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The Effects of Trade and Other Factors on Income Distribution: The Cases of Chile, Dominican Republic, and Venezuela

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THE EFFECTS OF TRADE AND OTHER FACTORS
ON INCOME DISTRIBUTION

The Cases of Chile, Dominican Republic, and Venezuela

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Submitted in partial fulfillment of the requirements for
the degree of Bachelor of Arts

WESTERN MICHIGAN UNIVERSITY
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Abstract

This thesis examines the factors affecting income distribution in Latin America, specifically, the cases of Chile, the Dominican Republic, and Venezuela. The focus of this study is to identify economic, as well as, political factors that may be causing the inequality levels of income distribution to increase or decrease within the countries previously stated. Economic factors investigated include freedom to trade, trade as a percentage of GDP, economic growth, and educational enrollment levels. Furthermore, the political factors analyzed in this thesis are: corruption levels, legal structures, security of property rights, rule of law, democratic or non-democratic status, expenditure in social welfare programs and taxation structure. Two key results are found in this study. First, some independent variables used in this thesis are found not to significantly sway the distribution of income in these three countries by themselves ; however, ignoring one variable for another is a mistake for they, together, may influence the distribution after all. On the other hand, taxation systems do seem to take an effect on income distribution. Although the impression is that taxation has negative effects on income distribution (it, many times, augments inequality), an effect is clearly present. Second, not only the existence, but the power exercised by leftist parties in Venezuela seems to have a greater impact on income distribution than did the other factors. Furthermore, although I understand the limited characteristic of the data, the next step would be to include multivariate regressions and the effects of unions and union strength in an effort to improve this analysis.

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INTRODUCTION:

Income inequality in Latin America is a longstanding problem. In fact, Latin America is the region with the highest income inequality in the world. According to Huber et al., “the region constituted by Latin America and the Caribbean as a whole has the highest level of inequality in the world, and during the last three decades of the 20th century, inequality increased in most countries of the region”(Huber et al., 2006). Why is this so? It has become clear that, after the Great Recession, today’s economies are ever so intertwined. The real possibility that economic crashes elsewhere may affect our own domestic economy is more than enough motivation to search for the answers to the question of what affects income inequality in the most unequal region of the world. It is important to realize that as globalization continues to increase, market interdependence increases through trade. Thus, as academics and scholars debate, trade could be an important factor affecting income distribution in all countries, including those in Latin America. In order to gain insight of the effects of trade on income distribution in Latin America, this essay will focus on three countries that vary widely across the spectrum of freedom to trade.

The countries chosen for this study are Chile, the Dominican Republic, and Venezuela. Chile, ranked 3rd in the world overall for freedom to trade, represents an economy that is very open to trade at one end of the spectrum (Economic Freedom of the World, 2010). The Dominican Republic, ranked 73rd, is an economy that places at the middle of the spectrum for freedom to trade (Economic Freedom of the World, 2010). Venezuela, ranked 140th in the world, balances the spectrum by being an economy much more closed to trade, in spite of the

oil revenues it produces (Economic Freedom of the World, 2010). On the other hand, although these countries possess very distinct rankings in their freedom to trade, they have come about from similar historical pasts, had similar regime change experiences, span across relatively the same geographic region and share similar cultural markers such as the Spanish language and a major religion, Catholicism. Furthermore, it is important to lay out the initial conditions, the initial starting point in terms of inequality for these countries.

Historically, these countries have faced similar colonization experience, Spain being a common metropolis for all. It is interesting to note that, although data is limited for these countries, income inequality was very similar. This is explained by de Ferranti et. al. when they state that, “factor endowments, technology, and relative scarcity of resources have had important implications for the initial inequality levels. For example, in Latin America the characteristics of the colonies favored the establishment of large plantations (such as sugar) and mining activities that employed forced labor. As a result, a social structure emerged where a privileged few were in control of most of the profitable activities and where, most importantly, most of the population was excluded from access to land, education, and political power” (de Ferranti et. al., 2003). This is a characteristic that is present at the initial stages of development in all of Latin America, thus, the countries also present a similar starting point.

Furthermore, in terms of economic stages of development, most Latin American countries, including Chile, Dominican Republic, and Venezuela, implemented a system of import substitution industrialization (ISI). This strategy required intense capital from the countries which imported scarce factors and remain isolated from trade. This, in turn, greatly indebted

the Latin American countries and made it much harder for them to keep pace with the rest of the world. Thus, as we may see, these three countries had similar beginnings. But, how have they evolved through the years?

This essay will analyze these countries' trading patterns, as well as other factors that might explain higher or lower inequality in income, from the post-WWII era to the present day. According to the Stolper-Samuelson theorem, it seems that as freedom to trade increases, the income gained by the developing and developed economies will be more evenly distributed amongst their populations. However, there are many who debate these conclusions; their arguments will be discussed shortly in this essay. However, since trade cannot be the only factor explaining income distribution discrepancies between these Latin American countries, the identification of other factors is crucial. Scholars in the field disagree as to what exactly is the main cause for income inequality, which is one reason why many debates have ensued with varying conclusions.

LITERATURE REVIEW:

The Debate on Trade-

In order to understand the debate thoroughly, it is important to define trade itself. According to the Heckscher-Ohlin model, countries "export goods that intensively use their abundant factors of production and import goods that intensively use their scarce factors." (Reuveni and Li 2003, pg.579) In other words, countries will engage in trade with the goods in which they have a comparative advantage. According to Adrian Wood, "the belief that increased openness reduces wage inequality in developing countries rests on an apparently

indisputable fact—that the supply of unskilled labor, relative to the supply of skilled labor, is larger in developing than in developed countries” (Wood, 1997, pg. 34). Intuitively, this makes a lot of sense since developing countries usually lack the technological infrastructure and educational resources that more developed countries possess. Thus, following the law of comparative advantage, these developing countries will trade their most abundant factor, unskilled labor.

The theory states that, “In developing countries, where unskilled labor is abundant and skilled labor is scarce, trade tends to raise unskilled wages and to lower skilled wages and hence to narrow the gap between them” (Wood, 1997, pg. 34). Nancy Birdsall reaches the same conclusion, she explains that “trade intensifies economic competition, which reduces prices of basic consumption goods” (Reuveni and Li, 2003 pg.579). From the fall in basic goods prices, the lower classes that spend a significant amount of their income in such goods will benefit. On the other hand, the increased competition “diminishes the monopoly position enjoyed by the upper class, reducing income inequality” (Reuveni and Li, 2003 pg.579). In turn, the state or the government can compensate the losers from trade; this would lead to an effective redistribution of income to reduce inequality. Of course, it is naïve to assume that the government will effectively compensate the losers from trade. Thus, there are other scholars that argue that trade openness actually increases inequality.

Stolper and Samuelson predicted that trade “would raise the incomes of the owners of abundant factors and reduce the incomes of the owners of scarce factors” in developed countries (Reuveni and Li 2003, pg.579). The income of the owners of the abundant factors

(skilled labor) would generally increase from the increase in export opportunity into different markets, thus, the skilled laborer is benefited by the trade in a country that has a relatively unskilled labor force. On the other hand, the real income of the owners of scarce factors (unskilled labor) will tend to decrease because of the increase of competition from the importation of the unskilled goods. This is also known as “factor price equalization,” the decrease of the real wage of unskilled laborers in developed countries will be driven down toward the average level of the world as a whole.

Although Stolper and Samuelson focus on the effects of trade on developed countries, it is important to note the theoretical differences posed by trade and its effect on income inequality. They explain that in developed economies, skilled laborers will gain while unskilled laborers will lose. Conversely, in the case of developing countries, skilled laborers lose while unskilled laborers gain. Thus, it is evident that the inequality should decrease on average for the world as a whole. In a Heckscher-Ohlin world where capital and labor are the two factors of production, Litwin explains that, “trade liberalization reduces inequality since labor is assumed to be relatively abundant in developing countries.” (Litwin, 1998, pg. 2). Likewise, capital is assumed to be relatively abundant in developed countries. However, the gains that could be available for unskilled labor may be offset by the losses of the skilled labor, thus, it is not clear if trade alone can account for all changes in inequality.

