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Human Capital and the Wealth of Nations:

A New Methodology for Evaluating Measurements of Social and Economic Change in Latin America and Other World Regions

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By

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LIST OF ABBREVIATIONS

DER	Dollar Exchange Rate
ECLA	Economic Commission for Latin America
HDI	Human Development Index
IMF	International Monetary Fund
OXLAD	Oxford Latin American Economic History Database
PPP	Purchasing Power Parity
PQLI	Physical Quality of Life Index
SOI	Social Opportunity Index
WDI	World Development Indicators

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ABSTRACT OF THE DISSERTATION

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Doctor of Philosophy in History

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This dissertation analyzes the economic and social development trends in Latin America utilizing multiple economic and social series. The economic section analyzes Latin America's performance using several gross domestic product series, each utilizing different methodologies. The social section analyzes Latin America's performance utilizing the Social Opportunity Index, Physical Quality of Life Index, and Human Development Index. In addition to analyzing Latin America's absolute economic and social performance, this work also compares the trends in Latin America with those in the United States for all of the series. In addition, the performance of Latin America is also compared to the world average and major world regions.

PREFACE

Since the 1960s regularly updated quantitative data for Latin America has become increasingly available for scholars of Latin America. The United Nations, the United Nations Economic Commission for Latin America, the Organization of American States, the World Bank, and the Inter-American Development Bank are just a handful of the organizations that have been regularly collecting and providing social and economic data on Latin America since the 1960s.

In spite of the availability of economic and social data, a majority of the works that attempt to analyze trends in Latin America have done so without any supporting data. Among the handful of works that do utilize economic and social data, most rely on only one type of measure, be it economic or social, and use only one data source without realizing that different methods of measurement and differences in data methodology can lead to very different conclusions. Furthermore,

Many Latin American scholars, especially adherents of dependency theory, have long asserted that both economic and social conditions in Latin America are steadily deteriorating due to the exploitation of capitalist countries. As a result of the economic crises of the 1980s that plagued Latin America, as well as the collapse of the Soviet

Union, most dependency ideology about the evils of the market system have been largely debunked. In fact, notable dependency scholars, such as Fernando Henrique Cardoso, as president of Brazil, pursued largely neo-liberal policies in direct contrast to the dependency ideology. In spite of these changes, the negative view of Latin America's social and economic trend has persisted through the present day.

The view of Latin America as falling behind the developed world was so pervasive that even non-dependency scholars accepted the premise as "fact". Although Dr. James Wilkie of UCLA was one such scholar who formerly taught the concept of the "widening gap" to his students, he was the first to actually question the basis of this premise.

In 1974 Wilkie tested the concept of the widening gap utilizing economic data for Latin America and the United States from 1951 through 1972[1]. The results showed that there was little if any widening economic gap. Presuming that the widening gap must therefore be social, Dr. Wilkie also created a social index called the Social Indicator Profile (SIP) (later renamed the Health, Education, Communication Index, then the Social Opportunity Index). The Social Indicator Profile Index directly measured social conditions between Latin America and the United States in 12 categories on a decennial basis from 1950 through 1970 (later projected back to 1940). The results demonstrated that not only was the social gap not widening, it was narrowing substantially.

In 2001, myself and Dr. Wilkie sought to update and further analyze the economic and social development trends in Latin America. In an article entitled "A Proportional

[1] James Wilkie, "Alliance for Progress", *Statistics and National Policy* (Los Angeles: UCLA Latin American Center, 1974).

Approach to Measuring the United States-Latin America GDP 'Gap' since 1940", we analyzed seven different GDP series, utilizing different methodologies to test the economic gap theory[2]. To measure the social gap, I gathered new data and projected the Social Opportunity Index forward to 2000[3].

This current work is a direct continuation of these previous efforts, though on a much larger scale in terms of the number of series and methodologies involved, the years covered, and the countries included in the analysis. For both the economic and social series, I have analyzed not only the trends between Latin America and the United States, but also included data for the world average and major world regions. The economic series have been substantially expanded: ten different economic series, each with different sources and methodologies, are analyzed to assess the economic trends in Latin America. In addition, the social analysis has now includes not only an update of the Social Opportunity Index, but two other prominent social indexes: the Physical Quality of Life Index and the Human Development Index, which likewise include data for major world regions.

