University Avenue Undergraduate Journal of Economics

Volume 7 | Issue 1 Article 6

2002

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University Avenue
UNDERGRADUATE JOURNAL OF ECONOMICS

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I. Introduction

The concept of economic freedom is not a novel one in economic theory. Since the time of Adam Smith, if not before, economists have believed that the freedom to choose and supply resources, compete in business, trade with others, and secure property rights are central ingredients of economic progress (North and Thomas, 1973). Adam Smith (1776-1937) explained how the invisible hand of the marketplace enhanced the wealth of nations. David Ricardo (1821-1912) advocated free trade as a means of producing economic growth. Milton Friedman said, "I believe that free societies have arisen and persisted only because economic freedom is so much more productive economically than other methods controlling economic activity" (Foreword in Gwartney et al., 1996).

Although this fascinating concept has received a lot of attention, there is still no unique way of defining economic freedom. In fact, several definitions exist. The Heritage Foundation defines economic freedom as the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself. Their reasoning is as follows:

> "Throughout history, governments have exercised their power to place a wide array of constraints on economic activity. Many such constraints can be measured by assessing their impact on economic choices. Constraining economic choice interferes with the production, distribution, or consumption of goods and services (including, of course, labor services). One overriding reality characterizes the world: To varying degrees, governments realign through coercion the choices that ordinary people make with respect to their persons and property. Economic freedom is diminished when governments do this. Additionally, economic growth suffers to the extent that governments practice coercion in the marketplace"

(O'Driscoll & Beach 2001, Methodology, Heritage Foundation p. 35).

However, this is a fairly narrow definition of economic freedom. Governments are not the only ones responsible for losses in an individual's economic freedom. Jones and Stockman (1992) pointed out that constraints imposed by a third party on voluntary transactions will result in a loss of economic freedom. The most comprehensive definition of economic freedom is by Gwartney et al., (1996). Individuals have economic freedom when a) the property they acquire without the use of force, fraud, or theft is protected from physical invasions by others, and b) they are free to use, exchange, or give property to another as long as their actions do not violate the identical rights of others. This is the definition of economic freedom that this research paper is based upon.

Gwartney et al. (1996) argue that it is important to distinguish economic freedom from political and civil liberties. Economic freedom refers to the quality of free market institutions. The essence of economic freedom is protection of private property, freedom of individual choice, and voluntary exchange. It requires a limited government which focuses on the protection of private property rights and the enforcement of contracts. Political freedom, instead, refers to the participation of citizens in the political processes. It consists of two essential components: political rights and civil liberties. Political liberty is present when citizens are free to participate in political process, elections are fair and competitive, and alternative parties are allowed to participate freely. Civil liberty encompasses the freedom of the press and the right of individuals to organize, to hold alternative religious views, to receive a fair trial, and to express their views without fear of physical retaliation. Gwartney et al. argue that a country may be free in the political sense – that is, be highly democratic while the major civil liberties are protected – and

still adopt policies that conflict with economic freedom. For example, in 1999 China was ranked at 3.5 by the Heritage Foundation's Index of Economic Freedom whereas India, the world's second largest democracy, was ranked at 3.8, indicating less economic freedom in India than in China. This could be mainly due to a higher influx of foreign capital into China compared to India. Other examples of countries that have high civil liberty but lower economic freedom include Sweden, and Israel (Milner, W. 2000).

It is important to study economic freedom because it has been linked to economic growth and can be a basis for determining why some countries perform better than others. Why do some countries experience a higher rate of growth than others? Several empirical studies establish a positive correlation between economic freedom and economic growth. For example, Barro 1996, De Vanssay and Spindler 1994, Johnson and Sheehy 1995, Scully 1992, and DeHaan and Siermann 1998, all found a significant relationship between economic freedom and economic growth. Moreover, Johnson, Holmes and Kirkpatrick of the Heritage Foundation (1998, p. xv) asserted, "…Countries that have the most economic freedom also have higher rates of economic growth…" Gwartney, Lawson and Block (1996, p. 107) state, "The evidence is overwhelming – countries with more economic freedom tend to grow more rapidly than their counterparts adopting policies that restrict economic freedom."

There has also been a clear conclusion regarding the precedence of economic freedom over economic growth. Jac C. Heckelman's study published in the year 2000, established a causal relationship between economic freedom and economic growth. Using economic freedom measures developed by the Heritage Foundation and individual country growth rates, he established with the aid of Granger Causality tests, that a

relationship between freedom and growth exists. He also proved that for the most part, freedom precedes growth. DeHaan and Sturm (2000) also studied the relationship between economic freedom and growth using the measures developed by Gwartney et al. By means of sensitivity analysis, their main conclusion was found to be that greater economic freedom fosters greater economic growth. The findings of these studies are very relevant because they support that greater economic freedom leads to greater economic growth.

Merely studying the relationship between economic freedom and economic growth rates, however, is not enough. Whether the benefits of freedom and "increased economic growth rates" translate into something real and make a significant contribution to socio-economic welfare of people is a matter of critical concern. Today, one in five of the world's people - 1.2 billion - live on less than a dollar a day. It has been the experience of most of the countries that have seen positive growth rates that the number of people living in poverty has increased.

The United Nations Development Program (UNDP) has developed the Human Development Index (HDI), which ranks countries based on the level of human development they have attained. (The HDI is explained in depth in Section IV.A.2 of this paper). The link between economic growth and human development is neither automatic nor obvious. For example, in 1998-99, Moldova had the highest economic growth rate of 16.5% but its HDI score in 1999 was only 0.69, which means that it had more than 30% shortfall in human development. Another example is Turkmenistan, which had the second highest growth rate of 14.9%, but its HDI score was only 0.68. As a counter example, Canada had the highest HDI rating of 0.932 buts its growth rate in 1998-99 was

only 3.8%. Moreover, fifty-six percent of the developing world lacks the most basic sanitation, and more than 50 countries have lower real per capita incomes today than they did a decade ago. Where poverty is extreme and unending, human rights are eroded and the level of human capital deteriorates. Therefore, if progress does not benefit the citizens of the country, then it is not progress in concrete terms.

Thus, it is important to look beyond economic growth and focus on the status of the people. The criteria for judging whether people are better off can be clearly delineated. This research study assumes that people will be better off if there is greater equality of income, if per capita income increases, and if they have better access to education and health care through which they can lead a more fulfilling life. The World Health Organization defines health as a state of complete physical, mental, and social well being and not merely the absence of disease and infirmity. Education is a basic need because it improves skills, improves productivity, and lowers reproductivity by improving the status of women. Education also contributes to meeting other basic needs. If the behavioral changes from education can be built into other welfare programs dealing with health, nutrition, and sanitation, savings by a factor of ten to twenty on the cost of implementing these other programs can be attained (Streeten, 1981). Only when people's basic needs of health, education, and a reasonable standard of living are met, can they derive benefits from the country's increased growth rates. When there is greater equality of income, then the poor are equally able to benefit. Therefore, for the purpose of this paper, socio-economic development can be said to consist of access to resources, health, education, and greater income equality. The level of socio-economic development indicates the quality of life.

The aim of this paper is to formulate an index of economic freedom and determine if increased economic freedom leads to improvement in the quality of life. Since there are several factors that constitute the quality of life, each one is separately examined to see which aspect of socio-economic development is most affected by increased economic freedom. It is also important to determine if merely the level of freedom ascertains the level of socio-economic development or whether the pace of change in economic freedom also has some effect. Therefore, the pace of change in freedom will be considered as well.

Once a relationship between economic freedom and socio-economic development is established, this paper will then examine whether certain aspects of economic freedom are more influential than others in terms of impacting the quality of life. Economic freedom is a broad concept encompassing an array of factors: Trade, Fiscal burden of government, Government intervention in the economy, Monetary policy, Capital flows and foreign investment, Banking and finance, Wages and prices controls, Property Rights, Regulation, and Black market activity. Since it may not be feasible for policy makers to simultaneously address all these kinds of economic freedom, knowledge about which specific freedoms lead to betterment in the quality of life and by how much, could be very useful. Thus, the various factors of economic freedom will be grouped into sub-categories to identify whether certain kinds of economic freedom have a better impact on socio-economic development than others.

The paper is divided into several sections. Section II focuses on the significance of socio-economic development as a better indicator than economic growth. Section III explains the basis for the hypotheses of this paper. Section IV lays out the research

design and explains the data sets and the empirical model used to test the hypothesis. The results, conclusion, and policy implications are included in Sections V, VI, and VII respectively.

II. The Significance of Using Socio-Economic Development

As explained above, economic growth only gives an indication of the benefits of economic freedom. It does not indicate the beneficiaries. People will only experience a higher quality of life due to increased economic freedom if they have better access to health, education, and resources and if there is less disparity between the rich and the poor, i.e. when the level of socio-economic development rises. Adam Smith, "the father of economics", claimed that self-interest and the right to act on it promotes the general welfare of society (Esposto, 1999). This research paper aims to examine this claim.

There is a vast amount of literature and studies performed that show that economic growth is not the end-all and be-all of economic development. Focus needs to be on social indicators that depict the quality of life of people. The Basic Needs approach to development formulated by Paul Streeten attempts to provide opportunities for the full physical, mental, and social development of the human personality and then derives ways of meeting this objective. The emphasis is on ends rather than means and non-material needs are recognized. (Streeten, 1981). Thus, mere economic growth rates cannot be a proxy for the quality of life and cannot indicate that basic needs are met. This is explained as follows:

(1) The income or economic growth approach to measuring human progress deals only with the quantity of products but not with the appropriateness of those goods and services.

(2) Some basic needs can only be satisfied, or more effectively satisfied through public services (education, water, and sanitation), through subsidized goods and services, or through transfer payments.

(3) Consumers, both poor and rich are not always efficient in optimizing nutrition and health. Additional income can be spent on foods with lower nutritional value leading to a decrease in health.

(4) The manner in which additional income is earned may affect the quality of life adversely. Compared to others, certain production choices can increase income more but have a greater negative impact on human and environmental well being. One example of this is female employment. Although the mother's income can rise, breast-feeding may reduce, which decreases the nutrition of babies.

(5) Increased income does not guarantee a reduction in the mal-distribution of wealth within society or households.

Therefore, the Basic Needs Approach shows that the economic growth approach neglects the importance of non-material needs and ignores the significance of socio-economic development.

Similarly, the UNDP states in its Human Development Report (1999) that competitive markets may be the best guarantee of efficiency but not necessarily of equity. When the market goes too far in dominating social and political outcomes, the opportunities and rewards of a free market spread unequally and inequitably. The challenge for liberalization as determined by the UNDP is to incorporate the following elements:

Ethics: Less violation of human rights, not more.

Equity: Less disparity between nations, not more.

Inclusion: Less marginalization of people and countries, not more.

Human Security: Less instability of societies and less vulnerability of people, not more.

Sustainability: Less environmental destruction, not more.

Development: Less poverty and deprivation, not more.

If liberalization fails to incorporate the above elements, it will result in disparity and reduction in the level of socio-economic development.

Another essential component of socio-economic development is an equitable distribution of income and minimum disparity between the rich and the poor. Simon Kuznets (1955) introduced the famous inverted-U shape relationship between inequality and income, which states that the distribution of income first becomes more unequal as income increases before inequality starts to decrease with income (refer to Figure 1: Kuznet's curve). Several factors have been suggested in order to explain the Kuznets

curve. The movement of the labor force from agriculture and rural areas to the more modern urban and industrial sectors implies an increase in incomes for those who move but at the same time a more unequal distribution of total incomes. However, as more and more people move to urban areas the low paid rural jobs become relatively less important and inequality then decreases. The relevance of this explanation put forward by Simon Kuznets depends on the levels and changes in the inter sector income differential, inter-sector inequality differential and finally the proportion of the labor force that moves between sectors (Fields, 1980). The higher dispersion of earnings in many OECD and capital intensive countries is related to the relatively strong demand for skilled labor (due to capital-skill complementarity) and a more sluggish supply response, while at the same time trade and globalization more generally reduce demand for unskilled workers in these countries.