The Debate on Economic Growth-

Other scholars and theorists look into economic growth as a whole in hopes that such a factor can influence the distribution of income. Economic growth theory has its focus on the

Solow model. According to Dornbusch et al., the Solow model explains that the economic growth that a given country possesses is a function of its labor force (population), its level of technology, and capital, which is divided into human capital and the stock of capital. Furthermore, “the investment required to maintain a given level, k , of capital per capita depends on population growth and the depreciation rate, the rate at which machines wear out” (Dornbusch et al., 2008). The model starts with a neoclassical Cobb-Douglas production function:

$$Y = AK^\alpha L^{(1-\alpha)}$$

Where $A > 0$ is the level of the technology and α is a constant with $0 < \alpha < 1$. In the model, α represents the share of capital while $(1 - \alpha)$ the share of labor. The second key equation of the Solow model describes how capital accumulates:

Δ

$K = \text{Investment-Replacement}$

Where:

Δ

$K =$ the change (growth) of capital

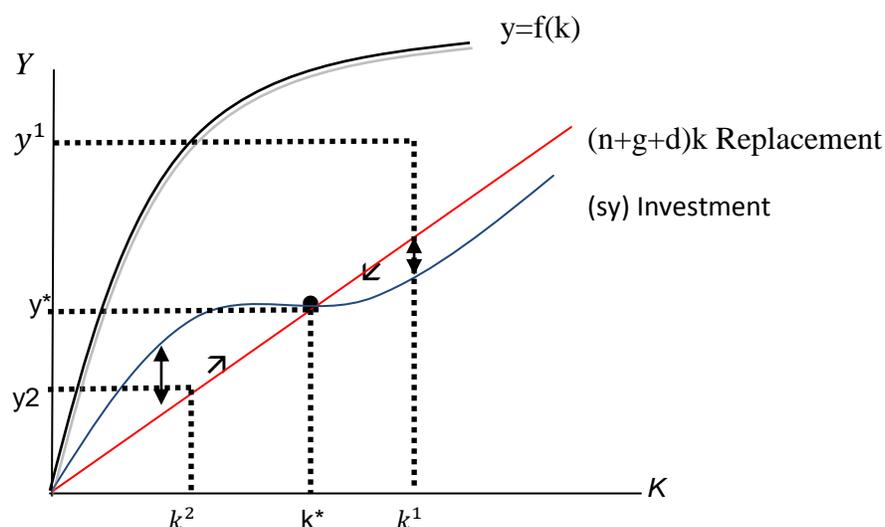
In turn, investment is composed by the savings rate (sy), which is determined by households as they divide income between consumption and saving. Replacement is therefore composed the level of population (n), the level of technology (g), and the depreciation rate (d). Thus, we are given the fundamental Solow equation of growth determination:

Δ

$$K = (sy) - (d+n+g)k$$

The key to understanding the Solow model, according to Dornbusch et al. is that, “when saving (sy), exceeds the investment requirement line (replacement line), then k is increasing” (Dornbusch et al. 2008). Figure 1 below shows the dynamics of the Solow model.

FIGURE 1:



As you may note, at point (y^1, k^1) the replacement line is above the investment line, meaning, $(sy) < (n+g+d)$ which implies a decrease in capital, thus, the economy would move towards the left. At point (y^2, k^2) the replacement line is below the investment line, thus,

$(sy) > (n+g+d)$ implying an increase in capital, thus moving the economy towards the right. Eventually, the economy will stop at point (y^*, k^*) where it will be at a “steady-state” equilibrium.

According to Piffaut, the “starting point on the relationship between growth and inequality is the Kuznets hypothesis” (Piffaut, 2009, pg.72). For Kuznets, “this hypothesis suggests that the distribution of income would deteriorate over the initial stages of development as an economy transforms from rural to urban and from agricultural to industrial. Subsequently, inequality would decrease as the labor force in the industrial sector expands and that of the agricultural sector falls” (Piffaut, 2009, pg.72).

In contrast, Boix explains how Galenson and Leibenstein (1955) assume that the propensity to save grows with increasing income. Therefore, “more skewed income distributions should generate higher investment rates and therefore higher growth rates” (Boix, 2009, pg.645). In other words, as people become more resourceful, they tend to save more of their income than will poorer individuals. This means that the investment curve, described through the Solow model, should be above the replacement curve as individuals gain more income and income inequality is rising. The greater the inequality, the higher must the investment curve be relative to the replacement curve, thus, it seems that the hypothesis is that income inequality encourages economic growth.

The Debate on Education-

As you may see, the analysis of the association between growth and inequality has a long tradition in the economics literature. Although the literature does not point us to whether there is a causal relationship or to the direction of causality, it does assert that growth by itself does not have a systematic impact on inequality or vice versa.

Therefore, there must be other factors that may affect the distribution of income in any given state. Education may be one of these factors affecting income distribution. Intuitively, one is inclined to say that countries with few highly educated people and a majority of uneducated or poorly educated people may show signs of greater income inequality. This hypothesis resembles the discussion of skilled vs. unskilled laborers. However, in this regard, the field is yet to grow and provide more evidence and empirical results.

One study by Gylfason and Zoega (2003) argues that “more and better education financed by public expenditure can encourage economic growth and reduce inequality in the distribution of income as well” (Piffaut, 2009, pg.86). In their 87 country study, they conclude among other things that, “three different measures of education reflecting education inputs, outcomes, and participation are all inversely related to inequality” (Piffaut, 2009, pg.86). They note that education encourages not only human capital investments, but also physical capital through a decrease in inequality.

Thus, this implies that the greater variation there is in opportunities for education (i.e., the harder it is for people of less resources to send their children to school), the greater the dispersion (inequality) of incomes will be. Although it is true that the field is growing in this

specific literature, Piffaut explains it correctly when saying that, “the analysis of the connections between education, inequality, and growth is in its infancy and there is still a long way ahead from both theoretical and empirical points of view” (Piffaut, 2009, pg.87).

The Debate on Political Factors-

It seems however that the factors that affect income distribution may not only be economic but, very evidently, political. The fact that unskilled workers gain from trade over skilled workers does not necessarily require government (which ever type it is) to compensate the losers in order to attain better equality. It is certain that inputs, resources, participation, and infrastructure of education are related to the institutions placed by government, such as public schools, the resources government wishes to allocate to the department of education, if such a department exists, and in some extreme cases, the type of education the students get. All of these important areas that encompass educational attainment may very well be influenced, if not managed, by the government. Therefore, it is paramount to study the government and institutions and their characteristics in different countries in order to effectively assess how income distribution might be affected.

One scholar that enlightens the relationship between income distribution and politics in developing countries is Carles Boix. Boix explains that, “in a democratic setting, which is always characterized by a strong equalizing bias, voters may be tempted to block growth-enhancing technological shock that may reduce their income or that simply increase inequality...the persistence of inequality and economic stagnation in developing economies derives from the

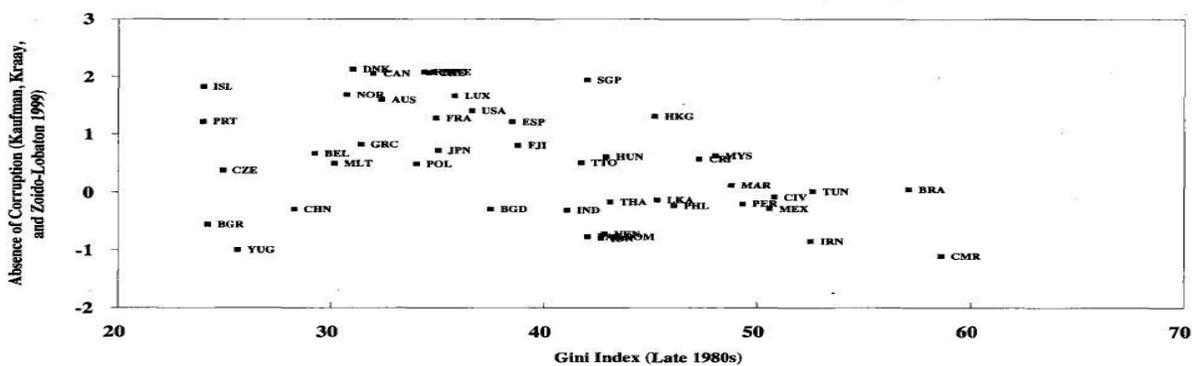
fact that their political and economic elites have very little incentives to transform their countries to open economies” (Boix, 2009, pg.647).

On the other hand, non-democratic regimes may more effectively restrain changes of the status quo for they are less accountable than democratic regimes. In such cases, inequality may be reminiscent of corruption and central planning. Of course, corruption is not unique to non-democratic regimes. Boix also demonstrates the correlation between the level of inequality (measured by the Gini index) and the perceived absence of corruption about which he states, “unsurprisingly, both measures are well correlated. High levels of corruption come jointly with more inequality” (Boix, 2009, pg.648). The image below shows the correlation of these two variables:

Image 1:

.....
 Symposium: *New Approaches to the Politics of Inequality in Developing Countries*

Figure 1
Correlation between Absence of Corruption and Level of Inequality



Source: **The Conditional Relationship between Inequality and Development**, Carles Boix, *PS, Political Science & Politics*; Oct 2009; 42, 4; Research Library pg. 648

For Boix it is evident that the factors affecting income inequality may be conditional of the institutions and accountability of political systems as well. He adds that, “in open economies, where technological shocks happen with some regularity and affect different individuals with temporal lags, it is not unusual to see growth and a widening income distribution, generally followed by a period of income convergence. By contrast, in closed economies, which define *Ancien Régime* societies, their elites employ a heavy dose of regulation to sustain their economic advantage over the rest of society” (Boix, 2009, pg.648-649).

It seems therefore, that legal system, property rights, legislative system, and all that composes a government may be directly related to the distribution of income, more so than other factors such as trade and education. According to Reuveny and Li (2003), “Democracy affects the distribution of income through the process of competing pressures: The government is subject to pressure from interest groups.

By promoting a more equal distribution of political power, democracy gives rise to labor unions and political parties that represent the lower and middle classes as well as to public policies that redistribute income to their constituents” (Reuveny and Li, 2003, pg.578). It seems that in democratic regimes that are truly accountable to the majority, income inequality should decrease since government leaders must appease the constituents that seek more equality. However, it is important to note that according to Olson, those groups that would collectively seek income equality may face obstacles as well.

He explains that large groups will face relatively high costs when attempting to organize for collective action while small groups will face relatively low costs. Furthermore, individuals in large groups will gain less per capita of successful collective action; individuals in small groups will gain more per capita through successful collective action. Hence, in the absence of collective incentives, the incentive for group action diminishes as group size increases, so that large groups are less able to act in their common interest than small ones. For this reason, income inequality in democracies may be even harder to achieve through the cooperation of the constituents.

