on weights conjectured by participants at various Economic Freedom Conferences.

[7] Estimation of the structural model applied to the quintile income shares indicates that it does this by increasing the share of market income going to the two lowest income quintiles and lowering the share going to the highest income quintile.

As a next step we sub divide the aggregate measure of EFI into five sub groups of the index, and these less aggregated EFI measures have respectively been included into the same regression equation as that of Table 2. The reason for this is to see if it is possible to infer what kind of economic freedom is related to equality. The five sub groups of the index are:

i)   Size of government[8]

ii) Legal structure and security of property rights[9]

iii) Access to sound money[10]

iv) Freedom to trade internationally, and[11]

v)   Regulation of credit, labour and business[12]

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[8] When government spending increases relative to spending by individuals, households, and businesses, government decision-making is substituted for personal choice and economic freedom is reduced. The first two components address this issue. Government consumption as a share of total consumption and transfers and subsidies as a share of GDP are indicators of the size of government. When government consumption is a larger share of the total, political choice is substituted for private choice. Similarly, when governments tax some people in order to provide transfers to others, they reduce the freedom of individuals to keep what they earn. Thus, the greater the share of transfers and subsidies in an economy, the less is economic freedom. The third component in this area measures the extent to which countries use private rather than government enterprises to produce goods and services. Government firms play by rules that are different from those that private enterprises are subject to. They are not dependent on consumers for their revenue or on investors for risk capital. They often operate in protected markets. Thus, economic freedom is reduced as government enterprises produce a larger share of total output. The fourth component is based on the top marginal income-tax rate and the top marginal income and payroll tax rate and the income threshold at which both apply. High marginal tax rates that apply at relatively low income levels are also indicative of reliance upon government. Such rates deny individuals the fruits of their labor. Thus, countries with high marginal tax rates are rated lower. Taken together, the four components measure the degree of a country's reliance on personal choice and markets rather than government budgets and political decision-making. Therefore, countries with low levels of government spending as a share of the total, a smaller government enterprise sector, and lower marginal tax rates earn the highest ratings in this area.

[9] Security of property rights, protected by the rule of law, is essential to economic freedom. Freedom to exchange, for example, is meaningless if individuals do not have secure rights to property, including the fruits of their labor. Failure of a country's legal system to provide for the security of property rights, enforcement of contracts, and the mutually agreeable settlement of disputes will undermine the operation of a market-exchange system.

[10] In order to earn a high rating in this area, a country must follow policies and adopt institutions that lead to low (and stable) rates of inflation and avoid regulations that limit the use of alternative currencies should citizens want to use them.

[11] In order to get a high rating in this area, a country must have low tariffs, a trade sector larger than expected, efficient administration of customs, a freely convertible currency, and few controls on capital.

[12] In order to score high in this portion of the index, countries must allow markets to determine prices and refrain from regulatory activities that retard entry into business and increase the cost of producing products. They also must refrain from playing favorites-from using their power to extract financial

The desegregation of the EFI measure into five subgroups reveals that not all subgroups seem to be affecting equality. In fact, based on income classification, only *size of government,* as a measure of EF has a positive

Table 3: Results of Regressions including less aggregated

EFI Measures

EFI measured by size of government

(Dependent Variable: Income Inequality)

Independent Variables	Estimated Coefficient Values	Standard Errors	P Value
Constant	14.340	6.13	0.026**
Land gini	0.199	0.069	0.008*
Education gini	-0.037	0.106	0.733
EF $_{t-1}$	1.911	0.901	0.042**
Income Dummies			
D,	1.921	5.42	0.726
D$_2$	8.088	3.919	0.048**
D$_3$	7.020	3.636	0.063***
No. of observations	**37**		
R-Squared	**61.81%**		

*   Significant at the 1% level

* *   Significant at the 5% level

* * *   Significant at the 10% level

and significant impact on inequality[13]. As shown in Table 3, as the EFI of this subgroup

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payments and reward some businesses at the expense of others.