This work therefore is perhaps the first to present a broad range of series, sources, and methodologies to assess Latin America's absolute economic and social performance, as well as its relative performance with the United States, the world average, and other major world regions. In addition, this work seeks to analyze the underlying sources and

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[2] Michael Ray and James Wilkie, "A Proportional Approach to Measuring the United States-Latin America GDP 'Gap' since 1940", *Statistical Abstract of Latin America*, volume 37 (Los Angeles: UCLA Latin American Center Publications, 2001).
[3] Ibid.

methodology of each series to understand how so many different (and sometimes conflicting) answers can be given in regards to the development of Latin America. While the amount of data involved, may produce a mind-numbing jungle of numbers that seem to cloud the issue, a comparison of these many series (and a closer look at their methodology and sources) is required if we are to determine which series most accurately represent Latin America.

Because there are almost limitless ways to measure change, this work can not cover many important measurements. Inequality in income and wealth is not addressed in this work because of the lack of long-term comparable data for all of Latin America. For the same reason, wage gaps by class and gender are not analyzed. Other measurements not addressed include gender equality, political corruption, political participation, food consumption, access to credit, time to establish a business, yearly patents by country, rule of law and internal safety, to mention only a few of the many measurements left out.

Two other notable exclusions are the use of national and sub-national data. In 2004, I visited the National Statistical Offices for several countries including Costa Rica, Ecuador, Peru, Bolivia, Chile, Uruguay, Paraguay, and Argentina. Although there are many important data series available at the national level, the lack of uniformity in years, population coverage, and methodology meant that creating a series for all of Latin America based on local national data would be impractical.

Although my work here addresses the important issue of Latin America's trend as a region, many distinctions are of course clouded in the aggregation of data among

countries (as well as within countries). For this reason, in a forthcoming book, I will address the economic and social performance of the individual countries of Mexico and Brazil. This book will incorporate the use of national data, as well as sub-national data into the analysis, providing a much clearer picture of the development of each of these countries.

This work contributes to our understanding of economic and social conditions in Latin America. In regards to its economic contribution, this work provides a thorough analysis of absolute measurements of economic change in Latin America, utilizing multiple GDP series, an important contribution that has been lacking in the field. Furthermore, it provides an analysis of the relative performance of Latin America, the United States, the world average, and major world regions to contextualize the performance of Latin America.

In regards to its social contribution, this work provides a broad picture of social development in Latin America as measured by three key social indexes-the Social Opportunity Index, the Physical Quality of Life Index, and the Human Development Index.

In spite of the obvious importance of social conditions, this work is the first to analyze and compare the long-term social trends in Latin America using these social indexes. To do so, both the Human Development Index and Physical Quality of Life Index were re-constructed and projected backwards, while the Social Opportunity Index was re-designed and updated to allow for comparisons among these indexes. My

research moves beyond mere opinion to quantify social and economic trends in Latin America.

CHAPTER ONE

INTRODUCTION

There is a commonly accepted notion which permeates the thinking of many throughout the world that the global development[1] trend is negative: "a handful of well-off countries have been improving their lot, while the rest of the world is left behind." An alternate conception of this idea not only takes note of the supposedly negative trend, but also its causes: "the rich are getting richer at the expense of the poor", and especially in recent years "the poor are worse off because of globalization."

What is strange about such conceptions is that they have been accepted by many with few clear facts to support them.

That there is poverty in the world, and too much, is not at question. However, if world leaders and policy makers are to attempt to improve the conditions of the world's poor, they need new and more consistent assessments of the absolute conditions and trends in development. Only with such new data can we best assess what works (and what does not work) in the process of global development. Without such analysis, short-sighted policy changes may be undertaken (even with the best of intentions) that actually worsen the situation.

[1] The elusive meaning of the term 'development' will be dealt with later in this section.

Alfred Marshall in his *Principles of Economics* gives advice as relevant for our time as his when he wrote in 1890:

> There is then need to guard against the temptation to overstate the economic evils of our own age, and to ignore the existence of similar and worse evils in earlier ages; even though some exaggeration may for the time stimulate others, as well as ourselves, to a more intense resolve that the present evils shall no longer be allowed to exist. But it is not less wrong, and generally it is much more foolish, to palter with truth for a good than for a selfish cause. And the pessimist descriptions of our own age, combined with romantic exaggerations of the happiness of past ages, must tend to the setting aside of methods of progress, the work of which if slow is yet solid; and to the hasty adoption of others of greater promise, but which resemble the potent medicines of a charlatan[2]

Although throughout time people have been aware of gaps in living standards, the widespread public concern and discourse over global development gaps is a relatively recent phenomenon. While it is difficult to pinpoint the exact beginning of this trend, the "economic gap" theory appears to have first gained widespread recognition in 1969 with the publication of *Partners in Development*, a report of the Commission on International Development chaired by the former prime minister of Canada, Lester B. Pearson, and therefore also known as the Pearson Report.