Furthermore, one of the most frequently used tools by the government for income distribution and redistribution is taxation. According to Avi-Yonah and Margalioth, “taxes are required to overcome the problem of free riding inherent in the financing of public goods; to control other market imperfections; and achieve social justice by redistribution” (Avi-Yonah & Margalioth, 2006, pg. 4). The Debt Crisis of the 80s, which started in Mexico, is an important start-off point in understanding the taxation systems used by Latin American countries.

As the debt crisis developed, more and more countries had to seek financial assistance from the International Monetary Fund (IMF) which, in turn, “provided technical assistance in the tax area, assistance aimed at strengthening the tax systems so that they would become more efficient” (Tanzi, 2000, pg.4). With the spread of trade liberalization, according to Tanzi, many developing countries were encouraged to reduce restrictions on trade. Thus, “it made the tax systems more efficient, but, at the same time, it created the need for compensating

revenue sources” (Tanzi, 2000, pg.4). Thus, taxation and its effect on income distribution will be yet another important variable in this essay.

METHODOLOGY

Measuring Income Inequality-

However, in order to properly identify trends and/or significant factors affecting income distribution we must clarify how these are defined and how are they measured. Income inequality will be measured using the Gini index. The Gini index, developed by Italian statistician, Corrado Gini, is a measure of inequality based on the Lorenz curve. The index classifies countries with scores between zero and one, where zero corresponds to perfect equality (i.e., everyone in the country has the same income), and one corresponds to perfect inequality (i.e., one person has all the income while all other people have zero income). The Lorenz curve, the foundation for the measurement of the Gini index, was developed by economist Max Lorenz in 1905. The Lorenz curve shows for the bottom “X”% of the population, the percentage of income they have. Thus, all the points in the observed Lorenz curve describe a specific situation such as, the bottom 30% of the population holds 10% of the income. Thus, a perfectly equal distribution (the 45° line) means that every person owns the same amount of income. Conversely, a perfectly unequal distribution would be one where one person owns all the income, and the rest own nothing. The Gini index is determined by the ratio of the Lorenz curve and the perfect (uniform) distribution curve over the total area under the perfect distribution curve, this is, the area between the 45° line and the observed Lorenz curve. The image below depicted from Ellis (2007) illustrates the method:

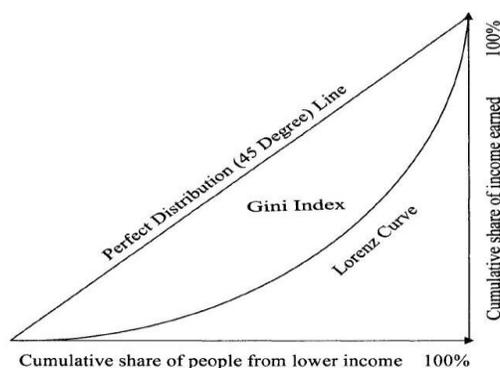


Figure 4: Gini Coefficient defined by Lorenz curve

Measuring Trade-

Now that we have identified the dependent variable, we must illustrate the independent variables that might affect it. To first identify trade we must note that in this contemporary world many products and services are produced elsewhere or are assembled and re-assembled using different resources in different countries. Trade has become a complex web of international communication that is essential to the economies of the world. There are certainly many components to trade. Tariffs and other trade barriers such as exchange rate controls are usually set in place to protect local industry but also to protect specific interests, many times delaying and hindering international trade. According to the *Economic Freedom of the World* (2010) "Sometimes these delays are the result of administrative inefficiency while in other instances they reflect the actions of corrupt officials seeking to extract bribes. In both cases, economic freedom is reduced" (Economic Freedom of the World, 2010, pg. 5). Thus, it follows that when economic freedom is reduced, income inequality is augmented.

Trade will be measured by using the Economic Freedom of the World 2010 annual report. According to the report, “components in this area are designed to measure a wide variety of restraints that affect international exchange: tariffs, quotas, hidden administrative restraints, and exchange rate and capital controls. In order to get a high rating in this area, a country must have low tariffs, a trade sector that is larger than expected, easy clearance and efficient administration of customs, a freely convertible currency, and few controls on the movement of capital” (Economic Freedom of the World, 2010, pg.5). In this area, countries are scored from 0.0 (least free) to 10.0 (most free). Thus, countries that contain lower scores will have lower rankings in regards to ability to trade freely. Conversely, countries that contain higher scores will have higher rankings compared to the rest; they are more able to trade freely. Also, a measure of the countries’ total exports and imports as a percentage of GDP will be used in order to comparatively measure the volume of trade.

Measuring Economic Growth-

Due to the fact that economic growth has been shown to be related to income inequality, it will be taken into consideration for this study. Economic growth will be measured by the countries’ real GDP growth, adjusted for inflation. This way, we hope to successfully capture each country’s growth rate on an annual basis.

Measuring Education-

Furthermore, when measuring education we must consider that, as explained by Piffaut, “an ideal measure of an individual's education should capture several components, including

the number of years spent in school, the quality of the schooling, the nature of the curriculum, and the student's effort. However, creating a measure that accurately quantifies these components is difficult" (Piffaut, 2009, pg.44). With this in mind, we will consider the data that is readily available, including total primary school enrollment as well as tertiary school enrollment in an effort to capture the effect of skilled education on income distribution.

Also, it is important to regard the *quality* of the education when assessing the data. Hanushek and Kimko (2000) developed educational quality indexes for 38 countries based on international test scores on mathematics and science over the period 1965-1991; the resulting estimates, according to Piffaut, "were used to predict values for an additional 49 countries" (Piffaut, 2009, pg.47). However, there is still an open debate concerning the applicability of this data. Nonetheless, the results exposed by Hanushek and Kimko will be weighed in the analysis.

Measuring Political Factors-

As we have previously noted, regime type and a country's institutions may play a significant role in shaping income distribution. The Economic Freedom of the World 2010 report states that, "Protection of persons and their rightfully acquired property is a central element of economic freedom and a civil society. Indeed, it is the most important function of government" (Economic Freedom of the World, 2010, pg. 3). Using the Economic Freedom of the World 2010 report, an evaluation of the country's judicial independence, impartiality of courts, protection of property rights, degree of military interference in rule of law and the political

process, integrity of the legal system, legal enforcement of contracts, and regulatory restrictions on the sale of real property will be conducted.

Furthermore, determining if regimes are democratic or not, and the level of corruption in government, will be central to the evidence and data that may be found during the study. In order to assess these characteristics of government, Freedom House's *Freedom in the World 2011 Report* and Transparency International's *Corruption Perception Index 2010 Report* will be used.

Freedom House applies one of three broad category designations to each of the countries and territories included in their index, free, partly free, and not free. According to Freedom House, "a free country is one where there is open political competition, a climate of respect for civil liberties, significant independent civic life, and independent media. A partly free country is one in which there is limited respect for political rights and civil liberties. partly free states frequently suffer from an environment of corruption, weak rule of law, ethnic and religious strife, and a political landscape in which a single party enjoys dominance despite a certain degree of pluralism. A country that is not free is one where basic political rights are absent, and basic civil liberties are widely and systematically denied" (Freedom in the World Report, 2011, pg. 3).

Transparency International defines corruption as "the abuse of entrusted power for private gain" (Corruption Perception Index Report, 2010). According to Transparency

International, the surveys and assessments used to compile the index include questions relating to bribery of public officials, kickbacks in public procurement, embezzlement of public funds, and questions that probe the strength and effectiveness of public sector anti-corruption efforts” (Corruption Perception Index Report, 2010). The index scales different countries on a score ranging from one to ten where one is represents countries that are highly corrupt and ten countries that are “very clean”.

Also, we expect that the level of government expenditure on social programs will be an important factor when analyzing income distribution. The methodology for the measurement of this variable will be made by considering governments’ social expenditures as a percent of GDP, as well as, per capita constant U.S. dollars. Ferreira and Robalino (2010) will be the source for such data. This way, a more effective comparison will be made and a relationship, if any, could be determined.

Finally, an assessment of the countries’ taxation systems will be utilized in order to properly identify their collective and redistributive characteristics. Income tax rates, corporate tax rates, as well as each system’s broadness or narrowness, will all be taken into account in order to estimate their effects on income distribution.

Political and Economic History:

Chile-

After clarifying the definitions and methods that will be used throughout this study, a more comprehensive analysis of Chile, the Dominican Republic, and Venezuela will be available. More importantly, we can gain more insight into how these countries' distinct or similar characteristics affect income distribution in their domestic economies. A successful comparison of policies and institutions will allow us to not only identify the strengths and weaknesses of each system but, to also determine strategies that would improve the problems of income inequality in this most unequal region of the world.

In order to attain a successful comparison, a brief economic and political history of our three case studies, Chile, Dominican Republic, and Venezuela, will be delineated. This historical comparison will bring to the surface possible similarities in the evolution of the countries that will in turn aid the analysis.

Chile received its independence from Spain in 1810, yet officially recorded it in 1818. Historically, Chile has been an exporter of Nickel, especially after the Pacific War held between Chile, Peru, and Bolivia from 1879 to 1883. After the war, Chile had annexed territories rich in nitrate that spurred economic developed for Chile thereafter. However, according to Piffaut (2009), "during World War I, Germany was able to produce nitrate artificially, ending the era of the 'white gold' for Chile" (Piffaut, 2009, pg. 92). Thus, Chile experienced a sudden drop of price in the products that it depended on for export. During the era of the Great Depression, Chile

was one of the economies that suffered the most as per capita GDP fell by 47 percent and exports by 79 percent. (Piffaut, 2009, pg. 92).