[13] When regression was run by dividing the original group of countries into regions, the results were different. For these regressions, 'regulation of credit, labour and business' was the only subgroup of economic freedom index that was significant. This gives rise to one tentative observation: that based on income classification the 'role of government' is more important for determining inequality, while on the basis of regional classification it is the 'Regulation of credit, labour and business' that has a greater effect, on inequality.

increases, in other words, as the *size of the government* reduces, the income inequality significantly increases. The regression coefficient is significant at the 5 percent level. The coefficient value of 1.9 signifies that a unit increase in economic freedom related to *size of government,* leads to a 1.9 percent increase in the income gini. This result has interesting policy implications that are addressed in the next section.

Since, *size of government* by itself is an aggregate measure of four subgroups viz:

- Government consumption[14]
- Transfers and subsidies
- Government investment in state-owned-enterprises (SOEs) and
- Tax rate

The effect of each of these disaggregates on income inequality was also analyzed. Amongst these four, 'transfers and subsidies[15]' and 'government investment in SOEs turned out to have a positive and significant affect on inequality. The regression results with government investment in SOEs as one the independent variables are given in Table 4.

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[14] The rating for this component is equal to: $(V_{max} - V_i) / (V_{max} - V_{min})$ multiplied by 10. The V_i is the country's actual government consumption as a proportion of total consumption, while the V_{max} and V_{min} are set at 40 and 6 respectively. Countries with a larger proportion of government expenditures received lower ratings. If the ratio of the countries government consumption to total consumption is close to the minimum value of this ratio during the 1990 base year, the country's rating will be close to 10. In contrast, if this ratio is close to the highest value during the base year, the rating will be close to zero.

[15] The rating for the component is equal to: $(V_{max} - V_i) / (V_{max} - V_{min})$ multiplied by 10. The V_i is the country's ratio of transfers and subsidies to **GDP**, while the V_{max} and V_{min} represent the maximum and minimum values of this component during the 1990 base year. The formula will generate lower ratings for countries with larger transfer sectors.

Table 4: Results of Regressions including less aggregated EFI Measures

EFI measured by share of output supplied by SOEs and government investment

as a share of total investment

Independent Variables	Estimated Coefficient Values	Standard Errors	t Value
Constant	13.53	7.08	1.91 ***
Land gini	0.235	0.07	3.52*
Education gini	-0.038	0.109	-0.36
EF_{t_1} As measured by govt, investment in SOEs	1.09	0.514	2.11*
Income Dummies			
D_1	8.38	4.16	2.01**
D_2	13.63	3.47	3.93*
D_3	11.29	3.24	3.48*
No. of observations	**37**		
R-Squared	**61.32%**		

*   Significant at the 1% level
**   Significant at the 5% level
***   Significant at the 10% level

The results are significant at the 5 percent level and imply that as the 'share of government investment as a percentage of total investment' decreases by 5 percent (i.e. the economic freedom index of this subgroup increases by 1 unit, say from 6 to 7), the income inequality goes up by 1.09 percentage point. The results can be further understood by stating that if one changes a policy variable in such a way that the EFI associated with it increases, and if this leads to higher inequality after 5 years, then this is because the redistributive system has been altered in favour of the rich. Thus increases in economic freedom, particularly through lower 'government transfers and subsidies', and lower 'government investment in SOE as a percent of total investment', are detrimental for equality.
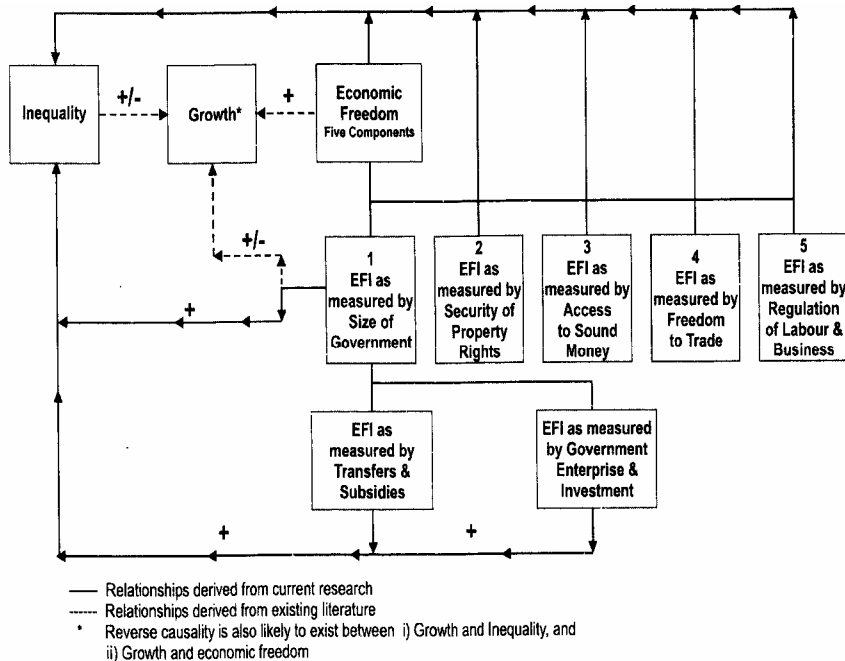
Conclusion and Policy Implications:

The Four Quadrant Approach

We begin this section by explaining figure 3 which provides a summary of the results obtained regarding the relationship between economic freedom, growth and inequality. It is clear from the flow chart that amongst the five components of economic freedom, only one i.e. the *size of the government,* has a significant adverse effect on equality. While enhancing the *size of government* definitely reduces inequality, its affect on growth is uncertain. The positive between inequality and economic freedom as measured by the *size of the government* implies that as the EF (associated with *size of government)* increases, the income inequality also increases. At this stage it is useful to keep it mind that an increase in EF implies a lower *size of* the government. Regarding the relationship between *size of* government and growth, various studies state an inverse 'U' shaped relationship between the two.

Fig 3 Relationship between economic freedom, growth and inequality

No Significant Effect

—— Relationships derived from current research
------ Relationships derived from existing literature
* Reverse causality is also likely to exist between i) Growth and Inequality, and
   ii) Growth and economic freedom

There is thus a growth maximizing optimal size of government and that successive increases in government spending contribute negatively to growth (Scully, 1989,

1995; Barro, 1990, 1991; Folster and Henrekson, 2001; Helms, 1985). Given this relationship, there are likely to be countries where the role of the government can be enhanced without adversely affecting growth. In such countries reducing the role of government by way of privatization of state owned enterprises (SOEs) may not necessarily be a good strategy[16].

It is of interest to mention here that during the 1980's the theory of market failure was overtaken by the theory of non market or bureaucratic failure (Stiglitz, 1989). The international community agreed and urged, particularly after the success of early privatization in the United Kingdom that governments shed their public enterprise burden, deregulate sectors formerly monopolized by the public sectors, and provide an enabling environment for the private sector to develop. Privatization thereafter has been widely promoted in the sphere of industries, services and agencies (Kay and Thompson, 1986; Kikery, Nellis and Shirley, 1992; Nellis and Kikery, 1989; Yarrow, 1999; Vickers and Yarrow, 1988). The privatization wave that swept the world was bound to have a significant effect on developing countries. During the period 1990 to 1998, more than USD 270 billion was collected through privatization proceeds in developing countries. Latin America and the Caribbean, Europe and Central Asia, and East Asia and the Pacific contributed to the largest share of privatization proceeds, accounting for 57 percent, 26 percent and 14 percent of total privatization revenues respectively. In South Asia a total of USD 10 billion was collected (over the period 1990-98) as privatization proceeds, out of which more than 70 percent came from privatization in India (World Bank, 2000; Kaur, 2003b, 2005). However, today, views concerning a smaller and more limited role of government which were held so strongly in the early 1980s are coming under question. Deregulation is no longer viewed as an unmitigated success. Scandals in the banking and securities industries have led to calls for greater regulatory surveillance. Therefore, once again we stand at the threshold of an era of increased government involvement. This indicates that both systems, private as well as public are marked by imperfections and that neither is perfect. Dreze and Sen (1989), in their study regarding the performance of developing countries over a certain period of time - not just in terms of growth in GNP but increasing living standards, say, increasing life expectancy - have specifically drawn attention to the role of government in the areas of health and education (Also refer to Sen, 2001).