The Pearson Report had been initiated in 1967, in the context of increasing concerns over the future of international cooperation for economic development, by then President of the World Bank, "Mr. George Woods, (who) suggested a 'grand assize' in which an international group of 'stature and experience' would 'meet together, study the consequences of twenty years of development assistance, assess the results, clarify the errors and propose the policies which will work better in the future'". The call was

[2] Alfred Marshall, *Principles of Economics* (London: The Macmillan Press Ltd., 1890), 601.

answered in 1968 when Lester Pearson, accepted the invitation from the World Bank (through new President Robert S. McNamara) to form a Commission to perform such an analysis, the results of which became *Partners in Development* or the Pearson Report.[3]

The Pearson Report's first chapter begins dramatically: "The widening gap between the developed and developing countries has become a central issue of our time," and then goes on to note that concern over this gap has led to international awareness and action on a scale never before seen in history.

The Pearson Report warned that a crisis point had been breached in terms of aid and development provided by the wealthy countries to the poor countries:

> in the last years of this decade, the volume of foreign official aid has been stagnant. At no time during this period has it kept pace with the growth of national product in the wealthy nations...In fact, the commitments by the United States, which has been much the largest provider of aid funds, are declining

Reasons for this decline in aid include questions over the feasibility and efficacy of aid, concerns over waste, unrealistic expectations for "instant development", a greater concern for domestic issues on the part of donor countries, and a frustration by recipient countries with the lack of results, and overall disillusionment with the aid process.[4]

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[3] Lester B. Pearson, *Partners in Development* (New York: Praeger Publishers, 1969).
[4] Ibid.

The Pearson Report does provide a great deal of economic and social data, however, the evidence for the widening gap is limited to an analysis of the 1950-1967 global economic growth trends.

In spite of the Pearson Report's failure in 1969 to "prove" the concept of a "widening gap", this concept has become to the present day an almost unquestioned point of departure for countless political speeches, policy studies, book, and articles. In the past decade, the concern over a widening gap has been especially manifest in the frequent demonstrations over globalization. Indeed the driving force behind the anti-globalization movement is the theory that globalization is responsible for a general worsening in social conditions and a widening gap between the rich and poor. Academic experts, political leaders, and other influential people have attested to the crisis of the widening gap.

Indeed Jimmy Carter's Nobel Prize Acceptance Speech, given in Oslo, Norway, in December 2002, which posits the widening gap begins as follows:

> At the beginning of this new millennium I was asked to discuss, here in Oslo, the greatest challenge that the world faces. Among all the possible choices, I decided that the most serious and universal problem is the growing chasm between the richest and poorest people on earth. Citizens of the ten wealthiest countries are now seventy-five times richer than those who live in the ten poorest ones, and the separation is increasing every year, not only between nations but also within them. The results of this disparity are root causes of most of the world's unresolved problems, including starvation, illiteracy, environmental degradation, violent conflict, and unnecessary illnesses that range from Guinea worm to HIV/AIDS.[5]

[5] Nobel Prize speech given in Oslo, Decmember 10, 2002. Available on-line at Nobel Prize site (Nobelprize.org) http://nobelprize.org/nobel_prizes/peace/laureates/2002/carter-lecture.html

Latin America Corollary in a Global Contex

Latin America has been an integral part of the widening gap debate over the decades: Latin America, on the "poor" side of the divide, has been seen to be not only falling further and further behind the "rich", but also behind other developing regions.

The concept of a widening gap has permeated historical, economic, and political analysis and writings on Latin America, as well as driving the rhetoric and policies of the region's political leaders. In fact, the core themes of Dependency Theory and its many variations, focus on the causes and solutions to the development gap in Latin America and Eastern Europe[6].

In general, dependency theories link the lack of development in Latin America to their exploitation by the developed capitalist countries, which have prevented Latin America from real progress by their so-called "development of underdevelopment." In other words, the rich countries have purposefully kept the poor countries poor in order to further enrich themselves. The general viewpoint is summed up by Eduardo Galeano in his highly popular *The Open Veins of Latin America*, first published in 1971:

> Latin America is the region of open veins...the history of Latin America's underdevelopment is, as someone has said, an integral part of the history of world capitalism's development. Our defeat was always implicit in the victory of others;

[6] For a major view on how Dependency Theory arose in Romania and was adopted by ECLA and Brazil, see the Olga Magdalena Lazín review of Joseph Love's book entitled *Crafting the Third World: Theorizing Underdevelopment in Romania and Brazil* Stanford: Stanford University Press, 1996. The book review is at www.isop.ucla.edu/profmex/volume5/2spring00/crafting_thirdworld.htm and is incorporated in Olga Magdalena Lazín, ***La globalización se descentraliza. Libre mercado, fundaciones, Sociedad Cívica y gobierno civil en las regiones del mundo*** (Guadalajara, Los Ángeles, México: Universidad de Guadalajara, UCLA Program on Mexico, PROFMEX/World, Casa Juan Pablos Centro Cultural, 2007).