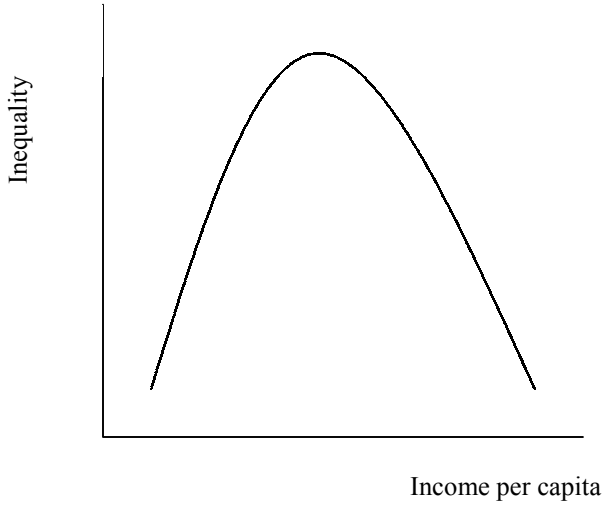

Figure 1. Kuznets' Curve
Source: www.worldbank.org

Thus, if one's main interest is in the quality of life, it is crucial to not rely solely on economic growth. Socio-economic development is a broader and more complex concept that is not captured in mere growth rates. To recapitulate, the ability to obtain basic needs of health, education and access to resources, as well as minimize income disparity determines the quality of life, and therefore, the level of socio-economic development.

III. Link Between Economic Freedom and Socio-Economic Development

This paper hypothesizes that increased economic freedom will lead to an increase in socio-economic development. A few reasons for this are:

1. Secure property rights and low taxes will encourage individuals to engage in productive activity and thus, improve their status and prosperity.

2. Greater freedom of exchange will expand the realization of gains derived from specialization and economies of scale. The Theory of Welfare Economics of International Trade (Murray C. Kemp and Henry Y. Wan, 1993) lays out a proposition asserting the gains from trade for a single free-trading country. This theory establishes that there are gains to be obtained from opening one's economy. The theory states that (p. 3):

> "If each member of a group of countries abandons autarky and trades freely within the group, and if simultaneously each member of the group eliminates all internal impediments to trade, then there exist schemes of lump sum compensation, one for each country, and an associated world free trade competitive equilibrium such that no individual, whatever his country of residence, is worse off than in autarky."

Expressed in more simplistic terms, free trade results in individuals being better off or no worse off than in autarky, given the appropriate recompensation schemes. This theory

supports the hypothesis that the increased economic freedom that comes with increased global trade and lifting of barriers, will lead to an increase in the welfare of people.

3. Freedom to enter and compete in markets will help promote efficiency in production and to direct resources towards their most highly valued uses. Market efficiency will result in higher gains for people and firms.

4. When there is greater freedom, entrepreneurship is encouraged. Moreover, entrepreneurial discovery of new and improved technologies, better methods of production, and opportunities that were previously overlooked is an important source of growth. (Schumpeter 1973, and Kirzner, 1997). This kind of growth and innovation encourages people to harness and invest in technology and increases their gains.

On another note, economic freedom can have two possible effects on income inequality. Greater freedom entails lower taxes, fewer regulations and hence, less redistribution of wealth, leading to greater income inequality. However income will increase due to greater freedom and the poor may be able to benefit from this. Berggren (1998) ran regressions in which income equality is the dependent variable and economic freedom, income levels, and growth are the independent variables. His theory is simple and appealing. He suggests that an increase in economic freedom, *ceteris paribus*, can induce higher equality, if the poor are able to take advantage of the freer economic setting, perhaps brought about through trade liberalization or the introduction of more secure property rights, to a larger degree than the rich.

Therefore, there appears to be a positive relationship between economic freedom and socio-economic development. An increase in economic freedom can lead to an improvement in the quality of life of the people and also a decrease in income inequality

between the rich and the poor. Therefore this paper will empirically establish a relationship between economic freedom and socio-economic development.

IV. Research Design

This paper will first formulate an index of economic freedom called the Freedom Index and examine the relationship between economic freedom and socio-economic development through regression analysis. Moreover, since there are several factors that constitute quality of life, i.e. health, access to resources, education and, equality of income, each factor is separately examined to see which aspect of socio-economic development is most affected by increased economic freedom. It is also important to determine if it is merely the level of freedom that ascertains the level of socio-economic development or whether the pace of change in economic freedom also has some effect. Therefore, the pace of change in freedom will be considered as well.

Since the Freedom Index is determined from a number of factors ranging from a diverse number of economic fields, it could be helpful to group freedoms in specific policy-oriented sub-categories. In fact, policy makers could be hard pressed to improve economic freedom across the board, only being able to affect a few factors at a time. Thus, knowing the effect that improving economic freedom in one particular area will have on socio-economic development will enable policy-makers to use economic freedom as a tool in development. The four major categories of economic freedom considered in this paper are International, Property Rights, Regulation, and Fiscal Burden, all of which will be explained in more depth in the following sub-section.

Finally, the relationship between income inequality and economic freedom is examined. Recall the theory underlying the Kuznets' curve, which gives a better understanding of the relationship between income levels and income inequality (refer to figure 1: Kuznets' curve). Since previous studies have shown that real GPD per capita increases with increased economic freedom, we could plot some measure of economic freedom on the x-axis instead of income per capita. Therefore, the Kuznets' hypothesis should also hold for the relationship between income inequality and freedom. The modified Kuznets' curve is represented in Figure 2 below.

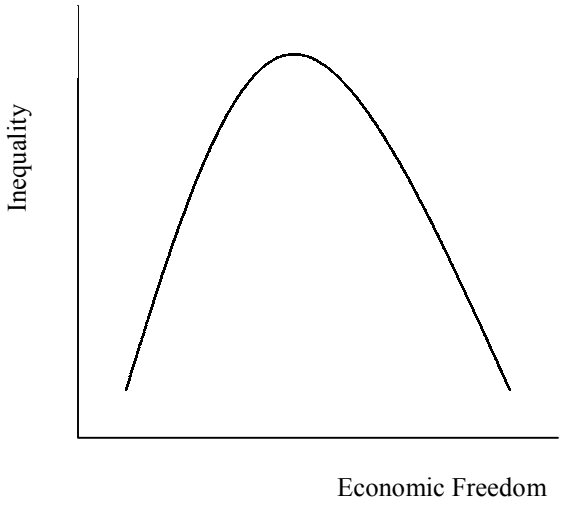

Figure 2. Modified Kuznets' Curve

As countries experience more and more freedom their level of inequality first rises and then falls. Some countries are at the first part of the Kuznets' curve whereas some that have been free and enjoying a high level of per capita income and greater equity for a few years are on the declining income inequality part of the curve.

Before presenting the actual regression equations, it is first necessary to discuss which measures will be used to capture economic freedom, human development and equality of income; the last two together constituting socio-economic development. The following sub-sections lay out a detailed explanation of the measures used, the data set, as well as the empirical model.

Measures Used

Index of Economic Freedom

To recapitulate, individuals have economic freedom when a) the property they acquire without the use of force, fraud, or theft is protected from physical invasions by others, and b) they are free to use, exchange, or give property to another as long as their actions do not violate the identical rights of others (Gwartney et al., 1996). The Freedom Index considered in this research paper is based on the raw data from the Heritage Foundation's Index of Economic Freedom. The Fraser Institute indices developed by Gwartney, etc. are quite similar to the Heritage Foundation indices, but this research study uses the raw data from the Heritage Foundation indices because of the following reasons:

(i) The Heritage index is annual whereas the Fraser index represents five year intervals. Since the other measure used in this study, the Human Development Index, is not published every year, a common year for the data was needed.

(ii) Heritage has not changed their methodology since the index was published and thus, the Heritage index is more consistent.

(iii) The Heritage variables are more policy oriented, in the sense that they are variables which governments can control and change (Heckelman, 2000). Some of the factors

included are trade policy, fiscal burden, black market etc. The Fraser Institute instead has seventeen factors that are more difficult to control from a policy perspective, an example being the category of takings and discrimination, which includes data on taxation, other forms of subsidies and transfer payments, and use of conscription to obtain military personnel by the government.

To measure economic freedom and rank each country, the Heritage Foundation's Freedom Index studies 50 independent economic variables. These variables fall into 10 broad categories, or factors, of economic freedom:

- Trade policy - tariff and non-tariff barriers, corruption in customs.
- Fiscal burden of government - income and corporate taxes, other taxes.
- Government intervention in the economy - government consumption and ownership.
- Monetary policy - average and current inflation.
- Capital flows and foreign investment - foreign investment code; restrictions on foreign ownership and investment; legal equality between foreign and domestic companies.
- Banking and finance - government ownership and regulation, restrictions on foreign banks.
- Wages and prices controls - minimum wage laws, government price controls, government subsidies that affect prices.
- Property rights -commercial code defining contracts, government expropriation of property, protection of private party, judicial delays and corruption.

- Regulation - licensing requirements, ease of obtaining licenses, environmental consumer, worker regulations, bureaucratic corruption.
- Black market activity - smuggling, size of black market activity.

Since it is not possible to know with a high degree of certainty which factors are more important than others for economic freedom, the Heritage Index of Economic Freedom treats the 10 factors as equally important to evaluating the level of economic freedom in any country. So, each country receives its overall economic freedom score based on the average of the 10 individual factor scores.

However, squeezing so much information into one index results in lost information (Caudill, Zanella, and Mixon 2000). Following this recommendation, this research paper uses the raw data of the Heritage Foundation Index to formulate a revised index of economic freedom. This new index of economic freedom is referred to as the "Freedom Index" and comprises of seven of the original ten factors found in the Heritage Index of economic freedom. In fact, the Freedom Index is calculated by averaging the seven individual freedom scores. It is this Freedom Index that is considered in all of the empirical work performed in this research study. Specifically, the seven factors included are: Trade Policy, Capital Flows and Investment, Property Rights, Banking and Finance, Internal Regulations, Wages and Price Controls, and Fiscal Burden.

The reasoning for the inclusion of these factors and the exclusion of the other three factors is laid out in the ensuing discussion.

1. Trade Policy: Trade Policy is a key factor to consider in measuring economic freedom since when free trade is impeded, people are not free to produce and voluntarily exchange their products. The principle of comparative advantage is then distorted and the individual's freedom is lost. The factors measured in trade policy are thus, average tariff rate, non-tariff barriers and corruption in the customs service.

2. Capital Flows: Restrictions on foreign investment, similarly, limit the inflow of capital and thus hamper economic freedom since fewer funds are available for economic expansion.

3. Property Rights: The ability to accumulate private property and use it without threat of seizure is the main motivating force of a market economy. Secure property rights give citizens the confidence to undertake commercial activities, save their income, and invest because they know that their income is safe from expropriation. This factor takes into account the rule of law, government protection of private property, considering past expropriations as well. It also analyzes the independence of the judiciary and the ability of individuals and businesses to enforce contracts. The higher the level of private property protection, the greater the economic freedom.

4. Banking and Finance: Banks provide services, credit, and funds that facilitate economic growth. The more banks are controlled the less able and free they are to carry out their activities. This variable measures government ownership of banks, restrictions on the ability of foreign banks to open branches, government influence over the allocation of credit and freedom to offer all types of financial services and securities.

5. Internal Regulation: Regulations and restrictions hinder entrepreneurship. Some regulations may be applied unfairly and when applied excessively, regulation leads to corruption. This factor measures licensing requirements to open a business, corruption within the bureaucracy, environmental, safety and health regulations, all other regulations that impose a burden on businesses.

6. Wages and Price Controls: In a free market economy market forces determine wages and prices, and allocate resources. Fredrik Hayek (1948) said that the true function of the price system was to serve as a mechanism for communicating information and this function is fulfilled imperfectly as prices grow rigid (O'Driscoll & Beach 2001). By mandating wages and price controls, economic activity, and hence economic freedom is restricted. This factor includes minimum wage laws, government price controls and subsidies.