Further amongst the subgroups of *size of government* as a measure of economic freedom, two of the subgroups - namely economic freedom as measured by *Transfers and Subsidies,* and *government investment as a proportion of total investment* also affects inequality positively. That is an increase in economic freedom of these components is associated with enhanced inequalities. The flow chart also reveals that the other measures of EF such as 'security of property rights', 'access to sound money', 'freedom to trade' and 'regulation of labour and business' do not have a significant effect on inequality.

Moreover, given that land inequality adversely impacts both growth (Deininger and Olinto, '1999') and income equality, necessitates the need for redistribution policies.

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[16] Provided the government investment as a proportion of total investment does not exceed 20 percent - assuming this to be the threshold limit beyond which the size of government adversely affects growth.

Redistribution requires an increase in the *size of the government.* However, by itself while increasing the *size of the government* necessarily reduces inequality, its impact on growth may be either positive or negative. This suggests that there could be countries where land redistribution (through increased role of government) could take place, without compromising on growth. Therefore, one needs to *re-assess* the role of government rather than necessarily reduce the same, to find what could be the optimal *size of the government* for attaining the twin objective of growth with equity. The relationship between land and income inequality, growth, EF and *size of government* is shown below in figure 4.

Figure 4: Relationship between Land and Income

Inequality, Growth, Economic Freedom and Size of

Government
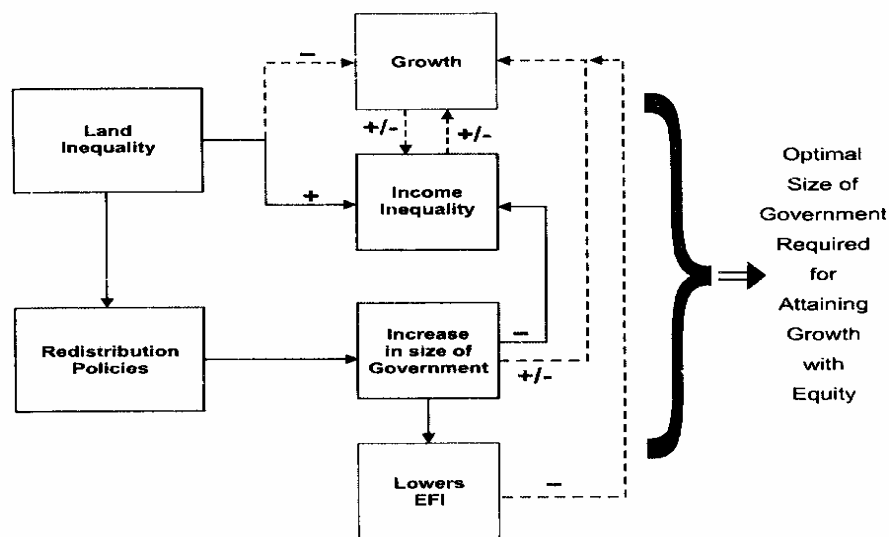
_____ Relationship derived from current research

------- Relationship derived from existing literature

*   Reverse causality is also likely to exist between few of the policy variables

In order to find the appropriate role of the government, as a next step we plot the income gini's and EFI (as measured by size of the government) for the year 1990, for various countries. This is shown in figure 5 (Also refer to figures given in Appendix).

Figure 5: Income gini versus Economic Freedom

(EF Measured by size of government)

Income gini

Economic Freedom

A look at the figure clearly shows that as the EF (measured by the *size of government)* increases the income inequalities also rise. Further, while increasing the *size of the government* necessarily reduces inequality, its impact on growth is ambiguous. In light of this relationship, taking note of the threshold effects of economic freedom on growth, the role of the government needs to be re assessed in attaining growth with equity. In order to do so, a four quadrant approach is introduced. The threshold limit of economic freedom, measured by number of government enterprises and government investment as percentage of total investment (EFG), is taken to be 7. This implies that countries with EFG of more than 7 have few SOEs other than those involved in energy and other such sectors and government investment is less than 20 percent (refer rating scale given earlier). It needs to be mentioned here that most of the studies estimating the threshold limits between government expenditure and growth do so for *government expenditure as percent of GDP*. The threshold level normally varies between 20 to 30 percent. Estimates on this measure are not available in the EFW. As a proxy, to determine the threshold limit we use *government investment as a percent of total investment[17]*. Depending upon which amongst the four quadrants (as shown in fig 6) a country belongs to, appropriate policies for privatization are suggested[18].