> our wealth has always generated our poverty by nourishing the prosperity of others...[7]

Unfortunately Galeano misses the point that there are clear differences in living standards among world regions, in other words development gaps worldwide. The issue that begs examination is to what extent can we measure the development trends? Is the gap actually widening? How many gaps are there? In short, without answers to these questions the world can not move effectively to the next steps in development.

While all of the above are important questions, determining the development trend for Latin America (and the world) is a pre-requisite to answering the other questions. If we do not know whether societies and economies are improving or worsening, how is it possible to set forth the "details" of development.

In order to ascertain the development trend in Latin America, we need to define the terms "gap" and "which gaps" as well as "development" and whether it is still useful to distinguish between "economic development" and "social development".

The most common definition of development given by economists, and indeed the primary meaning of development theory in its formative period, is economic production (or income). The *Economist Dictionary of Economics* defines economic development as "the growth of national income per capita."[8] Development economists were aware that

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[7] Eduardo Galeano, *The Open Veins of Latin America* (New York: Monthly Review Press, 1997), 2.
[8] Graham Bannock, Ron Baxter, Evan Davis, *Dictionary of Economics* (Princeton, New Jersey: Bloomberg Press, 2003).

income was not the end but the means to other development ends and believed that economic development was highly correlated with improvements in health, education, and other social indicators. Because of this correlation and the existence of national income measures, growth of gross domestic product per capita (GDP/C) became the early focus of development efforts.

However, by the 1960s there was a growing consensus that using per capita income and growth rates to measure development was missing a large part of the development picture. In particular, there was a growing consensus (especially in dependency circles) that economic growth does not necessarily lead to social development. Meanwhile, others simply felt the economic and social, though interrelated, were distinct and required separate measures. These general concerns led to a search for adequate measures of social development, focusing on the basic human condition. Efforts were made to create measures that looked at important issues such as nutrition, health care, and education. In the following decades, several indexes were created that sought to directly measure the improvement of social indicators.

Therefore, although we have yet to reach a consensus on exactly what development means, there are clearly two separate (yet interdependent) fields by which we can measure its attainment: economic development and social development. Again, both the social and economic are intertwined, with bidirectional causation and effect. The best way to measure development would therefore involve an approach in which performance

in each of these areas is measured separately (economic and social). The issue of how to measure economic and social development is dealt with later in this work.

With which countries or regions in the world should we compare Latin America? Since the widening gap theory posits that Latin America and other poor regions' development (or lack thereof) has fallen behind more developed countries, the implicit comparison needs to be to a developed country or region. The United States is a logical choice because it ranks as the top (or among the top) countries in terms of economic and social indicators. In addition, given its geographic proximity and historical interconnections with Latin America, it has been a natural historical comparison point for political leaders and ordinary citizens throughout Latin America.

However, the analysis would be further enhanced with comparisons to other countries and regions. For example, it may be possible that Latin America did poorly in relative terms with the United States, but excelled against the rest of the world. Without a global contextualization, using other regions and countries as reference points, we may draw an incomplete picture of Latin America's development. Therefore, the following chapters also provide comparisons (where data is available) to the world average, and the regions of Western Europe, Eastern Europe, the former U.S.S.R., East Asia, South Asia, South-East Asia and the Pacific, North Africa and the Middle East, and Sub-Saharan Africa.

Concerning the definition of "gap", we need to determine which ones to measure such as relative gaps or absolute gaps. To demonstrate, if Latin America's GDP is 55 and

the U.S. is 100, the absolute gap would be the U.S. value minus the Latin American value (100-55) = 45. The relative gap would be Latin America's value divided by the U.S. value, (75/100) = 55%.

Which one is more important, the absolute or the relative? To help answer this question, the following table (table 1-1) provides data on the hypothetical example of U.S. and Latin American GDP, starting at 100 and 55 respectively, if the U.S. were to grow its GDP at an average annual compound rate of 3% and Latin America at a rate of 5%.

Table 1-1
HYPOTHETICAL LATIN AMERICAN AND U.S. GROWTH, (U.S. 3%, LATIN AMERICA 5%):
ABSOLUTE AND RELATIVE GAPS
Years 1 through 42

	1	10	20	30	40	41	42
U.S.	100.0	129.2	173.6	233.4	313.6	323.0	332.7
Latin America	45.0	70.5	114.8	187.0	304.6	319.8	335.8
Absolute gap	55.0	58.7	58.9	46.4	9.0	3.2	-3.1
Relative gap	45.0%	54.5%	66.1%	80.1%	97.1%	99.0%	100.9%

SOURCE: My hypothetical calculations using the 3% as the growth rate for the U.S. and 5% for Latin America.