7. Fiscal Burden of the Government: The issue of taxation is more complicated. The Heritage Foundation believes that when a government spends money (that it has acquired thorough taxation), it acquires resources and diverts them away from private choices and private goals. Taxes are harmful to economic activity because a tax essentially is a government imposed disincentive to perform the activity being taxed. Gwartney et al (1996) of the Fraser Institute argue (p. 18),

> "When a government plays favorites – when it takes from one group in order to make transfers to others or when it imposes the costs of public services disproportionately on various groups – the government becomes an agent of plunder. Such actions conflict with economic freedom. This is equally true whether the policies are undertaken by a dictatorial political leader or a legislative majority…. When governments tax income from one person to transfer it to another, they are denying individuals the fruit of their labors….High marginal tax rates discriminate against productive citizens and deny them the fruits of their labor. In essence, such rates seize wealth from taxpayers without providing them an additional increase in service."

However, both the Heritage Foundation and Gwartney are in agreement that there are some functions that only the government can perform. Every philosopher of economic freedom from Adam Smith to Milton Friedman grants specific, though limited, powers to governments or the state, including the power to tax, enforce laws, maintain order, and defend the nation (Rabushka 1998).The Heritage Foundation states that some minimal coercion by the government is necessary for the citizens of a nation to defend themselves, promote the evolution of a civil society, and enjoy the fruits of their labor. For example, citizens are taxed to provide revenue for the protection of person and property and for some public goods that can be conveniently supplied by the government. Gwartney et al. (1996) also believe this and they say, (p. 17)

> "There are two broad functions of government that are consistent with economic freedom: (1) protection of individuals and their property against invasions by intruders, both domestic and foreign, and (2) provision of a few select goods which have characteristics that make it difficult for private businesses and firms to produce and market…When governments move beyond these protective and productive functions into the provision of private goods, they restrict consumer choice and economic freedom."

It is hard to capture such subtle nuances into measures of taxation and government expenditures and decide whether they are excessive and are restricting economic freedom. The Heritage Foundation uses the top income tax and corporate tax rates and government expenditures as a percentage of GDP to capture the effect. Although the debate is ongoing and the measures certainly need to be refined, I believe that excessive taxation and excessive government expenditures have a crippling effect on economic freedom and this effect is too significant to be ignored.

The other three factors of the original Heritage Foundation's Index of Economic Freedom - black market activity, monetary policy, and government intervention in the

economy - are overlapping and their relevance to the concept of economic freedom is questionable. Below is a discussion of each of these factors and an explanation of why they are not included in the Freedom Index.

1. Black Market Activity: Black market activity is measured by the Transparency International's Corruption Perceptions index. An activity that is usually taxed heavily, or regulated heavily, or has been outlawed can become a black market activity. Governments that do not have strong protection of property rights, encourage black market activity. Robert Barro, a Harvard economist, has said that in some cases the existence of a black market is proof that entrepreneurship exists (O'Driscoll & Beach 2001). Since its measurement is abstract and its effect is already captured in the variables of taxation, regulation and property rights, this variable is ignored in constructing the index.

2. Government Intervention in the economy: A pro and con reasoning similar to the one used for evaluating fiscal burden can be used for government intervention in the economy. The Heritage Foundation's viewpoint is that greater government intervention – which consists of government consumption and ownership – restricts freedom by consuming scarce resources and by engaging in economic activity more inefficiently than private firms. However, in times of war and conflict when a government's duty is to protect its citizens' freedom, its intervention will be greater and will be reflected in the Heritage Foundation Index as lower economic freedom. A large public sector in wartime may be more compatible with maintaining individual freedom than a considerably smaller public sector in peacetime in which the bulk of the public spending does not reflect those legitimate tasks of the government that cannot be left to the private market

(Rabushka, Alvin 1998). This measure also overlaps with taxation. The more a government taxes, the more it consumes. For the sake of simplicity and clarity this factor is not included in this measure of economic freedom.

3. Monetary Policy: The relationship between monetary systems and economic freedom is not quite discernible. Inflation is believed to confiscate wealth and distort pricing. John Maynard Keynes observed that governments can confiscate secretly by a continuing process of inflation, a significant part of the wealth of citizens. (O'Driscoll & Beach, 2001). The supposition of the Heritage Index is that if a country uses monetary policy to stabilize its currency and control inflation, it is achieving economic freedom. However, if the price preferences of the majority of the citizenry are expressed, it becomes questionable whether an inflation rate of 8% say is any different from an inflation rate of 5% (DeHaan & Sturm, 2000). One can look at China's history as an example of this ambiguous relationship. China had virtually eliminated inflation between 1957 and 1978, maintaining almost perfectly stable prices, but its citizens conducted their economic affairs under a Soviet-style highly centralized, command-and-control economy that brought only modest increases in productivity and living standards (Rabushka, 1998). Since 1978, the government increased reliance on market forces to stimulate growth. As a result, prices were allowed to rise, reflecting supply and demand forces. Inflation even reached double digits. But the rising prices went along with greater economic freedom and thus, price stability can be a misleading indicator of economic freedom. This factor is also omitted from the new index.

Thus, the Freedom Index used in this research study consists of seven factors of freedom. All seven factors are given equal weight in the index and the composite

Freedom Index score is obtained by taking an average of all the seven individual freedom scores. The scales run from 1 to 5 where a score of 1 signifies an institutional or consistent set of policies that are most conducive to economic freedom, while a score of 5 signifies a set of policies that are least conducive. Therefore countries are considered to be **Free** if they have an average overall freedom index of 1.95 or less; **Mostly Free** with an average overall freedom index of 2.00 to 2.95; **Mostly Unfree** with an average overall freedom index of 3.00 to 3.95; and **Repressed** with an average overall freedom index of 4.00 or higher. These ranges are the same as those developed by the Heritage Foundation.

As stated previously, policy makers may be hard pressed to address all seven of these factors of economic freedom simultaneously. Since some of these factors are interrelated, however, the Freedom Index can be organized into four broad categories of freedom. The categories are International, Property Rights, Regulation, and Fiscal Burden of the government (refer to Table 1: Components of the Freedom Index). The category International encompasses freedom in trade as well as capital flows. This is because international trade and foreign capital flows most often go hand in hand, and it could be useful to know the effects of liberalizing a nation's trade and foreign investment policies on the quality of life. In addition, the category Regulation includes internal regulations, banking and finance, and wages and price controls. These three factors, all deal with restrictions and rules prescribed by the government and tend to move in the same direction. Therefore, the seven factors of economic freedom can be grouped into four categories to aid decision-making and facilitate policy reforms. See Table 1 below for a list of these components.

Table 1: Components of the Freedom Index

	Category	Measures
1	International	
	a) Trade Policy	Tariff and non-tariff barriers, corruption in customs
	b) Capital Flows& Foreign Investment	Restrictions legal equality between foreign and domestic capital
2	Property Rights	Commercial code defining contracts, government expropriation of property, protection of private party, Judicial delays and corruption.
3	Regulation	
	a)Banking & Finance	Government ownership and regulation, restrictions on foreign banks.
	b) Internal Regulation	Licensing requirements, environmental consumer, worker regulations, bureaucratic corruption
	c) Wages & Price Controls	Minimum wage laws, government price controls,
4	Fiscal Burden of Government	income and corporate taxes, government consumption

Human Development Index

The concept of socio-economic development is rich and complex. In a broad sense, one can say it consists of a better standard of living, better access to health and education and lower income disparity. For measuring the quality of life, the Human Development Index (HDI) published by the United Nations Development Program will be used. The HDI is a comprehensive index that encompasses three vital aspects of socio-economic development - health, education, and standard of living. Although it does not capture the effects of environmental damages, income inequality, and marginalization of countries, it is the most wide-ranging indicator available. Moreover, since it is

published by the UNDP, it is reliable. The HDI is based on three indices, all of which are given equal weight (Human Development Report 1998):

(1) Health, as measured by the life expectancy index;

(2) Educational attainment, as measured by an index evaluating a combination of adult literacy (two thirds weight) and the combined gross primary, secondary, and tertiary enrollment ratio (one thirds weight);

(3) Standard of living and access to resources, as measured by an index calculating real GPD per capita in terms of purchasing power parity $ (PPP$).

Income Inequality Measure

In order to establish a relationship between income inequality and economic freedom, a measure of income inequality is needed. For this purpose, the Gini coefficient, which is a relative measure of income inequality, is used. The Gini coefficient measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals and households within an economy deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative number of recipients, starting with the poorest individual or household. To simplify, it is found that the closer the Lorenz curve that measures income distribution is to the forty-five degree line, the more equal the distribution of income is said to be. The Gini coefficient measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. Thus a Gini coefficient of zero represents perfect equality, while a coefficient of 100 implies perfect inequality. The higher the Gini coefficient, the greater the income inequality.

Data

The data set used in this paper consists of a comprehensive sample of 152 countries which include a wide variety of high, middle and low-income countries. Data on the HDI as well as the Freedom Index is available for each of these countries (refer to Table I: Indices' Values in the appendix). The data for both the HDI and the Freedom Index are taken for the year 1999.

The value of the HDI as well as of its components (the life expectancy index, the education index, and the real GPD per capita index) range from 0 to 1; 1 signifying a high level of human development and 0 signifying an abysmally low level of human development. Canada is at the top of the HDI ranking with a score of 0.932, followed by Norway and the United States. Sierra Leone, with an HDI value of 0.254, is at the bottom, preceded by Niger and Ethiopia. Wide disparities in global human development persist. Canada's HDI value of 0.932 is more than three times that of Sierra Leone at 0.254. Thus Canada has a shortfall in human development of only about 7%, while Sierra Leone has one of 75%. Most countries are middle income countries and their HDI scores fall in the range 0.502 - 0.798.

The Freedom Index, as explained before, ranges from a score of 1 to 5; 1 signifying complete economic freedom and 5 suggesting a complete lack of economic freedom. In 1999, Hong Kong had the best Freedom Index with 1.14 and Iran had the worst at 4.64. Most countries lie in the Mostly Unfree category, i.e. Freedom Index values ranging from 3 to 3.95.

The Gini coefficient measuring income inequality is also a counter-intuitive index; scores of 0 signify a perfectly equitable income distribution and a score of 100

means that there is complete inequality of income. The country with the lowest income inequality is Belarus with a score of 21.7, followed by Hungary with 24.4 and Sweden at 25.0. The country experiencing the highest income inequality is Nicaragua with a Gini coefficient of 60.3. Most countries' Gini coefficients lie in the 30s. Unfortunately the Gini coefficient for a number of countries for a number was not available for the year 1999. In fact, the data is spread out over a number of years with most countries' data being collected in the late 1990's. Therefore, only the countries that have Gini coefficient values for the years 1995-1999 are included because these are the years for which the Freedom Index values are also available. This way, the Gini coefficient for each country and its Freedom Index value are taken for the same year. As a result, a restricted sample size of only 63 countries is considered. The data for the Gini coefficient is found in Table II in the appendix.

Empirical Model

The first empirical model to be considered will measure the effect of economic freedom on human development. Using regression analysis, relationships between economic freedom and the HDI will be established. Since, the HDI consists of three factors, it is essential to also study the individual effects. Regressions testing the effect of economic freedom on each individual component of the HDI will also be performed. Moreover, the effect of the pace of change in economic freedom on the quality of life will also be modeled. The last available year of data for economic freedom is 1995 so the change variable for economic freedom is taken over a span of four years. Refer to Tables I and II in the appendix for values of the indices used.

For the sake of simplicity and clarity in the empirical model, variables will be represented using the following notation. Let $\mathbf{HDI}_t$ be the HDI index at time t, representing the level of human development in time period t. Economic freedom in time period t is represented by $\mathbf{F}_t$ and the effect of pace of change in economic freedom is denoted by $\mathbf{F}_t - \mathbf{F}_{t-4}$. The measure of economic freedom used is the Freedom Index, explained earlier on in the paper, which comprises of seven factors.

A simple linear function is assumed to measure the relationship between **HDI** and **F** as well as $\mathbf{F}_t - \mathbf{F}_{t-4}$. The equation is as follows:

1) $\mathbf{HDI}_t = \mathbf{a} + \mathbf{b}\,\mathbf{F}_t + \mathbf{c}\,(\mathbf{F}_t - \mathbf{F}_{t-4})$

Equation 1 states that the level of human development in one time period is determined by the level of economic freedom in the same time period as well as the change in economic freedom over four years.