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[17] Berggren (1999) has estimated this threshold limit as 8.6. However, further research is needed in this area.

[18]For this purpose Economic Freedom as measured by size of the government is considered to be high if it has a rating of more than seven. Countries with income gini's lower than 30 are considered to be more equally distributed economies.

Quadrant 1.

In quadrant 1 are countries (such as Brazil, Panama, and Mexico) that have a high income gini along with a small size of the government. These countries can increase the size of their governments to facilitate growth with equity.

The government's role can be increased by way of:

- Enhancing transfers and subsidies. This will lead to a better redistribution of income and wealth, thereby reducing inequality.

- Increasing the government investment in crucial sectors. Since for these countries the government's investment as a proportion of total investment is less than 20 percent (i.e. an EFI greater than 7), a further increase in investment by about 5 percent is likely to promote growth, rather than adversely affect the same.
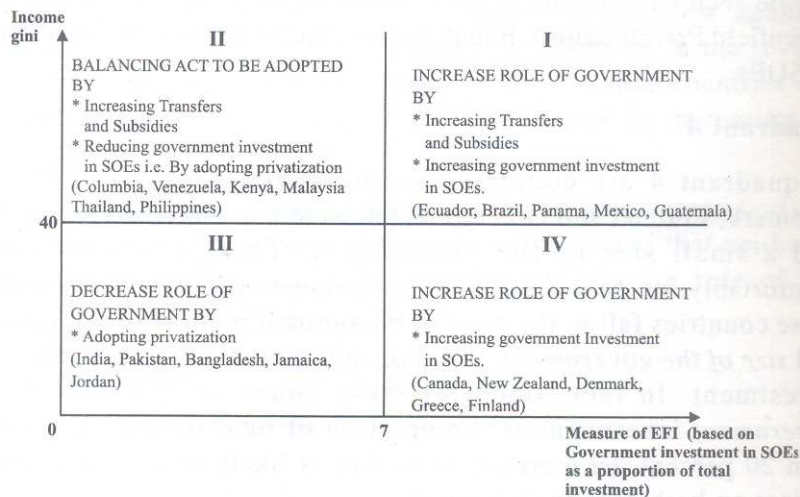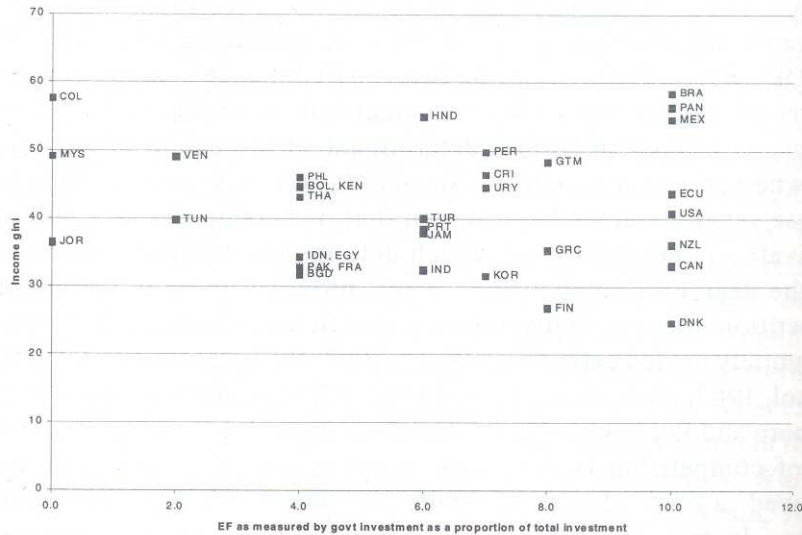
Quadrant 2

In quadrant 2 are countries (such as Venezuela, Bolivia, Kenya, Malaysia and Columbia) that have high income inequalities (Income gini greater than forty) along with a low measure of EFI based on 'government investment'. These countries already have a huge *size of government* and therefore advocating a further increase in its size to reduce inequality is not desirable. These countries are advised to adopt a balancing act whereby:

- SOEs are privatized. As shown in figure 6, in Columbia and Malaysia investment by government is more than 50 percent of the total investment. These countries can easily adopt disinvestment policies. This is desirable not necessarily on efficiency grounds, but due to the fact that the government has a greater role to play as a *facilitator* of goods and services rather than as a *producer* of goods and services.