During the first twenty years the absolute gap widens while the relative gap narrows. However, by year thirty the absolute gap has turned around and is also narrowing along with the relative gap until full equality is reached between years 41 and

42. Therefore, the relative gap should be the primary focus of our analysis, as it indicates the trend direction of the gap. Even though the absolute gap may be widening, so long as the relative gap narrows, the absolute gap will also eventually narrow.

Methodology and outline for work

Therefore, in order to answer the questions of what the development trend has been for Latin America and if there is a widening development gap between Latin America and the United States, the following steps need to be taken: (1) determine the absolute trends in economic development for Latin America and the United States, (2) compare these trends to see if there is indeed a widening gap, (3) determine the absolute trends in social development for Latin America and the United States, (4) compare these trends to see if there is a widening gap, and (5) where data is available, do the same analysis for other major regions to provide global points of comparison for the analysis. It is precisely along these lines that the remainder of the work is organized.

Chapter two provides absolute economic data for Latin America, the United States, and major world regions. Within this chapter eight different GDP series are developed, each utilizing different methodologies. The general trend for Latin America is assessed and then compared to the performance of the U.S. to determine Latin America's relative performance to the United States. Two of the GDP series will allow us to further contextualize the Latin American performance by comparing it to the global average and

world regional averages. Based on these relative comparisons we will be able to determine whether the economic gap has been widening.

Chapter three provides absolute social data for Latin America, the United States, and major world regions in three social indexes of development:

Section one analyzes the Social Opportunity Index (SOI), which is a composite of 12 social indicators. The Social Opportunity Index was originally developed by Dr. James Wilkie specifically to answer the question of whether there was a widening gap between Latin America and the United States. Therefore, as originally constructed, the best score was "0", meaning no gap. Because this is inconsistent with the other indexes here, I have reformulated the index to where "100" is now the best score. Among the three social indexes, the SOI is by far the broadest index with 12 separate indicators.

Section two reconstructs the Physical Quality of Life Index (PQLI), a composite of only three indicators. Because of the limited number of indicators, if only one indicator is wrong, its large weighting can throw off the entire index. This is in contrast to the SOI, where the greater number of indicators helps to cancel out any potential errors in a given indicator. In fact, the Physical Quality of Life Index's three indicators are all part of the Social Opportunity Index. Therefore, the PQLI can be seen as a sub-index of the SOI.

Section three, reconstructs the U.N.'s Human Development Index (HDI), a composite of four indicators. Although the Human Development Index is often portrayed as a social development index it is not. One third of the HDI is based upon gross

domestic product per-capita data, using purchasing-power parity exchange rates. In spite of its popularity, the HDI therefore represents a step backwards in measurement of social and economic change as the two are combined into one indicator. In spite of this flaw, the HDI is included in the social analysis chapter.

Each section of chapter three assesses the absolute performance of Latin America and the United States, and then compares their relative performance to determine if there is a widening social gap.

For the Physical Quality of Life Index and Human Development Index, the absolute trends of major world regions are also assessed and then compared to Latin America's performance. The Social Opportunity Index is not included in this global analysis due to its diverse range of 12 indicators, for which there is no data available for many world regions that would allow us to calculate the SOI back to 1940.

Chapter four summarizes the results of the analysis and includes a discussion on how to assess the results of this analysis.

CHAPTER TWO

ECONOMIC DEVELOPMENT IN LATIN AMERICA AND WORLD REGIONS

Section one: Preliminary Issues

To answer the question of what Latin America's development trend has been and how it compares to the United States and other world regions, this chapter will examine the most traditional measure of development, economic development. Economic development focuses on the income the citizens of a country receive, (which is also equal to the goods and services a country is able to produce), because the more income a country has, the more likely it is that the material needs of its citizens will be met.

While very useful, national income measures do have many flaws which will be discussed in chapter three. However, in spite of the imperfections of national income measures, when it comes to measuring development, as economist Paul Krugman notes, they do a fairly accurate job:

> The common use of a one-dimensional measure of output to measure economic development is…not something inherent in economic analysis; it is a deliberate simplification, and like all such simplifications it should be rejected if it seems to miss the main story about what is happening. On the other hand, simplicity is a virtue: if a single number seems to tell us most of what we want to know, insisting

that the development process cannot be reduced to any one number, even as a first cut, may sound wise but in fact is simply obscurantist.