However, economic turmoil was not the only event that affected Chile during this time. As was the case with most of the other Latin American countries, Chile was a victim of military coup d'états, social unrest, and dictatorships. A military coup led by General Luis Altamirano in 1924 set off a period of great political instability that lasted until 1932. The longest lasting of the ten governments between those years was that of General Carlos Ibáñez del Campo, who briefly held power in 1925 and then again between 1927 and 1931 in what was a de facto dictatorship.

Shortly after this period, the Chilean government established the Chilean Economic Development Agency (Corporacion de Fomento de la Produccion, CORFO), in 1939. Its purpose was to promote economic development through the creation of state-owned enterprises and the protection of specific industries. Piffaut (2009) states that, the manufacturing industry was protected with high tariff and non-tariff barriers (NTBs), as well as with multiple exchange rates" (Piffaut, 2009, pg. 92). These policies continued to be implemented between 1940 and 1970.

In the presidential elections of 1970, Senator Salvador Allende, of the Chilean Socialist Party, came to power. In response to what were believed to be socialist programs, and after pressure from the United States, an economic depression that began in 1972 induced capital

flight, plummeting of private investment, and a widespread withdrawal of bank deposits. Production, in turn, fell dramatically and unemployment rose. In order to fight the crisis, Allende adopted measures including price freezes, wage increases, and tax reforms, to increase consumer spending and redistribute income downward. However, by 1973, inflation was skyrocketing and strikes were performed daily. Thus, in the same year, a military coup commanded by General Augusto Pinochet overthrew Allende on September 11, 1973. As the military bombarded the national palace, it is believed that Allende committed suicide. After the military junta of 1973 was in place, Piffaut notes, “ the economy moved from being highly intervened and centralized towards a laissez-faire, market-oriented economy (Piffaut, 2009, 93). The new regime hired a selected group of economists trained at the University of Chicago, known as 'Chicago boys', to reshape the entire economic system.

Among the most important changes, the new economic policy focused on price liberalization, an aggressive opening of the economy to trade and international capital flows, and a reduction of the size of government with many state-owned enterprises privatized” (Piffaut, 2009, 93). Furthermore, one of the most important reforms was the trade reform where all non-tariff barriers were removed and tariffs were lowered to 10 percent across the board.

However, already by the first year, the military junta’s government, led by Pinochet, was marked by systematic human rights violations across the country. It was not until 1989 that Chile would again see democratic elections. According to Piffaut (2009) since 1991, no major economic policy shifts have taken place in the Chilean economy even though the last two

democratic governments have been more aligned with a socialist doctrine than a neo-liberal way of thinking” (Piffaut, 2009, pg. 95). More recently however, in January 2006, Chileans elected their first female president, Michelle Bachelet Jeria, of the Socialist Party, defeating Sebastián Piñera, of the National Renewal party. In January 2010, Chileans elected Sebastián Piñera as the first rightist president in 20 years, defeating former President Eduardo Frei Ruiz-Tagle for a four-year term succeeding Bachelet.

Currently, according to the CIA World Factbook, Chile has a market-oriented economy characterized by a high level of foreign trade and a reputation for strong financial institutions and sound policy that have given it the strongest sovereign bond rating in South America (CIA World Factbook, 2011). Exports account for more than one-fourth of GDP, with commodities making up some three-quarters of total exports. Copper alone provides one-third of government revenue.

Dominican Republic-

The Dominican Republic has a similar economic and political background of crisis and instability that has diminished with the passing of the years. The Dominican Republic gained its independence from Spain in what is called the ephemeral independence in 1821. Nine weeks after this declaration of independence, Jean-Pierre Boyer and his Haitian army invaded the Dominican Republic, reason why it is called the ephemeral independence. It wasn't until February 27th, 1844 when the Dominican Republic achieved its independence.

However, renewed Haitian invasions occurring in 1844, 1845–49, 1849–55, and 1855–56 threatened the new republic. Locally, archrivals Pedro Santana and Buenaventura Báez held power most of the time, both ruling arbitrarily. They promoted competing plans to annex the new nation to another power: Santana favored Spain, and Báez the United States. Not long after, Santana succeeded in annexing the Dominican Republic to Spain until the War of Restoration was won by Dominican revolutionaries August 16th, 1865. With the established calm of the time, the sugar industry was modernized, and “the country attracted foreign workers and immigrants, both from the Old World and the New” (Hall, 2000, pg. 10).

After the political turmoil, dictatorships and military-authoritarian leaders, called “caudillos,” ruled the country. After the assassination of Ulises Heureaux, former dictator, the country lived relative calm political periods. In 1911, president Ramon Caceres, who had assassinated Heureaux, was murdered and a period of political strife began once again. The United States and the Wilson administration demanded the Dominican government to elect a provisional president, however, when he was overthrown, the United States invaded the Dominican Republic in 1916. The invasion would last until 1922.

After the invasion, President Horacio Vasquez was prevented from running in the 1930s elections through a military coup led by General Rafael Leonidas Trujillo, then commander of the army. Although the police state established by General Trujillo was one of the most violent in Latin America, the Dominican Republic experienced considerable economic growth through progress in healthcare, education, and transportation, with the building of hospitals and clinics, schools, and roads and harbors. Trujillo also carried out an important housing construction

program and instituted a pension plan. He finally negotiated an undisputed border with Haiti in 1935 and paid-off the countries' foreign debt in 1947.

For a long time, the US and the local elite supported Trujillo, in spite of his brutal use of force and the secret police, and his political assassinations. Trujillo also renamed cities, national monuments, and even geographic features in his name. For example, the capital city, Santo Domingo, was renamed Trujillo City (Ciudad Trujillo) and the Caribbean's largest mountain, Duarte Peak, was renamed Trujillo Peak. However, the end of the regime began with the assassination of the Mirabal sisters (also known as the Butterflies). These sisters were a pillar in the fight against the regime. Being part of the opposition they pressured the regime and moved the people of the Dominican Republic against Trujillo. With their assassination and his failed attempt to assassinate Venezuelan president, Romulo Betancourt, the international community was alarmed and the United States withdrew their support for Trujillo, thought of by the U.S. as a necessary evil against the spread of communism. Trujillo himself was assassinated not long after these events, May 30st, 1961.

The post-Trujillo era was one of political instability as well. The first democratic elections were held and in 1962, Juan Bosch, became the new president of the republic. However, false rumors about his ties to socialism brought about the end of his term seven months after he was sworn in. Changes advanced by Bosch through the constitutional reform of 1963, such as land reform, struck conservative landholders and military officers as radical and threatening, particularly when juxtaposed against three decades of somnolent authoritarianism under the Trujillo regime. The hierarchy of the Catholic Church also resented the secular nature of the

new constitution, in particular its provision for legalized divorce. After the emergence of an illegitimate junta to gain control of the country, the Dominican Republic was at the brink of widespread unrest. A civil war soon ensued and after the United States' second occupation the war ended with the election of Joaquin Balaguer who remained off and on power until 1996.

After international pressure following rigged elections, Leonel Fernandez gained the presidency in 1996. Fernandez oversaw a fast-growing economy, averaging 7.7% per year, with a drop in unemployment and stable exchange and inflation rates. Fernandez, the nation's current president, has advanced many infrastructure projects and has seen a relatively stable macro-economic environment. Although the Dominican Republic has long been viewed primarily as an exporter of sugar, coffee, and tobacco, in recent years the service sector has overtaken agriculture as the economy's largest employer, due to growth in tourism and free trade zones. The economy is highly dependent upon the US, the destination for nearly 60% of exports. Remittances from the US amount to about a tenth of GDP, equivalent to almost half of exports and three-quarters of tourism receipts (CIA World Factbook, 2011).

Venezuela-

Venezuela achieved independence June 24th, 1821. According to Crow (1980), "the discovery of massive oil deposits in Lake Maracaibo during World War I would prove pivotal for Venezuela, and soon transformed the basis of its economy, from a heavy dependence on agricultural exports. It prompted an economic boom that would last into the 1980s; by 1935, Venezuela's per capita gross domestic product was Latin America's highest" (Crow, 1980, pg.616-617).

Venezuela, similar to Chile and the Dominican Republic, suffered from political instability and authoritative rule. In 1945, a civilian-military coup deposed the previous dictator, and under Romulo Betancourt, ruled Venezuela until democratic elections were held in 1947. Unfortunately, this government was short-lived as a military coup, led by Marcos Perez Jimenez and Venezuela's defense minister Carlos Delgado Chalbaud overthrew the government in 1948. Jimenez was the most powerful man in the junta, and was suspected of being behind the death in office of Chalbaud, who died in 1950 after being kidnapped. When the junta unexpectedly lost the election it held in 1952, it ignored the results and Perez Jimenez was installed as president, where he remained until 1958.

After several guerilla movements and political crises, the election of Carlos Andres Perez in 1973, which coincided with the 1973 oil crisis, saw Venezuela's income explode as oil prices soared. This led to massive increases in public spending, but also increases in external debts, which continued into the 1980s when the collapse of oil prices during the 1980s crippled the Venezuelan economy. As the government started to devalue the currency in February 1983 in order to face its financial obligations, Venezuelans' real standard of living fell dramatically. A number of failed economic policies and increasing corruption in government led to rising poverty and crime, worsening social indicators, and increased political instability (Schuyler, 2001, pg.10).