Equations 2, 3 and 4 are used to determine the effect of economic freedom on the separate components of HDI. The equations for the individual components of the HDI are similar to Equation 1.

2) $\mathbf{LIFE}_t = a + \mathbf{b}\,\mathbf{F}_t + \mathbf{c}\,(\mathbf{F}_t - \mathbf{F}_{t-4})$

3) $\mathbf{EDUC}_t = \mathbf{a} + \mathbf{b}\,\mathbf{F}_t + \mathbf{c}\,(\mathbf{F}_t - \mathbf{F}_{t-4})$

4) $\mathbf{GDP}_t = \mathbf{a} + \mathbf{b}\,\mathbf{F}_t + \mathbf{c}\,(\mathbf{F}_t - \mathbf{F}_{t-4})$

Equations 2, 3, and 4 determine which aspect of human development is most affected by economic freedom and the increase in freedom. Since $\mathbf{HDI}_t$ includes three indices – a life expectancy index, an education index, and a real GDP per capita index - Equations 2, 3 and 4 separate out the effects that economic freedom has on each of them in order to determine if life expectancy, education, as well as real GDP levels are increased by

increased economic freedom. This analysis is crucial in measuring different aspects of socio-economic development.

The interpretation of the coefficient **a** in equations 1 through 4 is important. Since **F** is a counter-intuitive index, with high values leading to greater restrictions on economic freedom, a value of zero for **F** will mean that there is complete economic freedom. Hence, **a** is expected to be positive, demonstrating that complete freedom will lead to great improvement in the level of human development. The coefficient **b** in equations 1 through 4 measures the effect of economic freedom on human development in the current time period. Since a lower level of the Freedom Index signifies greater economic freedom, the coefficient **b** will have a negative sign when greater economic freedom leads to improved quality of life and a positive sign when it leads to a lower quality of life. The coefficient **c** measures the effect of changes in economic freedom on the level of human development. This coefficient should have the same sign as **b**. Refer to Table 2 for the expected signs of the coefficients of the independent variables.

Table 2: Expected Signs of Coefficients

Variable	Type	Definition	Expected Sign for the Coefficient
HDI_t	Dependent	Human Development in 1999 measured by HDI in 1999	
$LIFE_t$	Dependent	Life Expectancy Index in 1999	

GDP_t	Dependent	Real GDP Purchasing Power Parity $ Index in 1999	
$EDUC_t$	Dependent	Education Index in 1999	
F_t	Independent	Freedom Index in 1999	- Since greater values of F mean lower economic freedom, a - ve sign implies that greater economic freedom is linked to greater quality of life.
$F_t - F_{t-4}$	Independent	Change in Freedom Index from 1999 to 1995 to measure how the pace of liberalization affects human development.	- This has the same sign as F_t.
a	Constant	Constant	+ Since complete freedom will mean high economic freedom, **a** should be +.

The next set of equations will determine which economic freedoms have the most effect on human development. Since the Freedom Index consists of seven individual policy variables, their individual effects as well as the effects of the four categories of economic freedom on human development will be determined (refer to Table 3: Variables of the Components of the Freedom Index). Firstly, the four categories of the index, namely, International, Fiscal Burden, Property Rights, and Regulation as well as their change variables are regressed against HDI. Next, the effect on human development of all seven components as well as their change variables is analyzed.

Table 3: Variables of the Components of the Freedom Index.

Variable	***Measuring freedom in :***
Trade99	Trade Policy

Flow99	Foreign Investment
Ir99	Internal Regulation
Bank99	Banking Regulation
Wage99	Wages and Price Controls
Prop99	Property Rights
Fisc99	Fiscal Burden
Composite Variables	
Intl99	Trade & Foreign Investment
Regu99	Internal, banking regulations & wages and price controls

The equations using these variables are similar to Equation 1, which related $\mathbf{HDI}_t$ to $\mathbf{F}_t$ in a linear equation form. Equation 5 analyzes the four categories of the Freedom Index while Equation 6 uses all seven components of the Freedom Index.

5) $\mathbf{HDI}_t = \mathbf{a} + \mathbf{b_1 intl_{99}} + \mathbf{b_2 regu}_{99} + \mathbf{b_3 prop}_{99} + \mathbf{b_4 fisc}_{99} + \mathbf{c_1 (intl}_{99} - \mathbf{intl}_{95}) + \mathbf{c_2 (regu}_{99} - \mathbf{regu}_{95}) + \mathbf{c_3 (prop}_{99} - \mathbf{prop}_{95}) + \mathbf{c_4 (fisc}_{99} - \mathbf{fisc_{95}})$

6) $\mathbf{HDI}_t = \mathbf{a} + \mathbf{b_1 trade_{99}} + \mathbf{b_2 flow}_{99} + \mathbf{b_3 ir}_{99} + \mathbf{b_4 bank}_{99} + \mathbf{b_5 wage}_{99} + \mathbf{b_6 prop}_{99} + \mathbf{b_7 fisc}_{99} + \mathbf{c_1 (trade}_{99} - \mathbf{trade}_{95}) + \mathbf{c_2 (flow}_{99} - \mathbf{flow}_{95}) + \mathbf{c_3 (ir}_{99} - \mathbf{ir}_{95}) + \mathbf{c_4 (bank}_{99} - \mathbf{bank}_{95}) + \mathbf{c_5 (wage}_{99} - \mathbf{wage}_{95}) + \mathbf{c_6 (prop}_{99} - \mathbf{prop}_{95}) + \mathbf{c_7 (fisc}_{99} - \mathbf{fisc_{95}})$

If an increase in a specific freedom or category of economic freedom increases the level of human development, then the coefficient of the independent variable will be negative. If an increase in a specific economic freedom or a category of freedom leads to a decrease in the HDI, then the coefficient will be positive.

Finally, the effect of economic freedom on income inequality is determined (Refer to Table III in the appendix for the data). Recall that socio-economic development is captured by two indices: the Human Development Index (HDI), which measures health, education and access to resources, and the Gini coefficient, which measures income inequality. Since the theory of the Kuznets' curve suggests a non-linear relationship between the Gini coefficient and economic freedom, a polynomial regression will be performed. As mentioned earlier, due to data availability constraints the Gini coefficients for the various countries are measured in different years. Therefore, each country's Gini coefficient will be matched with that time period's Freedom Index. This empirical methodology was chosen after careful evaluation of other methods, including taking dummy time variables. Fundamentally, it seemed to be the most precise way of getting at the nature of the relationship between income inequality and economic freedom. Equation 7 will determine the effect of economic freedom on income inequality, identifying whether economies become more equitable as freedom increases.

7) $\mathbf{GINI}_t = \mathbf{a} + \mathbf{b}\,\mathbf{F}_t + \mathbf{c}\,\mathbf{F}^2_t$

The interpretation of the coefficients in Equation 7 is a little more complex. The coefficient $\mathbf{GINI}_t$, like $\mathbf{F}_t$ is a counter-intuitive measure, with low values signifying greater income equality and higher values representing unequal income distributions. Moreover, the coefficient **c** identifies the curvature of the polynomial function. Since theory predicts an inverted U-shaped curve, **c** is expected to have a negative sign. The slope of the curve is $\mathbf{b} + \mathbf{2c}\,\mathbf{F}_t$, so if **b** is positive and greater than $|2c\,F_t|$ the curve will increase, and if **b** is less than $|2c\,F_t|$, the curve will decrease.

VI. Results

The results and findings for all the equations are covered in this section. After Equation 1 is analyzed and a positive relationship between economic freedom and socio-economic development is established, then the individual components of human development, i.e. health, education and real GPD per capita are evaluated. The results for the composite Freedom Index are explained, and subsequently, the results of the separate components on the Freedom Index are presented. The regression results for the Gini coefficient are also described.

Results for the Freedom Index

The Pearson coefficient of correlation between human development in time t and economic freedom in time t is equal to - 0.633 and is significant at 0.01 level. Since low values of **F** express greater economic freedom and vice versa, the correlation coefficient shows that greater economic freedom and greater quality of life have a positive, direct relationship. The scatter diagram plotted between the two variables $\mathbf{HDI_t}$ and $\mathbf{F_t}$ also supports this result. $\mathbf{HDI_t}$ is plotted on the Y-axis and $\mathbf{F_t}$ is plotted on the X-axis.

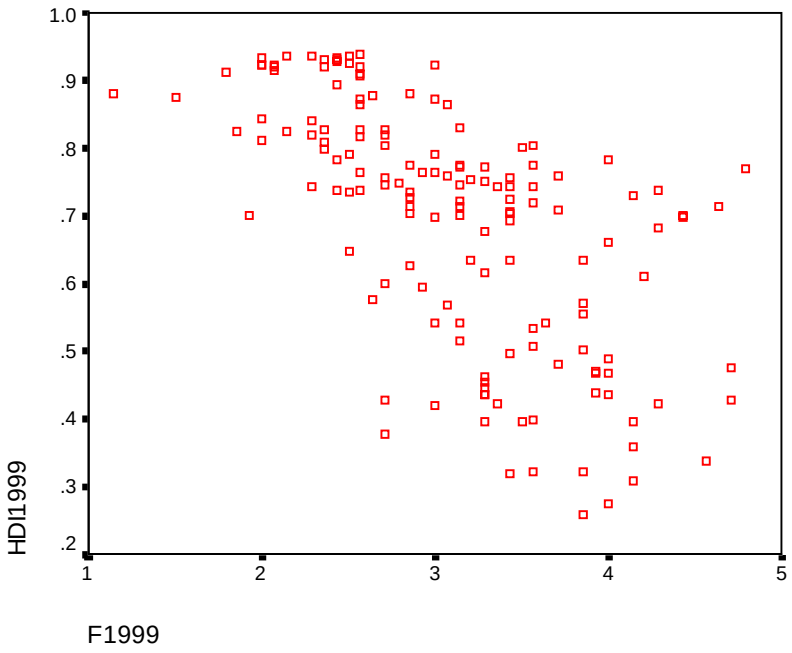

Figure 3. Scatter Diagram showing Correlation between Economic freedom in 1999 and Socio-Economic Development in 1999.

The regression analysis results of Equation 1 (**$HDI_t = a + b F_t + c (F_t - F_{t-4})$**) are given below in the following table.

Table 4: Results of Equation 1.
$R^2 = 0.393$

Independent Variable	**Coefficient**	**T–statistic**	**Significance**
a (constant)	1.193 21.390		0.00
F_t	-0.161	-9.003	0.00
$F_t - F_{t-4}$	0.0418	0.889	0.376

Dependent variable: **HDI_t**

The coefficient of **F_t** has the expected sign and is highly significant at the 1% level in its relationship with human development. The change variable, **$F_t - F_{t-4}$**, seems to predict that as economic freedom increases faster, the human development suffers. However, this variable is not significant, and does not influence the main result that

greater economic freedom is related to greater socio-economic development. Thus it seems that the level of freedom matters, but not the pace of change. The coefficient of $\mathbf{F_t}$ indicates that a 1 unit increase in economic freedom produces a 0.161 increase in the quality of life(refer to Table 4: Results of Equation 1). Since the value of HDI ranges from 0 to 1, an increase of 0.161 is a significant increase. Countries that improve their economic freedom can see substantial increases in their level of human development.

The regression analysis was also carried out separately for the individual components of $\mathbf{HDI_t}$, i.e. the Life Expectancy Index, the Education Index and the Real GDP per capita PPP$ Index. These results are presented below in Table 5.