So how does a number like GDP per capita do as a measure of development? The answer, surely, is that it does very well—in the sense that it never happens that one finds a country with a low level of GDP that one would want to call developed, or one with a low growth rate that one would call a development success. I like to make this point by asking people to look at a table which shows GDP per capita (measured at purchasing power parities rather than market exchange rates) for a number of countries. My question for people who say that real GDP is a simplistic measure of development is: which country rankings would you like to reverse? Is Malaysia really more developed than Portugal, or than Spain? Is Britain more developed than Germany? I have not found anyone who, when pressed on this, wants to change the rankings more than marginally, no matter how much they claim that a one-dimensional measure like GDP is too crude to capture a complex reality, in practice they cannot find any countries whose level of development is seriously misindicated by that measure. To me, this means that development is in fact reasonably thought of as a one-dimensional process, and that GDP is a very good index of progress along that dimension[1].

Which national income measure should we use?

The most commonly used measurement of economic development is Gross Domestic Product (GDP) which is the market value of all final goods and services produced within a nation during a given year (or other unit of time). The value can be measured as the income paid to the workers (and profits) or final expenditures made on

[1] Paul Krugman, "Cycles of Conventional Wisdom on Economic Development" *International Affairs (Royal Institute of International Affairs 1944–)*, 71 (4), Special RIIA 75th Anniversary Issue, October 1995, pp. 717–732.

the goods and services; they are the two sides of the same coin. GDP is the primary measure of economic development which will be used in this chapter.

Gross National Product (GNP), now also being called Gross National Income (GNI) is another measure of income that is sometimes, though less frequently now, used. Whereas GDP measures the income produced domestically (in a single country, without regard to the nationality of those producing it), GNP measures income earned by the nationals (citizens) of a single nation, no matter where that production takes place.

To derive GNP from GDP, one must subtract any factor payments (wages, profit, and rent) that go to non-nationals (even though production was done domestically), and add in factor payments to nationals that is earned abroad (even though production was done non-domestically).

Some critics of the now commonly used measure of GDP over GNP have claimed it is merely an attempt to mask the fact that multinationals are stealing the wealth of poor countries because GDP (unlike GNP) counts income of foreign owned businesses, even if some or that income belong to foreigners, as is argued by the Redefining Process (RP), a public policy organization in Oakland, California. According to RP, the concept of GDP is part of a plot by the developed world to mask its exploitation of the developing world:

> Under the old measure, the Gross National Product, the earnings of a multinational firm were attributed to the country where the firm was owned and where the profits would eventually return. Under the Gross Domestic Product, however, the profits are attributed to the country where the factory or mine is located, even though they (the profits) won't stay there. This accounting shift has

> turned many struggling nations into statistical boomtowns, while aiding the push for a global economy. Conveniently, it has hidden a basic fact: the nations of the North are walking off with the South's resources and calling it a gain for the South.[2]

Although there is a difference between GDP and GNP, RP's argument is largely unfounded. In fact, for most developed and developing countries, GDP and GNP are fairly close and the ratio changes little over time.

For example, in the case of the United States, factor payments from abroad and factor payments to abroad are nearly equal, each about 3% of GDP-so both Gross Domestic Product and Gross National Product are almost equal.

What about Latin America? The following table (table 2-1) utilizes IMF data to calculate the ratio of GNP to GDP for Latin America and the U.S. from 1950-2004. As the table shows, there is not a very large difference between the two, and GNP is typically only a couple of percentage points less than GDP. If the RP hypothesis were correct, one would see a much larger and growing difference (due to the expansion of multinationals) between GDP and GNP.

[2] Redefining Process. Available at http://www.cyberus.ca/choose.sustain/Questions/GDP-GNP.html

TABLE 2-1
GNP AS A PERCENT OF GDP, 1950-2004

COUNTRYNAME	1950	1960	1970	1980	1990	2000	2004
ARGENTINA	1.00	1.00	0.89	0.73	0.99	0.97	0.94
BOLIVIA	1.00	1.00	0.98			0.97	0.99
BRAZIL	1.06	0.87	1.00	0.96	0.95	0.97	0.97
CHILE	1.26	0.98	0.98	0.97	0.94	0.96	0.91
COLOMBIA	0.99	0.99	0.98	1.00	0.82	0.97	
COSTA RICA	0.91	0.99	0.99	0.95	0.96	0.92	0.96
DOMINICAN REPUBLIC	0.96	0.99	0.98	0.97	0.96	0.95	0.93
ECUADOR	1.00	1.00	1.00	1.00	1.00	1.00	1.00
EL SALVADOR		0.99	0.99	0.99	0.97	0.98	0.97
GUATEMALA	0.99	0.99	0.98	0.99	0.98	0.99	0.99
HAITI			0.99	0.99	0.89		
HONDURAS	0.91	1.03	0.97	0.95	0.91	0.98	0.95
MEXICO	1.00	1.00	1.00	1.00	1.00	1.00	1.00
NICARAGUA						0.95	0.96
PANAMA	0.96	0.97	0.98	0.82	0.86	0.93	0.91
PARAGUAY	1.00	1.00	0.98	1.01	1.02	1.01	
PERU	1.03	1.01	0.99	0.80	1.22		
URUGUAY		0.99	0.99	0.99	0.96	0.99	0.96
VENEZUELA, REP. BOL.	0.89	0.92	0.95	1.00	0.97	0.99	0.97
UNITED STATES	1.00	1.01	1.00	1.00	0.99	1.02	1.00

SOURCE: IMF, IFS on-line database.