After the impeachment of Venezuelan president Carlos Andres Perez in 1993, confidence in the existing political parties began to fall. In 1999, Hugo Chavez became the new, and current, president of Venezuela. His reform program was aimed at redistributing the

benefits of Venezuela's oil wealth to the lower socio-economic groups by using it to fund programs such as health care and education. In April 2002, Chavez was briefly ousted from power in a coup but he was returned to power after two days as a result of popular demonstrations in his favor and actions by the military (Maya, 2005, pg.16). Chavez also remained in power after an all-out national strike that lasted more than two months in December 2002 – February 2003, including a strike/lockout in the state oil company PDVSA, and an August 2004 recall referendum. He was elected for another term in December 2006. These elections were monitored by the Carter Center, which in an extensive report concluded that the elections were "fair, transparent and without serious irregularities" (Carter Center, 2007).

Currently, Venezuela remains highly dependent on oil revenues, which account for roughly 95% of export earnings, about 55% of the federal budget revenues, and around 30% of GDP. The nationwide strike between December 2002 and February 2003 had far-reaching economic consequences. Real GDP declined by around 9% in 2002 and 8% in 2003, but economic output since then has recovered strongly (CIA World Factbook, 2011). Fueled by high oil prices, record government spending helped to boost GDP by about 10% in 2006, 8% in 2007, and nearly 5% in 2008, before a sharp drop in oil prices caused a contraction in 2009-10. This spending, combined with recent minimum wage hikes and improved access to domestic credit, has created a consumption boom but has come at the cost of higher inflation - roughly 32% in 2008, and slowing only slightly to 30% in 2010.

Furthermore, Venezuelan president Hugo Chavez has made efforts to increase the government's control of the economy by nationalizing firms in the agriculture, financial, construction, oil, and steel sectors. These actions have hurt the private investment environment, reduced productive capacity, and slowed non-petroleum exports (CIA World Factbook, 2011).

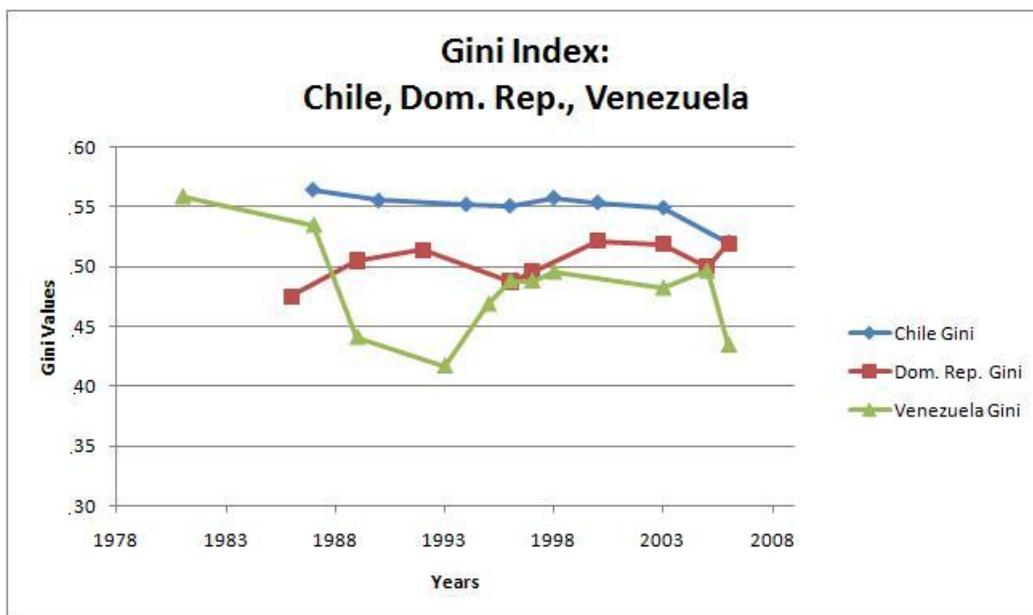
FINDINGS:

Income Inequality-

As you may have noted, these three Latin American countries have had similar pathways towards democracy, although results have not be identical. Chile, the Dominican Republic, and Venezuela all differ with regards to freedom to trade, education levels, level of economic growth, and regime type. Thus, we expect different results for each country in terms of their income distribution.

After proper analysis and comparison of the data for our three cases, the results were surprising. Venezuela, according to the Gini index, is the country with most equal distribution of income, followed by the Dominican Republic and Chile, which had the least amount of equality of all. Figure 2 below shows the distribution of the Gini scores for each country.

FIGURE 2:



Source: Author's computations, data: World Bank, *World Development Index*

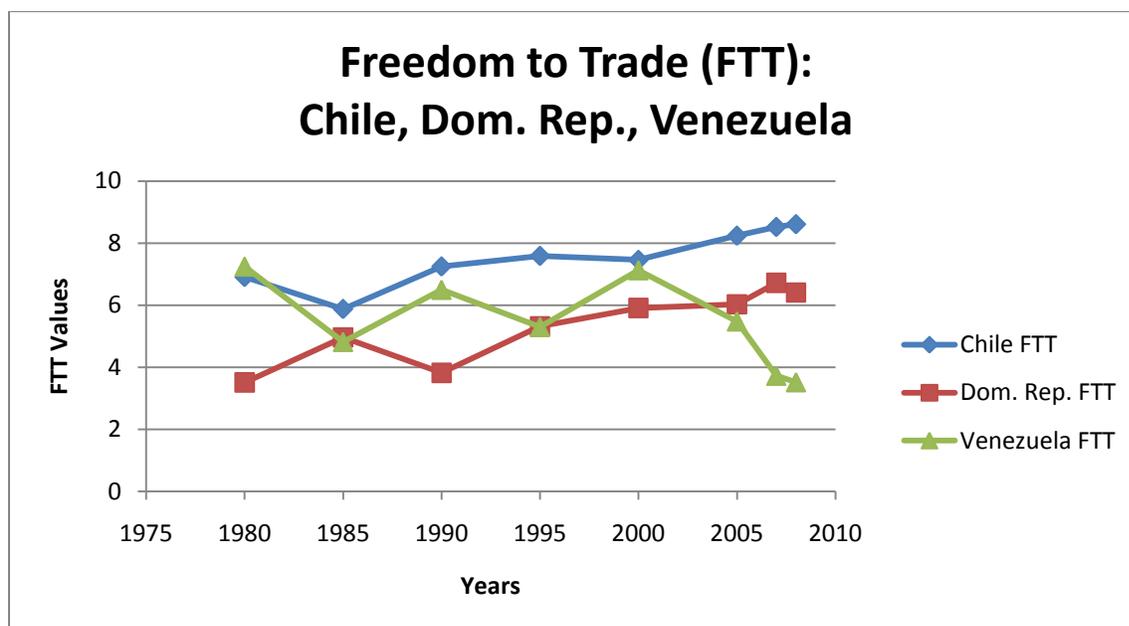
As you may note from the table above, Chile has had, overall, the most inequality out of the three. Although there are shifts of great magnitude for Venezuela, it has remained as the country with most equal income distribution. Thus, Venezuela ranks the highest in level of income equality, followed by Dominican Republic and Chile. Furthermore, it is worth noting that, according to the CIA World Factbook, the Dominican Republic is a country “marked by income inequality;” however, from the data we can conclude that Chile seems to be more unequal than the Dominican Republic.

Trade-

Now that the income distribution scores have been shown, we may see how our independent variables affect income inequality. In terms of freedom to trade, we can see from

Figure 3 below that although Chile has had, and continues to have, better freedom to trade scores, it has the greatest amount of inequality (as shown in Figure 2).

FIGURE 3:



Source: Author's computations, data: World Bank, *World Development Index*

In the case of our other two cases, Dominican Republic (as shown above) has usually had less freedom to trade than Venezuela until recently. Thus, we might infer from the data that it should be enjoying more income equality than Venezuela, surprisingly, this is not the case. Regarding these two countries' past freedom to trade scores, it seems that the theory fits the model. In this specific case, Dominican Republic is usually below Venezuela in terms of freedom to trade for the years before 2005. Likewise, it has also less equality than Venezuela, as shown in Figure 2.

Thus, the theory seemed to hold well for these two countries until 2005. Actually, after close observation of the data, it seems that whenever there were significant increases in freedom to trade, income inequality seemed to decrease in the case of Venezuela. In fact, the early 1990's data for Dominican Republic follow a similar trend; as freedom to trade decreased, inequality increased in the Dominican Republic. Note that the significant variations of Venezuelan freedom to trade are caused by economic crisis in the 1980's and 1990's. The falling trend after the year 2000 might be related to economic crisis worldwide after the dot-com bubble, and more importantly, following Hugo Chavez's presidency which began in 1999 and is still ongoing.