Table 5: Regression Results for Equations 2, 3, and 4

Dependent Variable	**R^2**	**Independent variables**	**Coefficient**	**T-statistic**	**Significance**
$LIFE_t$	0.309	a	1.147	18.404	0.00
		F_t	-0.150	-7.495	0.00
		$F_t - F_{t-4}$	0.04320	-0.928	0.413
$EDUC_t$	0.300	a	1.222	18.526	0.00
		F_t	-0.151	-7.107	0.00
		$F_t - F_{t-4}$	-0.007465	-0.134	0.894
GDP_t	0.429	a	1.207	20.873	0.00
		F_t	-0.183	-9.826	0.00
		$F_t - F_{t-4}$	0.08883	1.820	0.071

For these regressions, the constant **a** and the coefficient of $\mathbf{F_t}$, all, have the expected sign, and were found to be significant for each of the equations. For Life Expectancy, an increase in economic freedom by 1 unit increases the life expectancy index by 0.150. For Education, an increase in economic freedom by 1 unit increases the education index by 0.151. For Real GDP PPP$, an increase in economic freedom by 1 unit increases the real GDP index by 0.183. Again, since the values of these indices range

from 0 to 1, these are substantial increases. Real GDP per capita has the highest increase of 0.183 when countries improve their level of economic freedom. The change variable, $\mathbf{F_t - F_{t-4}}$, however, was not significant although for Education, interestingly, it had the predicted sign. One can therefore infer that the level of freedom matters but not the pace. This, though, could be due to the fact that the change variable was only taken for a span of four years during which freedom indices do not change much. For future research, a more extended span might give different results.

Equation 4 had the highest R^2. The Real GDP per Capita Index in terms of PPP$ is the most highly linked to economic freedom (refer to Table 5: Regression Results for Equations 2, 3, and 4). The Education Index and the Life Expectancy Index seem to be equally affected by economic freedom.

Results of the Components of Economic Freedom

Firstly, a regression is run using the four categories of economic freedom (refer to Equation 5: $\mathbf{HDI_t = a + b_1 intl_{99} + b_2 regu_{99} + b_3 prop_{99} + b_4 fisc_{99} + c_1 (intl_{99} - intl_{95}) + c_2 (regu_{99} - regu_{95}) + c_3 (prop_{99} - prop_{95}) + c_4 (fisc_{99} - fisc_{95})}$). The results are described below.

Table 6: Regression Analysis of Four Categories of Economic Freedom
$R^2 = 0.562$

Independent Variable	Coefficient	T–statistic	Significance
a (constant)	0.93	14.718	0 ***
Fiscal99	0.0463	3.570	0.001***
Prop99	-0.0560	-3.283	0.001***
Intl99	-0.0554	-2.903	0.004***
Regu99	-196	-0.767	0.444

$fisc_{99} - fisc_{95}$	0.0143	0.874	0.384
$prop_{99} - prop_{95}$	-0.0157	-0.693	0.49
$intl_{99} - intl_{95}$	0.0154	0.685	0.495
$regu_{99} - regu_{95}$	-0.0123	-0.350	0.727

*** Significant at 1% level

Dependent variable: HDI_t

It is important to note that all the change variables are not significant. Once again, it seems that it is the level of freedom that matters and not the pace of change. In addition, out of the four component variables of International, Property Rights, Fiscal Burden and Regulation, only Regulation is not significant. The other three variables are all significant at the 0.01 level. In fact, Property Rights and International are directly and positively related to human development. An increase in economic freedom in property rights, trade, or capital flows is accompanied by an increase in the HDI. Recall that an increase in economic freedom in the category of fiscal burden means that there is less taxation and less government consumption. This category is negatively related to HDI, which means that as countries tax less, the level of human development declines. This could be explained by the fact that one of the functions of taxation policies is the redistribution of wealth. Governments tax progressively and aim to redistribute wealth. If they are not able to do this, then the level of human development declines.

Next, a similar regression is run on all the individual seven components of economic freedom (refer to Equation 6: $\mathbf{HDI_t = a + b_1 trade_{99} + b_2 flow_{99} + b_3 ir_{99} + b_4 bank_{99} + b_5 wage_{99} + b_6 prop_{99} + b_7 fisc_{99} + c_1 (trade_{99} - trade_{95}) + c_2 (flow_{99} - flow_{95}) + c_3 (ir_{99} - ir_{95}) + c_4 (bank_{99} - bank_{95}) + c_5 (wage_{99} - wage_{95}) + c_6 (prop_{99} - prop_{95}) + c_7 (fisc_{99} - fisc_{95})}$). These results are described below in Table 7.

Table 7: Regression Analysis of Seven Components of Economic Freedom

$R^2 = 0.604$

Independent Variable	Coefficient	T–statistic	Significance	
a (Constant)	0.9464	14.956	0.000	***
FISCAL99	0.0511	3.952	0.000	***
PROP99	-0.0326	-1.772	0.079	*
TRADE99	-0.0431	-3.384	0.001	***
FLOW99	-0.0104	-0.606	0.546	
IR99	-0.0551	-2.652	0.009	***
BANK99	-0.0106	-0.586	0.559	
WAGE99	0.0233	1.147	0.254	
$fisc_{99}$ - $fisc_{95}$	-0.0178	-0.798	0.426	
$prop_{99}$ - $prop_{95}$	0.0097	0.604	0.547	
$trade_{99}$ - $trade_{95}$	0.0101	0.768	0.444	
$flow_{99}$ - $flow_{95}$	-0.0034	-0.132	0.895	
ir_{99} – ir_{95}	-0.0237	-1.009	0.315	
$bank_{99}$ - $bank_{95}$	0.0124	0.527	0.599	
$wage_{99}$ - $wage_{95}$	-0.0039	-0.136	0.892	

*** Significant at 1% level

* Significant at 10% level

Dependent variable: HDI_t

This regression yields the highest R^2. Please note that the change variables are still all not significant. In addition, out of the seven individual components of economic freedom, only the four variables Trade, Property Rights, Fiscal Burden, and Internal Regulation are significant. Trade, Property Rights, and Internal Regulation are in fact positively related to human development. Therefore, as a country trades more with the rest of the world, as it improves its protection of property rights and decreases its licensing requirements making markets more accessible to entrepreneurs, the quality of life of the people improves. Fiscal Burden of the government on the other hand, is negatively related to

HDI. This has been explained above (refer to Table 6: Regression Analysis of Four Categories of Economic Freedom).

Recall from Table 6 that although the entire category of regulation had the predicted sign, i.e. more regulation means lower HDI, it was not significant. In Equation 6, instead, Regulation was spilt up into its individual three components of a) internal regulation dealing with licensing requirements and impediments to entrepreneurship, b) banking and finance restrictions on foreign ownership of banks etc., and c) wages and price controls dealing with fixed wages, prices and subsidies. In this case, the factor internal regulation was highly significant and had the predicted sign. Increased internal regulation impedes entrepreneurship and growth and leads to decreased human development. The other two components though, were not significant.

Testing for multi-collinearity revealed that internal regulations, wages and price controls, and banking and finance, are all correlated with each other. This might explain why only the factor internal regulation is significant. In the future, one should take this into account and consider refining the measures. One should also note that the coefficient for the component wages and price controls did not have the expected sign. One could infer that that less freedom in wages and price controls, (minimum wage laws, price ceilings and subsidies), contributes to greater human development by its ability to redistribute wealth and make people economically better off.

Results of the Relationship between Economic Freedom and the Gini Coefficient

Regression analysis of the economic freedom on the Gini coefficient was performed using a non-linear equation (refer to Equation 7). Recall that the interpretation of the theory of the Kuznets' curve gives expectations of finding an inverted U-shaped relationship between economic freedom and income inequality.

Unfortunately, there are data constraints with the Gini coefficient in the sense that it is not calculated in the same year for all the countries. Moreover, data is available for only 63 countries during the years 1995-1999. Since the values of the Freedom Index can be obtained only as far back in time as 1995, the sample size is much more restricted than it would have been if more recent Gini coefficient data were available for all the countries. Therefore, for each country in the sample set, the Gini coefficients for the years 1995-1999 are matched with the same time period's Freedom Index values. For this reason, the change variable can no longer be considered.

A scatter diagram plotting the data points of the Gini coefficient on the Y-axis and the Freedom Index on the X-axis is provided below.

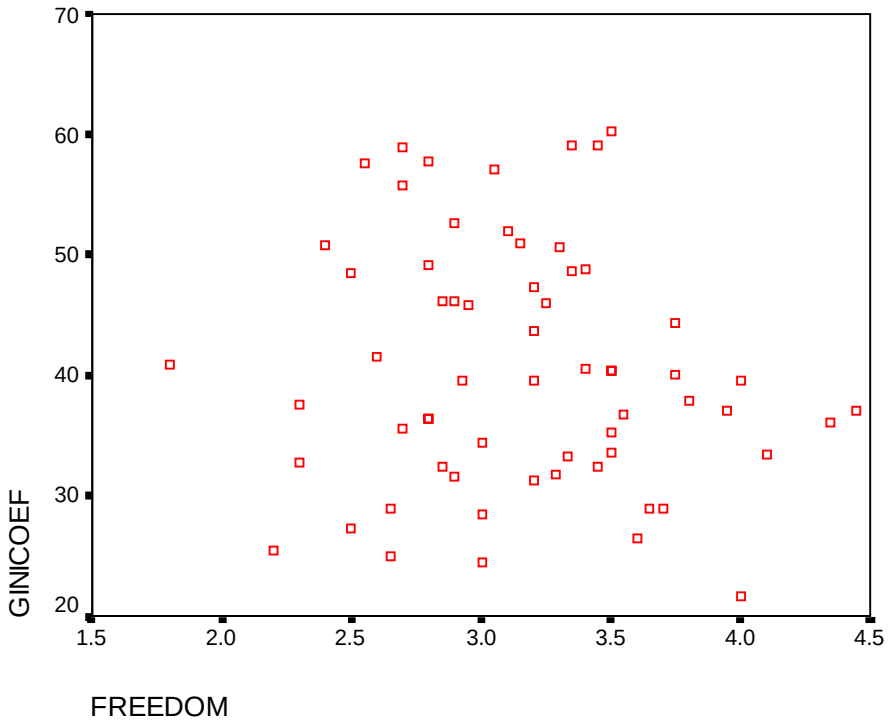

Figure 4. Scatter Diagram between the Gini coefficient and the Freedom Index

The results from the regression analysis of Equation 7 ($\mathbf{GINI}_t = \mathbf{a} + \mathbf{b}\,\mathbf{F}_t + \mathbf{c}\,\mathbf{F}^2_t$) are given below in Table 8.

Table 8: Results of the Gini Coefficient and the Freedom Index.

$R^2 = 0.057$

Independent Variable	**Coefficients**	**T-Statistic**	**Significance**
a(Constant)	-4.977	-.150	.881
$\mathbf{F}_t$	31.824	1.519	.134
$\mathbf{F}_t^2$	-5.357	-1.639	.107 *

Dependent Variable: $GINI_t$

Significant at the 10% level under a 1-tailed test

The coefficient of the square of Freedom, $\mathbf{F}_t^2$, has the predicted sign. The interpretation of this coefficient is very important and reveals the inverted U-shaped relationship between income inequality and economic freedom. Since this coefficient is negative, the curve has an inverted U-shape. However, the coefficient of $\mathbf{F}_t$ is borderline insignificant whereas the coefficient of the squared term, $\mathbf{F}_t^2$, is significant at the 10% level, given a one-tailed test. The reason for this borderline insignificance could be because of having insufficient data points. The theory suggests an inverted U-shaped curve and the coefficient of the squared term has the right sign and is slightly significant. If more data points were available, a more clearly defined relationship between economic freedom and income inequality could emerge. There is evidently tremendous scope for further research in this area.

VI. Conclusion

The empirical results support the hypothesis that increased economic freedom leads to an improvement in the quality of life. The coefficient of the freedom index is significant in all 6 equations that use the Human Development Index to capture the level of socio-economic development. On the other hand, the coefficient for the change variable is not statistically significant and hence, cannot be used to draw any policy implications. One possible result may be that the level is important but not the pace of change. However, one cannot conclude this with full certainty.

To sum up, the Human Development Index increases by 0.161 with an increase by one unit in the level of economic freedom. Moreover, all the three components of the HDI, i.e. health of the population, captured by the Life Expectancy index, educational attainment, captured by an index evaluating a combination of literacy rates and school enrollment, and access to resources, as measured by the Real GDP per Capita (PPP$) index, are positively affected by an increase in economic freedom. For life expectancy, an increase in economic freedom by 1 unit increases the Life Expectancy Index by over 0.151. The Education Index also increases by over 0.15 units with an increase in economic freedom by 1 unit. The Real GDP per Capita PPP$ Index is the most highly affected, increasing by more than 0.18 with an increase in economic freedom by 1 unit.