- Increase 'Transfers and Subsidies' as a direct measure of redistribution between the rich and the poor. Further, since for these countries, the income inequalities are high, there is no doubt that the government has to intervene. In such situations given the interventionist role of the State, the important question is not just the *extent* but also the *quality* of such interventions.

Figure 6A and B: Policy Implications: The Four Quadrant Approach (2002)

Relationship between Income gini and EF as measured by Government Investment

Income gini (y-axis) plotted against EF as measured by govt investment as a proportion of total investment (x-axis)

	Income gini	
	II BALANCING ACT TO BE ADOPTED BY * Increasing Transfers and Subsidies * Reducing government investment in SOEs i.e. By adopting privatization (Columbia, Venezuela, Kenya, Malaysia Thailand, Philippines)	**I** INCREASE ROLE OF GOVERNMENT BY * Increasing Transfers and Subsidies * Increasing government investment in SOEs. (Ecuador, Brazil, Panama, Mexico, Guatemala)
	III DECREASE ROLE OF GOVERNMENT BY * Adopting privatization (India, Pakistan, Bangladesh, Jamaica, Jordan)	**IV** INCREASE ROLE OF GOVERNMENT BY * Increasing government Investment in SOEs. (Canada, New Zealand, Denmark, Greece, Finland)

0   7   Measure of EFI (based on Government investment in SOEs as a proportion of total investment)

Quadrant 3

In quadrant 3 are countries (such as Jordan, India, Pakistan, Egypt and Bangladesh) which have a comparatively low income gini along with a huge size of government. These countries are advised to follow a policy of privatization of SOEs. However, privatization is advocated not necessarily on the basis of enhancing efficiency of the SOEs, but on the assumption that it will enhance competition. In fact recent studies have shown competition in product and factor markets as a more important determinant of allocative efficiency, than whether a firm is publicly owned or privately owned. This is because several studies have shown that ownership *per se* - public or private - is not the factor, which determines efficiency. In fact, it is the degree of competition. Thus, provided there is sufficient competition, there is no discrepancy in efficiency between privately and publicly owned enterprises (Kaur,

2003; Williamson, 1969, 1970; Baumol, 1967; Alchian and Kessel 1962, Alchian and Demsetz, 1972; Furubotn and Pejuvich 1972). Therefore, in such enterprises (where lack of competition is the major problem), if efficiency is to be improved, a mere change of ownership may not lead to desirable results. In fact, just by enhancing competition (e.g. by allowing private sector to operate in areas reserved for the public sector i.e. Greenfield Privatization), it may be possible to increase the efficiency of SOEs

Quadrant 4

In quadrant 4 are countries (such as New Zealand, Canada, Denmark, Finland and Greece) which have a low income inequality and a small size of the government. These economies can comfortably increase the role of government. Since it is likely that these countries fall to the right of the optimal point between growth and *size of the government,* they are advised to increase government investment. In fact, since for these countries the *size of the government* investment as a proportion of total investment is less than 20 percent, an increase in its size is likely to have a positive impact on both growth and equity.

To conclude, while recent experience of growth in developing countries has been associated with accentuation in income inequalities in nations such as India, China and Bangladesh, an analysis of the factors underlying accentuation of inequalities has not received sufficient attention. The basic objective of the paper, therefore, has been to focus on the roles of inequality in education and land assets as determinants of income inequality and growth. The study, using cross country data, supplements this with a detailed analysis of how economic freedom influences equality outcomes. The econometric results provide evidence that increases in economic freedom, particularly through lower *size of the government* and initial land inequality, both affect income equality adversely. While increasing the *size of the government* necessarily reduces inequality, its impact on growth is ambiguous. In light of this relationship, taking note of the threshold effects of economic freedom on growth, the paper argues that the role of the government needs to be re assessed in attaining growth with equity. What clearly emerges is that adopting a uniform policy of privatization in the era of globalization may not necessarily be the best policy. While on I he one hand, for countries such as Columbia, Malaysia, Jordan and Venezuela, privatization may be a good strategy, for few other countries such as Brazil, Panama, Mexico, USA, New Zealand, Canada and Denmark the desired policy should be in the reverse direction. That is, given the threshold limits these countries can achieve the twin objective of growth with equity by increasing the investment in crucial SOEs.