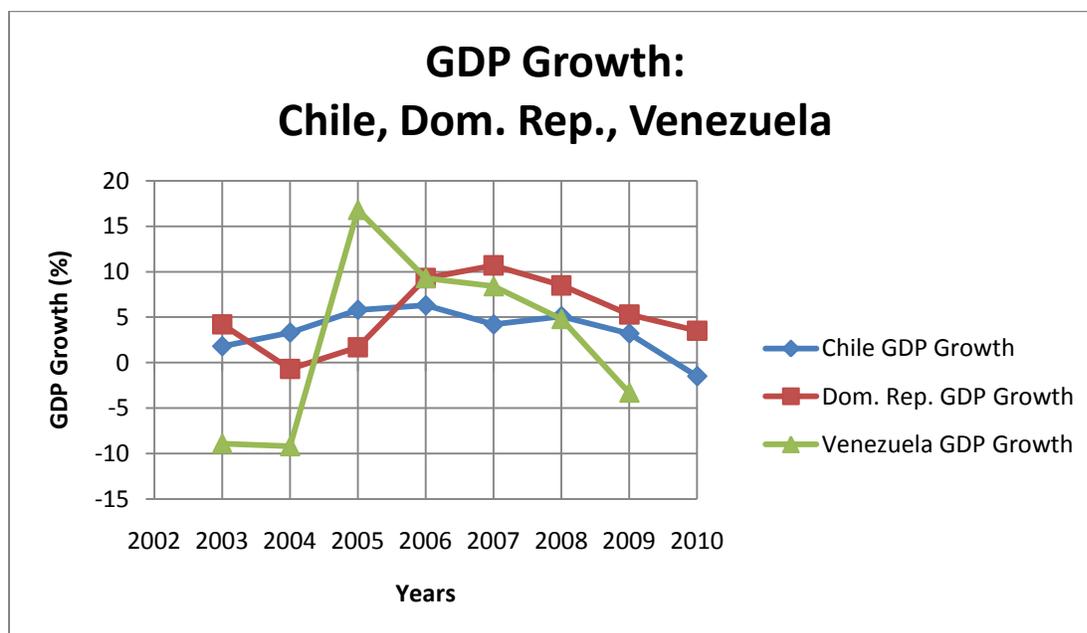
Furthermore, when considering each countries' trade volume as a percentage of their GDP, there are interesting results. Of the three, the Dominican Republic shows the greatest amount of trade as a percentage of GDP. However, as seen previously, the Dominican Republic is second to Venezuela in terms of income equality. Venezuela, in this case, is the country with the least amount of trade as a percent of GDP and yet, it remains the country with the highest level of income equality. Chile, which just recently surpasses Dominican Republic in this regard, is the least equal country.

These results were certainly unexpected since the volume itself (the amount of capital moved by the trade) could not perfectly explain the results. It could be argued that the amount of capital involved in the trade by Chile is much more than that of Venezuela, for example. Yet, even if Chile had the most capital-intensive trade and therefore the least equality, it does not follow that Venezuela, having the second most capital-intensive trade, is the most equal.

Economic Growth-

Economic growth, our second independent variable, could have a greater impact on income distribution. Measuring economic growth by using inflation adjusted, GDP growth produced interesting results as well. This indicator places the Dominican Republic as the country with the highest average growth of the three. Comparing these results to that of Venezuela, which only grew faster than the Dominican Republic for a brief one-year period, the data implies that the Dominican Republic should have the highest level of income equality. This is not the case. On the other hand, Chile, which has shown steadier and higher levels of growth before 2006, remains the least equal country of the three as shown by Figure 4 below.

FIGURE 4:

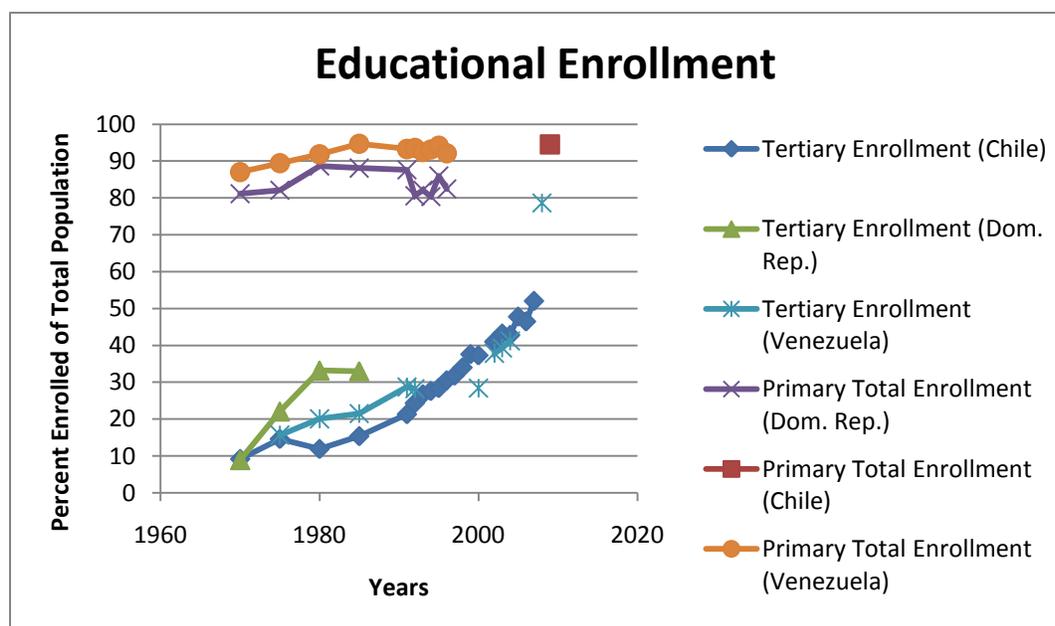


Source: Author's computations, data: World Bank, *World Development Index*

Education-

In the case of our other independent variable, education, the results remain equally surprising. Contrary to what was expected, Chile as the most unequal country of the three, presents the highest levels of primary and tertiary school enrollment. Venezuela, which follows Chile in these categories, has the highest levels of income equality. Finally, the Dominican Republic, which has the lowest levels of enrollment of the three, has more equality than Chile, the country with highest levels of enrollment. Figure 5 below shows the results.

FIGURE 5:



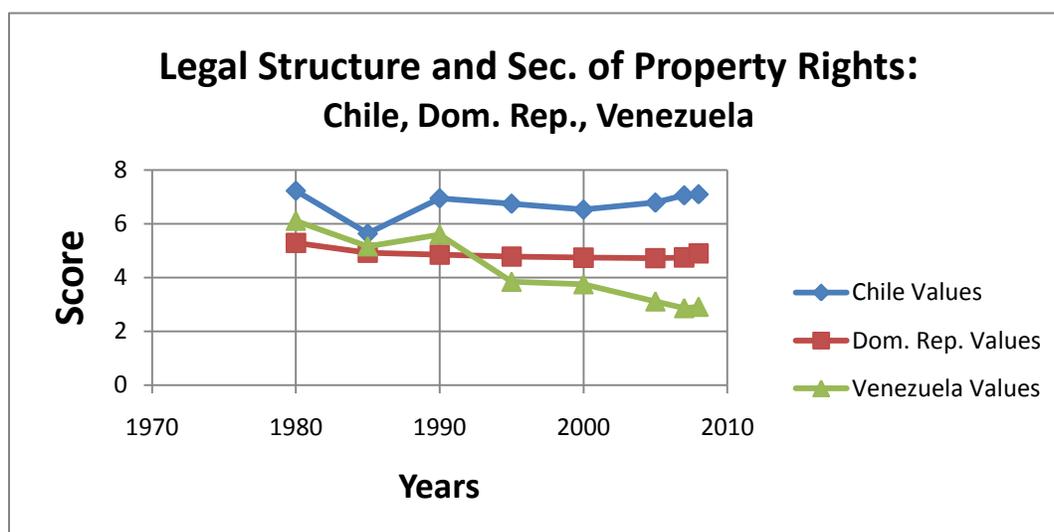
Source: Author's computations, data: World Bank, *World Development Index*

Political Factors-

So far, economic variables have fallen short in explaining income distribution in these different countries. However, political and institutional factors also come into play. The data shown by the *Economic Freedom in the World Report 2010* regarding governmental legal structure and security of property rights delivers important observations.

According to this report, Chile has always ranked better than the Dominican Republic or Venezuela. Thus, income equality levels should be highest in Chile. Nevertheless, Chile is continues to exhibit the lowest levels of income equality. Likewise, although Venezuelan scores have continued to significantly decrease, the income equality level trend continues to be higher than that of the other two countries. In this same way, the Dominican Republic, which has had continued stability over Venezuela in terms of scoring, displays a lower level of income equality than Venezuela (as shown by Figure 6 below).

FIGURE 6:



Source: Author's computations, data: World Bank, *World Development Index*

Taking the data a step further, we analyze each country's score according to the Corruption Perception Index. The data shown by the index is shown in Table 1 below:

Table 1:

Country	2008	2009	2010
Chile	6.9	6.7	7.2
Dom. Rep.	3	3	3
Venezuela	1.9	1.9	2

Source: Author's computations, data: Transparency International, *Corruption Perceptions Index 2010*

As you may note from the information above, Chile has received a "very clean" rating and yet it shows the least amount of income equality, contrary to the thesis displayed by Boix on the relation between corruption and income equality. Venezuela, on the other hand, continues to have the highest level of income equality in spite of its "highly corrupt" categorization. Please note that although there is data going back only up to 2008, the difference in scores is sufficiently significant that a reversal of places between Chile and Venezuela (for example) is very unlikely.

Also, it is important to note the data available by the *Freedom in the World 2011 Report*. According to this data, Chile is the country with the highest degree of freedom out of the three, scoring the highest possible score (1) in both political rights and civil liberties. However, as it has continued to be the case, it still is the country that presents the least amount of income equality. Conversely, Venezuela remains the country with the highest level of income equality

despite its “Partly Free” rating and scoring 5 in both political rights and civil liberties out of a lowest score of 7. Furthermore, the report shows a decreasing trend for Venezuela due to, “a raft of legislation that granted President Hugo Chavez wide-ranging decree powers, tightened restrictions on civil society and the media, and attempted to vitiate opposition gains in September 2010 parliamentary elections” (Freedom of the World, 2011). In spite of a decrease in freedom scores, equality continues to increase in Venezuela.