This research paper also determined, based on the components of the new Freedom Index, which specific economic freedoms lead to greater socio-economic development. An increase in freedom in the areas of trade, property rights and internal regulations lead to an improvement in the quality of life. Therefore, as a country trades

more with the rest of the world, as it improves its protection of property rights and decreases its licensing requirements making markets more accessible to entrepreneurs, the quality of life of the people improves. In addition, fiscal burden of the government is negatively related to HDI. This means that as countries tax less, the level of human development declines. This result could be explained by the fact that one of the functions of taxation policies is the redistribution of wealth. Governments tax progressively and aim to redistribute wealth. If they are not able to do this, then the level of human development declines.

The empirical work done to identify the relationship between income inequality and economic freedom revealed a need to perform further research. The borderline significant results hint that the relationship between economic freedom and income inequality can be expressed in the form of an inverted U-shaped Kuznets' curve. This paper predicted that as countries become more free, they experience greater income disparity initially, but after a certain level of economic freedom is attained, they then start experiencing the benefits of increased economic freedom and thus, see a higher level of socio-economic development. However, much more research needs to be done in order to obtain conclusive findings.

VII. Policy Implication and Future Research

Most developing countries formulate reform policies that intend to increase economic growth through increased economic freedom. Information about the effects of increased economic freedom on the quality of life will help them make their decisions

and provide valuable insights on the long-term social effects of economic freedom. This paper indicates that greater economic freedom leads to greater socio-economic development and this conclusion has significant policy implications. Governments of nations need to be aware of all the varied effects of increased economic freedom. Freedom in the areas of trade, property rights and regulation lead to greater socio-economic development. When countries experience greater freedom in the category of fiscal burden of the government, they tax less and taxation is not used for the purposes of redistribution. Thus, the level of socio-economic development suffers.

Furthermore, countries that begin to increase their level of economic freedom may not see immediate improvements in income equality when compared to the other aspects of socio-economic development. They may experience reduced income inequality possibly only after they have achieved a certain level of freedom. It is crucial to make deliberate efforts in order to reduce income inequality since economic freedom may not bring about an immediate reduction in income inequality. The poor people may take much longer to benefit from the gains of increased economic freedom.

This topic also has a lot of potential for further research. The measures of economic freedom are fairly crude and narrow at this stage and need to be developed further. There can be a lot of research done regarding causation and precedence in this field. Researchers can also develop a more wide-ranging measure of socio-economic development than the HDI. Measures that include all aspects of socio-economic development such as equitable income distribution, environmental well being, and marginalization of countries, etc., need to be developed. There is also scope for more study in the field of income inequality. Possible suggestions include using sophisticated

econometrics and controlling for the difference in the measurement years in the Gini coefficients. As economic freedom measures get more refined, it may be easier to get at the precise nature of the relationship between economic freedom and income inequality. Some control variables can also be considered.

APPENDIX

Table I: Indices' Values

No.	Country	*Life* Expectancy Index	Education Index	Real GDP Index	HDI 1999	Total 1999 Freedom Score	Total Change Score
1	Albania	0.8	0.8	0.58	0.725	3.43	0.29
2	Algeria	0.74	0.69	0.66	0.693	3.43	0.00
3	Angola	0.33	0.36	0.58	0.422	4.29	0.00
4	Argentina	0.8	0.92	0.8	0.842	2.29	-0.07
5	Armenia	0.8	0.92	0.52	0.745	2.71	-0.93
6	Australia	0.9	0.99	0.92	0.936	2.14	0.00
7	Austria	0.88	0.96	0.92	0.921	2.36	0.14
8	Azerbaijan	0.77	0.88	0.56	0.738	4.29	-0.36
9	Bahamas	0.74	0.89	0.84	0.82	2.29	0.00
10	Bahrain	0.8	0.85	0.82	0.824	1.86	0.14
11	Bangladesh	0.57	0.39	0.45	0.47	3.93	0.21
12	Barbados	0.86	0.9	0.83	0.864	2.57	-0.43
13	Belarus	0.73	0.92	0.71	0.782	4.00	0.86
14	Belgium	0.89	0.99	0.92	0.935	2.43	0.00
15	Belize	0.81	0.86	0.65	0.776	3.14	0.14
16	Benin	0.48	0.41	0.37	0.42	3.00	0.00
17	Bolivia	0.62	0.8	0.53	0.648	2.50	0.07
18	Botswana	0.28	0.74	0.71	0.577	2.64	-0.36
19	Brazil	0.71	0.83	0.71	0.75	3.29	-0.07
20	Bulgaria	0.76	0.9	0.66	0.772	3.29	0.00
21	Burkina Faso	0.35	0.23	0.38	0.32	3.43	-0.43
22	Burundi	0.26	0.37	0.29	0.309	4.14	-
23	Cambodia	0.52	0.66	0.44	0.541	3.14	-
24	Cameroon	0.42	0.64	0.46	0.506	3.57	0.00
25	Canada	0.89	0.98	0.93	0.936	2.29	0.00
26	Cape Verde	0.74	0.75	0.63	0.708	3.71	0.00
27	Chad	0.34	0.38	0.36	0.359	4.14	-
28	Chile	0.84	0.9	0.74	0.825	2.14	-0.36
29	China	0.75	0.8	0.6	0.718	3.57	0.14
30	Colombia	0.76	0.85	0.68	0.765	2.57	0.00
31	Congo,DR	0.43	0.51	0.35	0.429	4.71	0.71
32	Congo	0.44	0.74	0.33	0.502	3.86	-0.29
33	Costa Rica	0.85	0.86	0.75	0.821	2.71	-0.14
34	Croatia	0.81	0.88	0.72	0.803	3.57	0.29
35	Cyprus	0.88	0.87	0.88	0.877	2.64	0.07
36	Czech	0.83	0.89	0.81	0.844	2.00	0.14
37	Denmark	0.85	0.98	0.93	0.921	2.07	0.07
38	Djibouti	0.32	0.5	0.53	0.447	3.29	-
39	Dominican Republic	0.7	0.79	0.67	0.722	3.14	-0.14
40	Ecuador	0.75	0.86	0.57	0.726	2.86	-0.14
41	Egypt	0.7	0.62	0.59	0.635	3.86	0.21
42	El Salvador	0.74	0.73	0.63	0.701	1.93	-0.43
43	Equatorial Guinea	0.43	0.76	0.64	0.61	4.21	-
44	Estonia	0.76	0.94	0.74	0.812	2.00	-0.14
45	Ethiopia	0.32	0.34	0.31	0.321	3.86	0.07
46	Fiji	0.73	0.9	0.65	0.757	3.43	0.00
47	Finland	0.87	0.99	0.91	0.925	2.50	-0.21
48	France	0.89	0.97	0.91	0.924	3.00	0.29

49 Gabon	0.46	0.71	0.68	0.617	3.29	-0.05
50 Gambia	0.35	0.39	0.46	0.398	3.57	-
51 Georgia	0.8	0.89	0.53	0.742	3.36	-0.29
52 Germany	0.88	0.97	0.91	0.921	2.57	0.14
53 Ghana	0.53	0.61	0.49	0.542	3.00	-0.43
54 Greece	0.89	0.92	0.84	0.881	2.86	0.00
55 Guatemala	0.66	0.62	0.6	0.626	2.86	-0.07
56 Guinea	0.37	0.33	0.49	0.397	3.29	0.14
57 Guinea-Bissau	0.33	0.37	0.32	0.339	4.57	-
58 Guyana	0.64	0.87	0.6	0.704	3.43	0.14
59 Haiti	0.46	0.5	0.45	0.467	4.00	-0.43
60 Honduras	0.68	0.7	0.53	0.634	3.21	-0.07
61 Hong Kong	0.91	0.83	0.9	0.88	1.14	0.00
62 Hungary	0.77	0.93	0.79	0.829	2.57	-0.14
63 Iceland	0.9	0.96	0.94	0.932	2.43	-
64 India	0.63	0.56	0.52	0.571	3.86	-0.07
65 Indonesia	0.68	0.79	0.56	0.677	3.29	0.50
66 Iran	0.73	0.75	0.67	0.714	4.64	0.14
67 Ireland	0.86	0.96	0.93	0.916	2.07	-0.07
68 Israel	0.89	0.91	0.87	0.893	2.43	0.00
69 Italy	0.89	0.94	0.9	0.909	2.57	-0.43
70 Jamaica	0.84	0.78	0.6	0.738	2.43	-0.14
71 Japan	0.93	0.93	0.92	0.928	2.43	0.07
72 Jordan	0.75	0.78	0.61	0.714	2.86	-0.07
73 Kazakhstan	0.66	0.92	0.65	0.742	3.57	-
74 Kenya	0.44	0.71	0.39	0.514	3.14	-0.07
75 Korea	0.83	0.95	0.84	0.875	-	-
76 Kuwait	0.85	0.74	0.86	0.818	2.57	0.00
77 Kyrgyzstan	0.71	0.87	0.54	0.707	3.43	-
78 Lao	0.47	0.51	0.45	0.476	4.71	0.07
79 Latvia	0.75	0.93	0.69	0.791	2.50	-0.43
80 Lebanon	0.8	0.83	0.64	0.758	3.07	0.43
81 Lesotho	0.38	0.75	0.49	0.541	3.64	-0.14
82 Libyan	0.75	0.83	0.72	0.77	4.79	0.00
83 Lithuania	0.78	0.93	0.7	0.803	2.71	-0.57
84 Luxembourg	0.87	0.9	1	0.924	2.00	-0.21
85 Madagascar	0.45	0.59	0.35	0.462	3.29	-0.07
86 Malawi	0.26	0.64	0.3	0.397	3.50	0.07
87 Malaysia	0.79	0.8	0.74	0.774	2.86	0.00
88 Mali	0.44	0.36	0.34	0.378	2.71	-0.21
89 Malta	0.88	0.88	0.84	0.866	3.07	-0.14
90 Mauritania	0.43	0.41	0.46	0.437	4.00	0.07
91 Mauritius	0.77	0.77	0.75	0.765	2.93	-
92 Mexico	0.79	0.84	0.74	0.79	3.00	-0.29
93 Moldova,	0.69	0.9	0.5	0.699	3.00	-0.14
94 Mongolia	0.62	0.61	0.47	0.569	3.07	-0.21
95 Morocco	0.7	0.49	0.59	0.596	2.93	-0.07
96 Mozambique	0.25	0.36	0.36	0.323	3.57	-0.43
97 Namibia	0.33	0.8	0.67	0.601	2.71	-
98 Nepal	0.55	0.47	0.42	0.48	3.71	0.21
99 Netherlands	0.88	0.99	0.92	0.931	2.36	0.29
100 New Zealand	0.87	0.99	0.88	0.913	1.79	-0.14
101 Nicaragua	0.72	0.66	0.52	0.635	3.43	0.00
102 Niger	0.33	0.15	0.34	0.274	4.00	0.14
103 Nigeria	0.44	0.57	0.36	0.455	3.29	-0.14
104 Norway	0.89	0.98	0.94	0.939	2.57	-0.21