Finally, one needs to remember that both systems - private as well as public- are marked by imperfections and that neither is perfect. It is in this context that the appropriate role of the government needs to be re assessed.
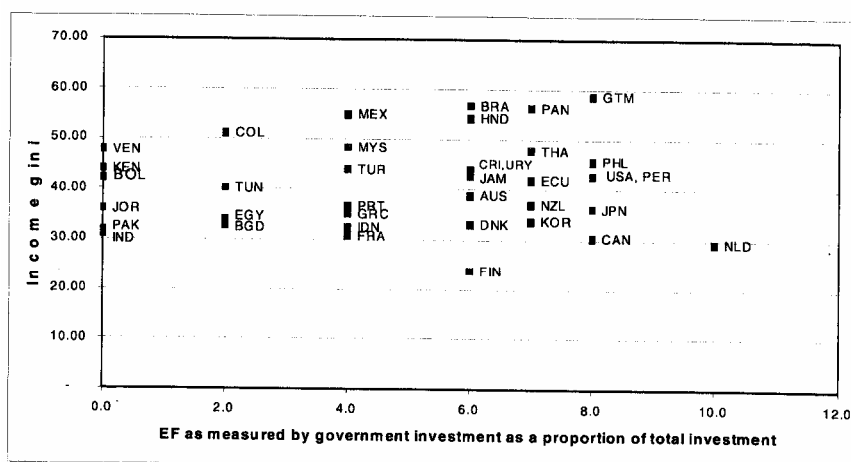
Appendix 1

Income Gini versus Economic Freedom (1990)

(EF measured by size of Transfers and Subsidies)
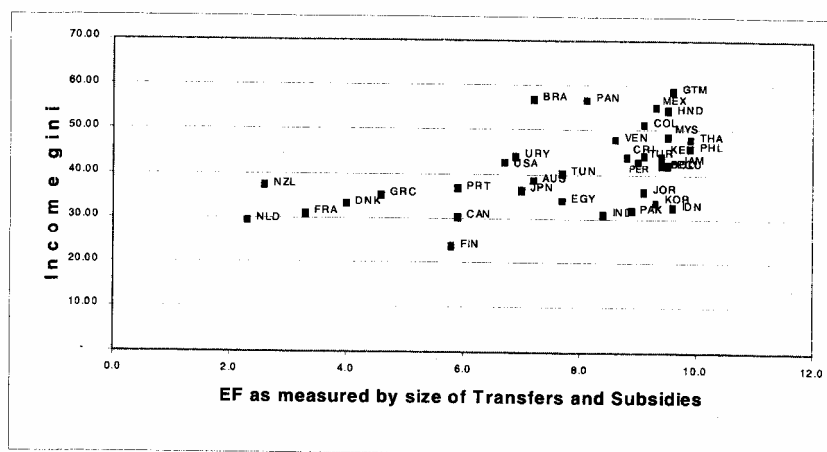
Income gini versus Economic Freedom (1990)

(EF measured by investment in SOEs as a proportion of total investment)

Appendix II

List of countries studied

Country Classification Based on Income	Country Name
1	Bangladesh
1	India
1	Indonesia
1	Kenya
1	Pakistan
2	Bolivia
2	Columbia
2	Costa Rica
2	Ecuador
2	Egypt
2	Gautemala
2	Honduras
2	Jamaica
2	Jordan
2	Malaysia
2	Mexico
2	Peru
2	Philippines
2	Thailand
2	Tunisia
2	Turkey
3	Brazil
3	Greece
3	Korea
3	Panama
3	Portugal
3	Uruguay
3	Venezuela
4	Australia
4	Canada
4	Denmark
4	Finland
4	France

4	Japan
4	Netherlands
4	New zeland
4	United States

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