We now move to the results obtained from data on the level of government expenditure on social programs. A study done by Ferreira and Robalino (2010) will be used. Their data demonstrates that, in Chile, social programs occupy 8.9% of GDP and costs US\$535 per capita in 2000 constant dollars. Venezuela comes in second with 8.1% and US\$ 346, followed by the Dominican Republic with 5.4% and US\$160. Thus, according to the expectations, Chile which spends the most on social programs relating to health, social security, and other benefits, should exhibit the highest levels of income equality. However, Chile is the country with least income equality. Furthermore, the Dominican Republic (ranked 3rd in expenditure levels) shows higher levels of income equality than Chile. The data is shown on the following page for better image resolution. The data in question is marked within the red-dotted lines :

Image 2:

Table 2: Social expenditures in LAC: per capita and as a share of GDP

Country	as a share of GDP (%)				Dollars per capita US\$ constant (2000)			
	Health	Social Security	Social Assistance and Other	Total	Health	Social Security	Social Assistance and Other	Total
El Salvador	1.69	0.04	1.2	2.9	34	1	26	61
Honduras	3.44	0.26	0.1	3.8	36	3	1	40
Ecuador	1.28	2.36	0.2	3.8	19	36	4	59
Guatemala	1.09	0.98	2.0	4.1	16	14	33	63
Jamaica	2.78	0.46	1.2	4.5	81	13	37	131
T&T	2.18	1.44	1.3	4.9	203	134	118	455
Peru	1.52	3.65	0.0	5.2	37	101	1	139
Paraguay	1.7	2.39	1.2	5.3	16	34	7	57
Dom. Rep.	1.54	1.28	2.6	5.4	46	38	76	160
Nicaragua	3.47	--	2.9	6.3	29	0	25	54
Mexico	2.67	2.11	1.8	6.6	163	129	108	400
Venezuela R. B.	1.82	4.64	1.6	8.1	82	197	67	346
Chile	2.79	5.86	0.2	8.9	158	365	12	535
Colombia	2.2	7.21	0.6	10.0	49	166	14	229
Bolivia	3.4	4.39	3.4	11.2	35	45	35	115
Costa Rica	4.95	5.24	1.7	11.9	220	237	74	531
Panama	5.69	6.02	1.2	12.9	240	254	49	543
Uruguay	1.75	12.47	0.3	14.6	111	791	21	923
Argentina	4.58	9.47	1.7	15.7	366	739	118	1223
Cuba	6.46	8.52	2.6	17.6	218	270	93	581
Brazil	4.92	12.98	1.1	19.0	180	476	35	691

Source: Social Database ECLAC.

Source: Ferreira, Robalino (2000), *Social Protection in Latin America, Achievements and Limitations*

These counter-intuitive results can be explained by specifically looking at the “Social Assistance and Other” category in the table. This area focuses on social assistance programs that have an immediate effect on income distribution. Social Security in Latin America as defined by Rofman has two phases, “the first is related to the period in which a worker contributes to the system and accrues the right to benefits. This phase is coverage of the economically active population. The second is related to the receipt of monetary benefits when the individual reaches an advanced age, that is, coverage of the elderly” (Rofman, 2005, pg. 9). For this reason, we believe that social assistance programs have a much more immediate effect on poverty and income distribution

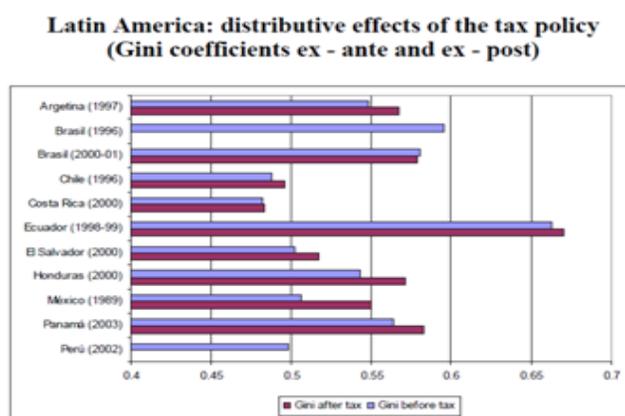
The table shows that Chile, which leads the way in social expenditure compared to the Dominican Republic and Venezuela, actually spends the least in social assistance programs. In contrast, because the Dominican Republic spends more than Chile in this area, the expectation is that it will have less income inequality. As shown previously, this is exactly the case. A social assistance program, “Solidaridad” or solidarity, is a testament of the increased expenditure by the Dominican Republic. However, Venezuela, which ranks 2nd after the Dominican Republic in terms of expenditure in social assistance programs, remains the country with lowest inequality. Thus, other factors must contribute to the distribution of wealth in Venezuela.

Finally, we observe the different marginal income tax rates for Chile, the Dominican Republic, and Venezuela using the tables located in the appendix section. It is interesting to note that Venezuela has, comparatively, the broadest taxation system in place. In Venezuela no income is exempt of taxation. However, those low income groups that are taxed a 6% rate in Venezuela, would be exempt from taxes in both Chile and the Dominican Republic. The highest tax bracket in Venezuela is taxed 34%, yet, the cut-off income for this bracket is higher than that of the Dominican Republic and lower than that of Chile. With this in mind, we can sensibly say that taxation has little to no effect in income distribution. Although Venezuela taxes a lower rate than Chile and the Dominican Republic, it does not exempt any group from taxes. Thus, it is evident that lower-income groups are not helped through taxation, as they would be helped if they were to be exempt.

Moreover, the highest bracket in the Dominican Republic contains more low incomes than what the highest brackets in Chile and Venezuela contain. For example, someone earning US\$ 1,700 per month would be taxed 34.2% and placed in the highest bracket in Dominican Republic. That same person would be taxed 5% in Chile's second lowest bracket and 9% in Venezuela's second lowest bracket as well. This, of course, negatively affects those people in the middle-high and middle-low classes, who pay the same amount of taxes as those who earn twice, or even three times the amount income they earn per month. Taking into consideration that the Dominican Republic's income distribution is more equal than that of Chile, the Dominican taxation system must not have a major effect in income distribution.

Following the observed data we note that Chile remains the most unequal country of the three in spite of having the largest tax rate, 40%, and the highest cut-off income level for those exempt of taxes. Thus, the Chilean taxation system seems not to affect income distribution. In fact, by looking at Chile's pre- and post-tax gini index shown in the graph below, we note that inequality actually *increases* post-tax.

Image 3:



Source: Gómez Sabaini (2005b)

In terms of corporate taxation we observe interesting results showed in the graph below.

Image 4:

Table 9. Corporate Income Tax Rates, 1986-2000
(Percent of taxable income)

South America, Central, and North America	1986	1992	1997	1998	1999 or 2000
Argentina	0.0 - 33.0	- 20.0	33.0	35.0	35.0
Bolivia	0.0 - 30.0	0.0	25.0	25.0	25.0
Brazil	29.0 - 50.0	25.0 - 40.0	15.0 - 25.0	15.0 - 25.0	15.0
Chile	10.0 - 37.0	15.0 - 35.0	15.0 - 35.0	15.0 - 35.0	15.0
Colombia	40.0	30.0	35.0	35.0	35.0
Costa Rica	0.0 - 50.0	30.0	30.0	30.0	30.0
Dominican Republic	0.0 - 49.3	0.0 - 49.3	25.0	25.0	25.0
Ecuador	0.0 - 59.0	0.0 - 44.4	25.0	25.0	15.0 - 25.0
El Salvador	0.0 - 30.0	0.0 - 25.0	25.0	25.0	25.0
Guatemala	0.0 - 42.0	12.0 - 34.0	25.0	30.0	30.0
Honduras	0.0 - 55.0	0.0 - 40.2	15.0 - 30.0	15.0 - 35.0	15.0 - 35.0
Mexico	5.0 - 42.0	0.0 - 35.0	34.0	34.0	35.0
Nicaragua	0.0 - 45.0	0.0 - 35.5	30.0	30.0	30.0
Panama	0.0 - 50.0	2.5 - 45.0	30.0 - 34.0	30.0 - 34.0	30.0
Paraguay	0.0 - 30.0	0.0 - 30.0	25.0 - 30.0	25.0 - 30.0	25.0 - 30.0
Peru	0.0 - 40.0	0.0 - 30.0	30.0	30.0	30.0
Uruguay	0.0 - 30.0	0.0 - 30.0	30.0	30.0	30.0
Venezuela	18.0 - 67.7	20.0 - 67.7	15.0 - 34.0	15.0 - 34.0	15.0 - 34.0
Simple average	3.6 - 43.3	5.3 - 36.5	19.2 - 29.7	19.2 - 30.4	17.5 - 28.6

Sources: Secondary published sources such as publications of tax summaries by Price Waterhouse, Coopers and Lybrand, International bureau of Fiscal Documentation; and other similar sources.

Shown by the data above, we find that Chile is the country which taxes individuals the most, at 40% and has the lowest tax rate on corporation, 15%. Although we cannot determine causality between tax rates and income inequality, it does seem that there is some correlation. In this same way, Venezuela, which taxes corporation the most and individuals the least, exhibits the greatest amount of income equality.