A very different critique of GDP comes from economist Mark Skousen, who favors Gross Output (GO) over GDP. Skousen believes that GDP has two primary flaws. One is the exclusive focus on final goods and services, which ignores intermediate production, and therefore tends to overestimate the importance of consumer spending relative to investment. Skousen's second critique is the inclusion of government spending in GDP,

which have led many to argue that any increase in government spending, even if done by deficit spending, is good for the economy. His preferred measure of Gross Output (GO), which includes intermediate input to final output, has just recently been added to the Commerce Department's statistical base. [3]

Chapter three continues the discussion of GDP and its limitations. Yet for now, GDP, in spite of its flaws, and competing alternative measures, is still the most commonly collected and used economic statistic and will form the basis for this chapter's economic analysis.

Transfering Nominal GDP to Real GDP

Having selected GDP as our measurement for economic development, we must then make two adjustments to be able to compare GDP across time and countries. The first adjustment involves correcting for the changes in prices to allow for real year over year comparisons of production. As discussed above, GDP is simply the value of all goods and services produced in a period of time. The value is based on the quantity of goods and services and their corresponding prices. GDP may therefore either increase due to a rise in prices or quantities (or as is often the case both).

GDP calculated by using the quantity of goods and services times their current prices is referred to as nominal GDP. However, because changes in the price of goods can increase nominal GDP, this is a poor measure of economic well-being over time. A mere increase in the price of goods (and thus nominal GDP) does nothing to increase the

[3] Mark Skousen, "Beyond GDP: A Breakthrough in National Accounting", *Ideas on Liberty*, (April 2001).

amount of goods and services available to meet the material needs of society (or increase their real income to buy such goods). If prices rose 50% in one year and quantities remained the same, GDP will have increased 50%, yet people's material well-being would remain unchanged. In order to remove the effects of prices changes, and measure real changes in production of goods and services, and thus economic well being, nominal GDP must be converted into real GDP.

Real GDP is the value of goods and services measured using a constant (base year) set of prices. Real GDP is therefore a better indicator of economic well-being because it increases only when the quantities of goods and services have increased (and incomes received for that production). Once a base year is chosen for prices, each subsequent year's quantities of goods and services are calculated using the base year prices, yielding a real GDP series that compares changes in output over time.

Base Year Selection Effects

However, by putting GDP numbers into constant (real) dollars there are many distortions which may occur based on the selection of the base year for prices. If one happens to select a year in which certain GDP components have higher prices, a higher total GDP amount could be shown (and possibly a higher rate of growth depending on the other components and percent composition changes of GDP) than had one selected a year in which key components were priced lower.

Therefore, depending on the base year selected, comparisons among different countries' GDP may vary, as well as rates of economic growth. Even more significant, shifting base years for real GDP could actually lead to a given country being misranked as having a greater GDP than another country (when its GDP in fact was less than said country), as the following example demonstrates.

Calculating the 1996 GDP of Venezuela and Colombia utilizing different base years illustrates the effects that base year selection can have on total GDP. In current dollars of 1996 Colombia's GDP was far greater than Venezuela: Colombia's GDP was $89 billion dollars, while Venezuela's GDP was nearly $62 billion. However, if we convert their GDP into "real GDP" utilizing different base years, the picture changes dramatically as the following table demonstrates.

Table 2-2
COLOMBIA AND VENEZUELA GDP FOR 1996, UTILIZING BASE YEARS of 1995, 1994, 1993, 1990, and 1980

Current Dollars for 1996		In **Constant Dollars** of : 95	94	93	90	80
Colombia	**89**	76	75	54	45	56
Venezuela	**61.7**	47	53	52	53	76

SOURCE: IMF IFS (1999)

As table 2-2 shows, the 1996 GDP comparison varies widely by selection of the index year. If one chooses 1980 or 1990 Venezuela shows a higher GDP; if one uses

1993 for the index, they are almost equal; if one chooses 1994, 1995 or 1996 Colombia has a higher GDP than Venezuela. Therefore, relying on just one base-year "real" GDP series, could lead to a very "unreal" analysis.