105 Oman	0.76	0.66	0.82	0.747	3.14	0.14
106 Pakistan	0.58	0.43	0.49	0.498	3.43	0.36
107 Panama	0.81	0.86	0.68	0.784	2.43	-0.14
108 Papua New Guinea	0.52	0.55	0.53	0.534	3.57	0.14
109 Paraguay	0.75	0.83	0.63	0.738	2.57	0.36
110 Peru	0.72	0.86	0.64	0.743	2.29	-0.43
111 Philippines	0.73	0.91	0.61	0.749	2.79	-0.21
112 Poland	0.8	0.94	0.74	0.828	2.71	-0.29
113 Portugal	0.84	0.93	0.85	0.874	2.57	-0.14
114 Qatar	0.74	0.79	0.87	0.801	3.50	-
115 Romania	0.75	0.88	0.68	0.772	3.14	-0.14
116 Russian	0.69	0.92	0.72	0.775	3.57	0.43
117 Rwanda	0.25	0.57	0.36	0.395	4.14	-
118 Samoa (western)	0.73	0.75	0.62	0.701	3.14	0.00
119 Saudi Arabia	0.77	0.71	0.78	0.754	3.21	0.36
120 Senegal	0.47	0.36	0.44	0.423	3.36	-0.07
121 Sierra Leonne	0.22	0.3	0.25	0.258	3.86	0.57
122 Singapore	0.87	0.87	0.89	0.876	1.50	0.07
123 Slovakia	0.8	0.91	0.78	0.831	3.14	0.29
124 Slovenia	0.84	0.94	0.85	0.874	3.00	-0.43
125 South Africa	0.48	0.87	0.75	0.702	2.86	-0.14
126 Spain	0.89	0.97	0.87	0.908	2.57	-0.21
127 Sri Lanka	0.78	0.84	0.58	0.735	2.86	0.07
128 Sudan	0.51	0.49	0.32	0.439	3.93	-0.21
129 Suriname	0.76	0.89	0.62	0.758	3.71	0.14
130 Sweden	0.91	0.99	0.9	0.936	2.50	-0.14
131 Switzerland	0.9	0.94	0.94	0.924	2.07	-0.07
132 Syrian	0.76	0.7	0.63	0.7	4.43	0.43
133 Tajikistan	0.71	0.88	0.39	0.66	4.00	-
134 Tanzania,	0.44	0.61	0.27	0.436	3.29	0.00
135 Thailand	0.75	0.84	0.69	0.757	2.71	0.14
136 Togo	0.44	0.58	0.44	0.489	4.00	-
137 Trinidad & Tobago	0.82	0.84	0.74	0.798	2.36	-0.21
138 Tunisia	0.75	0.71	0.68	0.714	3.14	0.29
139 Turkey	0.74	0.77	0.69	0.735	2.50	0.07
140 Turkmenistan	0.68	0.92	0.59	0.73	4.14	-
141 Uganda	0.3	0.59	0.41	0.435	3.29	0.87
142 Ukraine	0.72	0.92	0.59	0.742	3.43	-0.29
143 United Arab Emirates	0.83	0.73	0.87	0.809	2.36	0.07
144 United Kingdom	0.87	0.99	0.9	0.923	2.00	-0.07
145 United States	0.86	0.98	0.96	0.934	2.00	0.00
146 Uruguay	0.82	0.92	0.75	0.828	2.36	-0.29
147 Uzbekistan	0.73	0.84	0.52	0.698	4.43	-
148 Venezuela	0.79	0.83	0.67	0.765	3.00	-0.14
149 Vietnam	0.71	0.84	0.49	0.682	4.29	-0.21
150 Yemen	0.59	0.47	0.35	0.468	3.93	0.43
151 Zambia	0.27	0.68	0.34	0.427	2.71	-0.14
152 Zimbabwe	0.3	0.8	0.56	0.554	3.86	0.14

Source: Heritage Foundation, UNDP 1994, 1998, 1999

Table II: Values of Components of the Freedom Index

No.	Country	a) International 1.Trade	2. Foreign Investment	b) Fiscal Burden	c) Regulation 1.Internal Regulation	2.Banking/ Finance	3.Wages/ Prices	d) Property Rights	Total Intl.	Total Regulation
1	Albania	4	2	4	3	4	3	4	3	3.67
2	Algeria	5	3	4	3	3	3	3	4	3.33
3	Angola	5	4	4	5	4	4	4	4.5	4.33
4	Argentina	3	2	3	2	2	2	2	2.5	2.33
5	Armenia	1	3	3	4	2	3	3	2	3.00
6	Australia	2	2	4	3	1	2	1	2	2.67
7	Austria	2	2	4.5	3	2	2	1	2	3.17
8	Azerbaijan	5	4	4	4	4	5	4	4.5	4.00
9	Bahamas	5	3	2	1	2	2	1	4	1.67
10	Bahrain	2	2	2	2	2	2	1	2	2.00
11	Bangladesh	5	3	2.5	5	4	4	4	4	3.83
12	Barbados	3	2	4	3	2	2	2	2.5	3.00
13	Belarus	4	4	4	4	4	4	4	4	4.00
14	Belgium	2	2	5	3	2	2	1	2	3.33
15	Belize	5	2	4	3	3	2	3	3.5	3.33
16	Benin	4	3	2	3	3	3	3	3.5	2.67
17	Bolivia	2	2	3.5	4	2	1	3	2	3.17
18	Botswana	3	3	3.5	3	2	2	2	3	2.83
19	Brazil	5	3	4	3	3	2	3	4	3.33
20	Bulgaria	4	2	4	4	3	3	3	3	3.67
21	Burkina Faso	5	2	3	4	4	3	3	3.5	3.67
22	Burundi	5	4	4	4	4	4	4	4.5	4.00
23	Cambodia	3	3	2	4	3	3	4	3	3.00
24	Cameroon	5	3	2	4	4	3	4	4	3.33
25	Canada	2	3	4	2	2	2	1	2.5	2.67
26	Cape Verde	5	2	4	4	5	4	2	3.5	4.33
27	Chad	5	4	4	4	4	4	4	4.5	4.00
28	Chile	2	2	3	2	3	2	1	2	2.67
29	China	5	3	3	4	3	3	4	4	3.33
30	Colombia	3	2	3	3	2	2	3	2.5	2.67
31	Congo,DR	5	5	5	4	5	4	5	5	4.67
32	Congo	5	4	3	4	4	3	4	4.5	3.67
33	Costa Rica	3	2	3	3	3	2	3	2.5	3.00
34	Croatia	3	3	4	4	3	4	4	3	3.67
35	Cyprus	3	3	3.5	2	2	3	2	3	2.50
36	Czech	1	2	4	2	1	2	2	1.5	2.33
37	Denmark	2	2	4.5	2	2	1	1	2	2.83
38	Djibouti	4	3	2	4	4	3	3	3.5	3.33
39	Dominican Republic	4	3	2	4	3	2	4	3.5	3.00
40	Ecuador	3	2	3	4	3	2	3	2.5	3.33
41	Egypt	5	3	5	4	4	3	3	4	4.33
42	El Salvador	3	1	1.5	2	2	2	2	2	1.83
43	Equatorial Guinea	4	4	2.5	4	5	5	5	4	3.83
44	Estonia	1	1	4	2	2	2	2	1	2.67
45	Ethiopia	5	4	3	4	4	3	4	4.5	3.67
46	Fiji	5	3	4	3	3	3	3	4	3.33
47	Finland	2	2	4.5	3	3	2	1	2	3.50
48	France	2	3	5	3	3	3	2	2.5	3.67

49	Gabon	5	3	4	3	2	3	3	4	3.00
50	Gambia	4	4	2	4	4	4	3	4	3.33
51	Georgia	3	3	1.5	4	4	4	4	3	3.17
52	Germany	2	2	5	3	3	2	1	2	3.67
53	Ghana	3	3	3	4	3	2	3	3	3.33
54	Greece	2	2	4	3	4	3	2	2	3.67
55	Guatemala	3	3	2	4	2	3	3	3	2.67
56	Guinea	3	3	3	4	3	3	4	3	3.33
57	Guinea-Bissau	5	4	3	5	5	5	5	4.5	4.33
58	Guyana	5	3	4	4	3	2	3	4	3.67
59	Haiti	4	4	2	5	4	4	5	4	3.67
60	Honduras	4	3	2.5	4	3	3	3	3.5	3.17
61	Hong Kong	1	1	1	1	1	2	1	1	1.00
62	Hungary	3	2	4	3	2	2	2	2.5	3.00
63	Iceland	2	2	4	3	3	2	1	2	3.33
64	India	5	4	3	4	4	4	3	4.5	3.67
65	Indonesia	4	2	3	4	4	3	3	3	3.67
66	Iran,	5	5	4.5	4	5	4	5	5	4.50
67	Ireland	2	2	3.5	2	2	2	1	2	2.50
68	Israel	2	1	5	2	3	2	2	1.5	3.33
69	Italy	2	2	5	3	2	2	2	2	3.33
70	Jamaica	2	2	3	3	3	2	2	2	3.00
71	Japan	2	3	4	2	3	2	1	2.5	3.00
72	Jordan	4	2	4	3	2	3	2	3	3.00
73	Kazakhstan	3	4	2	4	4	4	4	3.5	3.33
74	Kenya	4	3	3	4	2	3	3	3.5	3.00
75	Korea								-	-
76	Kuwait	2	4	3	2	3	3	1	3	2.67
77	Kyrgyzstan	4	3	3	4	3	3	4	3.5	3.33
78	Lao	5	5	3	5	5	5	5	5	4.33
79	Latvia	2	2	3.5	3	2	2	3	2	2.83
80	Lebanon	5	3	3.5	3	2	2	3	4	2.83
81	Lesotho	3	3	4.5	4	4	4	3	3	4.17
82	Libyan	5	5	3.5	5	5	5	5	5	4.50
83	Lithuania	1	2	4	3	3	3	3	1.5	3.33
84	Luxembourg	2	2	3	2	2	2	1	2	2.33
85	Madagascar	5	3	3	3	4	2	3	4	3.33
86	Malawi	5	3	3.5	4	3	3	3	4	3.50
87	Malaysia	3	4	3	2	3	3	2	3.5	2.67
88	Mali	3	2	3	3	3	2	3	2.5	3.00
89	Malta	4	2	3.5	3	3	4	2	3	3.17
90	Mauritania	5	3	3	4	5	4	4	4	4.00
91	Mauritius	4	3	3.5	3	2	3	2	3.5	2.83
92	Mexico	3	2	3	4	4	2	3	2.5	3.67
93	Moldova,	3	3	3	3	3	3	3	3	3.00
94	Mongolia	1	3	4.5	4	3	3	3	2	3.83
95	Morocco	4	2	2.5	3	3	3	3	3	2.83
96	Mozambique	3	3	4	5	3	3	4	3	4.00
97	Namibia	4	2	4	3	2	2	2	3	3.00
98	Nepal	5	4	2	4	4	4	3	4.5	3.33
99	Netherlands	2	2	4.5	3	1	3	1	2	2.83
100	New Zealand	2	1	3.5	2	1	2	1	1.5	2.17
101	Nicaragua	5	2	3	4	3	3	4	3.5	3.33
102	Niger	5	4	3	4	4	4	4	4.5	3.67
103	Nigeria	5	2	2	4	4	2	4	3.5	3.33