Many scholars argue that income taxes have been very unproductive in Latin America. According to Bernardi et. al, "the normal explanation for this result is the importance of the informal sector in Latin America, and its impact on tax evasion" (Bernardi et. al, 2007, pg. 8). Vito Tanzi also expresses his concern for income taxes in Latin American when saying, "With very few exceptions Latin American countries continue to be allergic to income taxes. Thus, most Latin American countries continue to collect little from taxes on income. The reasons for this trend are several: (a) very large personal exemptions that often wipe out much of the legal tax bases; (b) large legal deductions often for expenses which in other parts of the world are not allowed; (c) reluctance to tax financial incomes out of fear that savings would escape to tax free countries or to tax-free accounts in the United States or elsewhere; (d) falling tax rates; (e) tax administrations that still make possible high tax evasion" (Tanzi, 2000, pg. 24).

For this reason, it is plausible that Venezuelan levels of income equality are achieved by the use of an effective and successful corporate taxation system.

CONCLUSIONS:

Throughout this thesis it has been shown that there are many and distinct factors that may affect income inequality in Latin America and the Caribbean. However, it has been the purpose of this study to delineate the effects of trade, economic growth, education, regime type, and institutional characteristics on the distribution of income.

It is important to note that all of these factors may have different impacts on income inequality and ignoring one factor over another is a mistake. Trade showed little correlation

with income inequality, however, it did seem to explain sharp increases and decreases in income distribution in the short-run, possibly the effects of skilled and unskilled laborers gains and losses. Economic growth and education seemed to cause no effect on income distribution. Although Chile displays the greatest amount of tertiary enrollment, thus potentially having the most skilled labor, it is the most unequal country of the three.

When reviewing the governmental and institutional variables: legal structure, security of property rights, corruption perception, degree of country freedom, and government expenditure on social programs, the results were surprising. The data seems to imply that there must be other factors that affect income distribution in these countries. However, when looking at only expenses in social assistance as a percent of GDP, we found that Chile has the highest level of inequality and spends the least in social assistance programs, evidence of Chilean inequality. However, Venezuela remains a special case, as it spends less than the Dominican Republic but enjoys higher levels of income equality. Furthermore, even though Venezuela presents deplorable scores in corruption perception, political rights and civil liberties, it still has the highest level of income equality out of the three countries.

Also, when observing taxation systems we have found compelling data that suggest that increasing equality in income distribution may be directly affected by taxation systems. It seems that Venezuelan levels of income equality have been achieved through a successful implementation of a taxation system focused on the collection of corporate income taxes. If the scholars are correct, because personal income is far more evasive and costly to collect, a focus on corporate taxation is the key to increasing levels of income inequality. As seen before, the

fact that Chile imposes the most taxes on individuals, the least on corporations, and that Chile shows the highest levels of income inequality, may be evidence supporting the theory that a system focused on the collection of corporate taxation in Latin American countries may actually decrease income inequality.

Yet, the fact must be acknowledged that, because of the oil wealth, Venezuelan workers "enjoyed the highest wages in Latin America" (McCaughan, 2004, pg.31). This situation was reversed when oil prices collapsed during the 1980s. The economy contracted, and according to McCaughan (2004), the number of people living in poverty rose from 36% in 1984 to 66% in 1995. (McCaughan, 2004, pg.32). Thus, the oil industry in Venezuela may have an important impact on income distribution.

Also, the influence of Socialist and Communist parties in Venezuela is much stronger than in Chile or Dominican Republic. In Venezuela's case, the ruling party is a leftist bloc led by United Socialist Party of Venezuela (PSUV) and its major allies Fatherland for All (PPT) and the Communist Party of Venezuela (PCV). In the case of the Dominican Republic, the incumbent party is the Dominican Liberation Party (PLD), usually characterized as center-left, yet increasingly conservative. In opposition, the Dominican Revolutionary Party (PRD) is characterized as being social-democratic yet far from leftist.

Chile's case correlates to the data shown. In the last legislative elections in Chile, the Communist Party won 3 out of 120 seats in the Chamber of Deputies for the first time in 30 years since the Communist Party was outlawed as such during the Pinochet's dictatorship. Currently the incumbent party in Chile is a coalition named Coalition for Change which is

considered to be center-right. It seems that this variable could also have an effect Chilean gini scores.

Moreover, by looking at the percent of GDP held by the richest 10% of each country we find that Chile is most unequal with 10% of the richest people holding 41.7% of GDP in 2006. Dominican Republic follows with the richest 10% holding 41.0% in 2006 and 37.7% of GDP in 2007. In contrast, Venezuela shows that its richest 10% hold 32.7% of GDP in 2006, a much lower figure than that in the previously mentioned countries.

We must keep in mind, however, that other factors such as constituent and cultural identity, the role of unions, political parties, and government composition may have stronger influences on income distribution in Latin America and the Caribbean. Furthermore, I do understand that the data is limited and thus, a better collection of higher quality data is an important next step. Also, an analysis based on multivariate regressions would be very beneficial to our purpose in finding the effects of distinct factors on income inequality. However, it may well be that inequality is simply embedded in Latin American culture, if this is the case, a real change in ideologies is in order; this is, of course, something much easier said than done. In the future, more studies attempting to explain the high inequality found in this region of the world will be important and useful to the political economy field and, more importantly, to the countries themselves.

Bibliography

- Alderson, A., & Nielsen, F. (2002). Globalization and the Great U-Turn. *The American Journal of Sociology*, 1244-1299.
- Avi-Yonah, R., & Margalioth, Y. (2006). TAXATION IN DEVELOPING COUNTRIES: SOME RECENT SUPPORT AND CHALLENGES TO THE CONVENTIONAL VIEW. 1-32.
- Bank, W. (2011). World Development Indicators. Retrieved 2011, from World Bank.
- Bárcena, e. a. (2009). *The reactions of Latin American and Caribbean governments to the international crisis*:. Santiago de Chile: United Nations ECLAC.
- Bernardi, L., Barreix, A., Marenzi, A., & Profeta, P. (2007). TAX SYSTEMS AND TAX REFORMS IN LATIN AMERICA. *Società Italiana di Economia Pubblica* , 1-155.
- Blanco, e. a. (2007). *Observing the 2006 Presidential Elections in Venezuela*. Atlanta: The Carter Center.
- Blanco, L. (2007). *ESSAYS ON ECONOMIC DEVELOPMENT IN LATIN AMERICA* .
- Boix, C. (2009). The Conditional Relationship Between Inequality and Development. *Political Science and Politics* , 645-649.
- Bradt, D. (2000). *Inequality and Democracy in Latin America: A Comparative, Historical, and International Perspective*. Tuscaloosa: University of Alabama.
- Brown, C. (2008). *THE ROAD TO DEVELOPMENT IS PAVED WITH GOOD INSTITUTIONS: THE POLITICAL AND ECONOMIC IMPLICATIONS OF FINANCIAL MARKETS*. University of North Texas.
- CIA World Factbook. (2011, March).
- Cline, W. (1997). Trade and Income Distribution. *Institute for International Economics* .
- de Ferranti, D., Perry, G., & Ferreira, F. (2003). *Inequality in Latin America and the Caribbean: Breaking with History?* Washington DC: The International Bank For Reconstruction And Development/ The World Bank.
- Durham, J. (1998). *Economic and Political "Institutions" and Growth: Some Econometrics*. Columbia University.
- Edwards, S. (1997). Trade Policy, Growth, and Income Distribution. *The American Economic Review* , 205-210.
- Ferreira, F., & Robalino, D. (2010). *Social Expenditure in Latin America: Achievements and Limitations*. The World Bank.
- Gwartney, J., Joshua, H., & Lawson, R. (2010). *Economic Freedom of the World Report: 2010 Annual Report*. Fraser Institute.

- Hanushek, E., & Kimko, D. (2000). Schooling, Labor-Force Quality, and the Growth of Nations. 1184-1208.
- Higgins, M., & Williamson, J. (1999). Explaining Inequality the World Round: Cohort Size, Kuznets Curves, and Openness. 1-56.
- Houle, C. (2010). *Inequality, Economic Development and Democracy*. Rochester.
- Huber, e. a. (2006). Politics and Social Spending in Latin America. *American Sociological Review* , 943-963.
- International, T. (2010). *Corruption Perceptions Index*.
- Litwin, C. (1998). Trade and Income Distribution in Developing Countries. *Department of Economics, Göteborg University* , 1-39.
- McCaughan, M. (2004). *The Battle of Venezuela*. London: Latin American Bureau.
- Mobarak, A. (2002). *Democracy, Volatility, and Development*. University of Maryland, College Park.
- Ning, G. (2010). Can educational expansion improve income inequality? Evidences from the CHNS 1997 and 2006 data. *Economic Systems* , 397-412.
- Perez, A. (2010). *Evolución y determinantes de la pobreza Monetaria en la Republic Dominicana*. Santo Domingo: Ministerio de Economía, Planificación y Desarrollo.
- Piffaut, P. V. (2009). *Education and Economic Growth in Chile*. New York: Columbia University.
- Puddington, A. (2011). *Freedom in the World 2011*. Freedom House.
- Reuveny, R., & Li, Q. (2003). Economic Openness, Democracy, and Income Inequality: An Empirical Analysis. *Comparative Politics Studies* .
- Richardson, D. (1995). Income Inequality and Trade: How to Think, What to Conclude. *The Journal of Economic Perspectives* , 33-55.
- Rofman, R. (2005). *Social Security Coverage in Latin America*. Washington DC: The World Bank.
- Squalli, J., & Wilson, K. (2006). *A New Approach to Measuring Trade Openness*.
- Tanzi, V. (2000). Taxation in Latin America in the Last Decade. *International Monetary Fund and Carnegie Endowment* , 1-40.
- Yanikkaya, H. (2002). Trade openness and economic growth: a cross-country empirical investigation. *Journal of Development Economics* .