104	Norway	2	2	4	3	3	3	1	2	3.33
105	Oman	2	4	3	3	4	3	3	3	3.33
106	Pakistan	5	2	3	4	3	3	4	3.5	3.33
107	Panama	3	2	3	3	1	2	3	2.5	2.33
108	Papua New Guinea	5	3	3	4	4	3	3	4	3.67
109	Paraguay	2	1	2	4	2	3	4	1.5	2.67
110	Peru	2	2	2	3	2	2	3	2	2.33
111	Philippines	3	3	2.5	4	3	2	2	3	3.17
112	Poland	2	2	4	3	3	3	2	2	3.33
113	Portugal	2	2	4	3	3	2	2	2	3.33
114	Qatar	3	3	3.5	4	4	4	3	3	3.83
115	Romania	2	2	5	4	3	2	4	2	4.00
116	Russian	4	3	4	4	4	3	3	3.5	4.00
117	Rwanda	5	4	2	5	5	3	5	4.5	4.00
118	Samoa (western)	3	3	4	3	3	3	3	3	3.33
119	Saudi Arabia	4	4	2.5	3	3	3	3	4	2.83
120	Senegal	4	3	2.5	4	3	4	3	3.5	3.17
121	Sierra Leonne	4	4	3	4	4	4	4	4	3.67
122	Singapore	1	1	2.5	1	2	2	1	1	1.83
123	Slovakia	3	3	4	3	3	3	3	3	3.33
124	Slovenia	3	3	4	3	3	3	2	3	3.33
125	South Africa	4	2	4	2	3	2	3	3	3.00
126	Spain	2	2	4	3	2	3	2	2	3.00
127	Sri Lanka	3	3	3	3	3	2	3	3	3.00
128	Sudan	5	4	2.5	4	4	4	4	4.5	3.50
129	Suriname	5	3	4	4	4	3	3	4	4.00
130	Sweden	2	2	4.5	3	2	2	2	2	3.17
131	Switzerland	2	2	3.5	3	1	2	1	2	2.50
132	Syrian	5	4	5	4	5	4	4	4.5	4.67
133	Tajikistan	5	4	3	4	4	4	4	4.5	3.67
134	Tanzania,	5	3	3	4	3	2	3	4	3.33
135	Thailand	3	2	3	3	3	3	2	2.5	3.00
136	Togo	4	4	3	5	4	4	4	4	4.00
137	Trinidad & Tobago	4	1	3.5	3	2	2	1	2.5	2.83
138	Tunisia	5	2	4	3	3	2	3	3.5	3.33
139	Turkey	2	2	3.5	3	2	3	2	2	2.83
140	Turkmenistan	5	4	3	4	5	4	4	4.5	4.00
141	Uganda	5	3	3	3	3	3	3	4	3.00
142	Ukraine	2	3	4	4	4	3	4	2.5	4.00
143	United Arab Emirates	2	4	1.5	2	3	3	1	3	2.17
144	United Kingdom	2	2	4	2	1	2	1	2	2.33
145	United States	2	2	3	2	2	2	1	2	2.33
146	Uruguay	2	2	3.5	3	2	2	2	2	2.83
147	Uzbekistan	5	4	4	5	5	4	4	4.5	4.67
148	Venezuela	3	3	3	3	3	3	3	3	3.00
149	Vietnam	5	4	3	5	4	4	5	4.5	4.00
150	Yemen	4	4	4.5	4	4	3	4	4	4.17
151	Zambia	3	2	3	4	2	2	3	2.5	3.00
152	Zimbabwe	5	4	4	4	3	3	4	4.5	3.67

Source: Heritage Foundation 1999, 1994

Table III: Gini Coefficients and Economic Freedom Values

Year	No.	Countries	Gini Coefficient	Freedom	Square of freedom
1995	1	Algeria	35.3	3.5	12.250
1996	2	Armenia	44.4	3.75	14.063
1996	3	Bangladesh	33.6	3.5	12.250
1998	4	Belarus	21.7	4	16.000
1997	5	Bolivia	58.9	2.7	7.290
1997	6	Brazil	59.1	3.45	11.903
1997	7	Bulgaria	26.4	3.6	12.960
1997	8	Cambodia	40.4	3.5	12.250
1996	9	Chile	57.5	2.55	6.503
1998	10	China	40.3	3.5	12.250
1996	11	Colombia	57.1	3.05	9.303
1997	12	Costa Rica	45.9	2.95	8.703
1998	13	Croatia	29	3.65	13.323
1996	14	Czech	25.4	2.2	4.840
1998	15	Dominican Republic	47.4	3.2	10.240
1997	16	El Salvador	50.8	2.4	5.760
1995	17	Ecuador	43.7	3.2	10.240
1995	18	Egypt	28.9	3.7	13.690
1998	19	Estonia	37.6	2.3	5.290
1995	20	Ethiopia	40	3.75	14.063
1995	21	France	32.7	2.3	5.290
1996	22	Georgia	37.1	3.95	15.603
1998	23	Ghana	39.6	3.2	10.240
1998	24	Guatemala	55.8	2.7	7.290
1997	25	Honduras	59	3.35	11.223
1998	26	Hungary	24.4	3	9.000
1997	27	India	37.8	3.8	14.440
1999	28	Indonesia	31.7	3.29	10.824
1995	29	Italy	27.3	2.5	6.250
1996	30	Jamaica	36.4	2.8	7.840
1997	31	Jordan	36.4	2.8	7.840
1997	32	Lao	37	4.45	19.803
1998	33	Latvia	32.4	2.85	8.123
1996	34	Lithuania	32.4	3.45	11.903
1997	35	Madagascar	46	3.25	10.563
1997	36	Malaysia	49.2	2.8	7.840
1996	37	Mexico	51.9	3.1	9.610
1997	38	Moldova,	40.6	3.4	11.560
1995	39	Mongolia	33.2	3.33	11.089
1999	40	Morocco	39.5	2.93	8.585
1997	41	Mozambique	39.6	4	16.000
1996	42	Nepal	36.7	3.55	12.603
1998	43	Nicaragua	60.3	3.5	12.250
1997	44	Nigeria	50.6	3.3	10.890
1997	45	Pakistan	31.2	3.2	10.240

1997	46	Panama	48.5	2.5	6.250
1996	47	Papua New Guinea	50.9	3.15	9.923
1998	48	Paraguay	57.7	2.8	7.840
1996	49	Peru	46.2	2.9	8.410
1997	50	Philippines	46.2	2.85	8.123
1998	51	Poland	31.6	2.9	8.410
1995	52	Portugal	35.6	2.7	7.290
1998	53	Russian	48.7	3.35	11.223
1998	54	Slovenia	28.4	3	9.000
1995	55	Sri Lanka	34.4	3	9.000
1995	56	Sweden	25	2.65	7.023
1998	57	Turkey	41.5	2.6	6.760
1998	58	Ukraine	29	2.65	7.023
1997	59	United States	40.8	1.8	3.240
1997	60	Venezuela	48.8	3.4	11.560
1998	61	Vietnam	36.1	4.35	18.923
1998	62	Yemen	33.4	4.1	16.810
1998	63	Zambia	52.6	2.9	8.410

Source: UNDP, Heritage Foundation, 1999, 1994

No.	Countries	Gini	Freedom	Change	Square of Freedom
1	Algeria	35.3	3.43	0	11.7649
2	Armenia	44.4	2.71	-0.93	7.3441
3	Australia	35.2	2.14	0	4.5796
4	Austria	23.1	2.36	0.14	5.5696
5	Azerbaijan	36	4.29	-0.36	18.4041
6	Bangladesh	33.6	3.93	0.21	15.4449
7	Belarus	21.7	4	0.86	16
8	Belgium	25	2.43	0	5.9049
9	Bolivia	58.9	2.5	0.07	6.25
10	Brazil	59.1	3.29	-0.07	10.8241
11	Bulgaria	26.4	3.29	0	10.8241
12	Burkina Faso	48.2	3.43	-0.43	11.7649
13	Burundi	33.3	4.14	.	17.1396
14	Cambodia	40.4	3.14	.	9.8596
15	Canada	31.5	2.29	0	5.2441
16	Chile	57.5	2.14	-0.36	4.5796
17	China	40.3	3.57	0.14	12.7449
18	Colombia	57.1	2.57	0	6.6049
19	Costa Rica	45.9	2.71	-0.14	7.3441
20	Croatia	29	3.57	0.29	12.7449
21	Czech	25.4	2	0.14	4
22	Denmark	24.7	2.07	0.07	4.2849
23	Dominican Republic	47.4	3.14	-0.14	9.8596
24	El Salvador	50.8	2.86	-0.14	8.1796
25	Ecuador	43.7	3.86	0.21	14.8996
26	Egypt	28.9	1.93	-0.43	3.7249
27	Estonia	37.6	2	-0.14	4
28	Ethiopia	40	3.86	0.07	14.8996
29	Finland	25.6	2.5	-0.21	6.25
30	France	32.7	3	0.29	9
31	Gambia	47.8	3.57	.	12.7449
32	Georgia	37.1	3.36	-0.29	11.2896
33	Germany	30	2.57	0.14	6.6049
34	Ghana	39.6	3	-0.43	9
35	Greece	32.7	2.86	0	8.1796
36	Guatemala	55.8	2.86	-0.07	8.1796
37	Guinea	40.3	3.29	0.14	10.8241
38	Guinea-Bissau	56.2	4.57	.	20.8849
39	Guyana	40.2	3.43	0.14	11.7649
40	Honduras	59	3.21	-0.07	10.3041
41	Hungary	24.4	2.57	-0.14	6.6049
42	India	37.8	3.86	-0.07	14.8996
43	Indonesia	31.7	3.29	0.5	10.8241
44	Ireland	35.9	2.07	-0.07	4.2849
45	Israel	35.5	2.43	0	5.9049

46	Italy	27.3	2.57	-0.43	6.6049
47	Jamaica	36.4	2.43	-0.14	5.9049
48	Japan	24.9	2.43	0.07	5.9049
49	Jordan	36.4	2.86	-0.07	8.1796
50	Kazakhstan	35.4	3.57	.	12.7449
51	Kenya	44.5	3.14	-0.07	9.8596
52	Kyrgyzstan	40.5	3.43	.	11.7649
53	Lao	37	4.71	0.07	22.1841
54	Latvia	32.4	2.5	-0.43	6.25
55	Lesotho	56	3.64	-0.14	13.2496
56	Lithuania	32.4	2.71	-0.57	7.3441
57	Luxembourg	26.9	2	-0.21	4
58	Madagascar	46	3.29	-0.07	10.8241
59	Malaysia	49.2	2.86	0	8.1796
60	Mali	50.5	2.71	-0.21	7.3441
61	Mauritania	37.3	4	0.07	16
62	Mexico	51.9	3	-0.29	9
63	Moldova,	40.6	3	-0.14	9
64	Mongolia	33.2	3.07	-0.21	9.4249
65	Morocco	39.5	2.93	-0.07	8.5849
66	Mozambique	39.6	3.57	-0.43	12.7449
67	Nepal	36.7	3.71	0.21	13.7641
68	Netherlands	32.6	2.36	0.29	5.5696
69	Nicaragua	60.3	3.43	0	11.7649
70	Niger	50.5	4	0.14	16
71	Nigeria	50.6	3.29	-0.14	10.8241
72	Norway	25.8	2.57	-0.21	6.6049
73	Pakistan	31.2	3.43	0.36	11.7649
74	Panama	48.5	2.43	-0.14	5.9049
75	Papua New Guinea	50.9	3.57	0.14	12.7449
76	Paraguay	57.7	2.57	0.36	6.6049
77	Peru	46.2	2.29	-0.43	5.2441
78	Philippines	46.2	2.79	-0.21	7.7841
79	Poland	31.6	2.71	-0.29	7.3441
80	Portugal	35.6	2.57	-0.14	6.6049
81	Romania	28.2	3.14	-0.14	9.8596
82	Russian	48.7	3.57	0.43	12.7449
83	Rwanda	28.9	4.14	.	17.1396
84	Senegal	41.3	3.36	-0.07	11.2896
85	Sierra Leonne	62.9	3.86	0.57	14.8996
86	Slovakia	19.5	3.14	0.29	9.8596
87	Slovenia	28.4	3	-0.43	9
88	South Africa	59.3	2.86	-0.14	8.1796
89	Spain	32.5	2.57	-0.21	6.6049
90	Sri Lanka	34.4	2.86	0.07	8.1796
91	Sweden	25	2.5	-0.14	6.25
92	Switzerland	33.1	2.07	-0.07	4.2849
93	Tanzania,	38.2	3.29	0	10.8241
94	Thailand	41.4	2.71	0.14	7.3441

95	Trinidad & Tobago	40.3	2.36	-0.21	5.5696
96	Tunisia	41.7	3.14	0.29	9.8596
97	Turkey	41.5	2.5	0.07	6.25
98	Turkmenistan	40.8	4.14	.	17.1396
99	Uganda	37.4	3.29	0.87	10.8241
100	Ukraine	29	3.43	-0.29	11.7649
101	United Kingdom	36.1	2	-0.07	4
102	United States	40.8	2	0	4
103	Uruguay	42.3	2.36	-0.29	5.5696
104	Uzbekistan	33.3	4.43	.	19.6249
105	Venezuela	48.8	3	-0.14	9
106	Vietnam	36.1	4.29	-0.21	18.4041
107	Yemen	33.4	3.93	0.43	15.4449
108	Zambia	52.6	2.71	-0.14	7.3441
109	Zimbabwe	56.8	3.86	0.14	14.8996

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