In an attempt to reduce some of the biases caused by base year selection, the U.S. has recently begun using chain-weighted measures in calculating its GDP. A chain-weighted (or Fisher) series takes an average of a fixed weight and variable rate indexes to link one year's GDP to the next.

Converting countries' GDP to a common currency

Having transferred nominal GDP into real GDP, we now need a common measurement to compare the real GDP of different countries. This requires a conversion into a common currency unit, most often the U.S. dollar.

Ostensibly, this would be the easiest part of the comparison of world wide economic aggregates. Exchange rates are readily available for years past, and the conversion of global economic output into a single currency with these exchange rates is just a matter of a few simple calculations. However, the process of translating different countries' GDP into a common currency has become a more complicated (and controversial) task in recent decades.

For much of the 20th century, dollar exchange rates (DER) had been the common (if not only) way of making international comparisons. A primary concern when using dollar exchange rates is which rate to use to best reflect the true value of a countries' economic

output/income. One could use the official exchange rate prevailing at the end of the year, an average of exchange rates over the year, or possibly black-market exchange rates. Which is the best (in portraying reality) would vary from country to country, and always be subject to debate.

The conversion to dollars using exchange rates is also very sensitive to the base year chosen for the series. If a base year is chosen in which a currency happened to be under or overvalued, the entire series will carry this bias. This is a particularly important issue given the prevalence of government manipulation or outright setting of exchange rates in Latin America in the 20th century.

An alternate to dollar exchange rates (DER) is purchasing power parity exchange rates (PPP). PPP exchange rates have gained favor in recent years as an alternative to dollar exchange rates as a means of making international comparisons. As discussed above, dollar exchange rates merely convert GDP in local currency at market exchange rates, which as noted above can fluctuate greatly based on government policies or the vagaries of the currency markets.

Purchasing-power parity exchange rates attempt to take into account the fact that the prices for many goods and services vary from country to country-typically a U.S. dollar buys more goods and services in a poor country and less in a rich one. PPP exchange rates therefore attempt to adjust the dollar exchange rates to equalize a given country's real domestic purchasing power to that of the U.S. Although PPP exchange

rates series are often called "international dollars", perhaps a better term would be "domestic equivalent dollars".

The choice of dollar exchange rates or PPP makes a dramatic difference in global GDP levels. A recent *Economist* article noted that a simple question such as "How big is the world economy?", results in vastly different answers: if one uses dollar exchange rates the world economy in 2003 was 36 trillion dollars, however using PPP, the total is 50 trillion. The article points out that which method is used affects more important things than just the size of the global economy: "the global rate of growth, the relative size of economies, and the extent of inequality between rich and poor."[4] Therefore, any given analysis that just relied on one set of exchange rates, be they dollar exchange rates or PPP, would yield very different results.

Even if one agrees with the principles behind the use of purchasing power parity, the methodology behind many of the calculations for many countries involves a good deal of guesswork. Perhaps the most hotly discussed economy in recent years is that of China. As noted in a recent *Economist* article, the PPP calculations for China may face substantial revision. China's GDP for 2006 was $2.7 trillion last year using dollar exchange rates, only 1/5 of the United States GDP of $13.2 trillion. However, using PPP rates, China's GDP jumps to $10 trillion, 76% of the U.S. GDP. However, the price level differential between the U.S. and China is based on a study that dates to the 1980s, and is likely to be revised by as much as 40%. If this is correct, China's GDP will be reduced to

[4] "Measuring Economies. Garbage in, garbage out", *Economist*, May 27th, 2004.

$6 trillion dollars. The possibility of such a dramatic change underscores the important role exchange rate methodology and accuracy can play in GDP analysis.[5]

Organization of the chapter sections

The preceding has shown that GDP calculations can produce strikingly different results based on methodology. Among the prime causes of GDP variance are primary source data, base year selection biases of prices and exchange rates, and selection and accuracy of exchange rates-be they dollar exchange rates or purchasing power parity rates.

Therefore, if we wish to get as accurate a picture as possible of Latin America's economic development record, the best approach would be to not simply examine one GDP set of data, but multiple sets of GDP data, each utilizing different sources, base years, and exchange rates. The remainder of this chapter will do exactly that, presenting 10 different GDP series, each of which utilizes different sources and methodology for their calculation. The series are as follows:

1. Economic Commission for Latin America (ECLA) Series dollar exchange rate (DER) series: uses 1970 for the base year with dollar exchange rates:

The primary base for this series is from the Economic Commission for Latin America's *Series Históricas del Crecimiento de América Latina* (SHCAL) taken from

[5] "Economic Focus: A less fiery dragon?", *Economist*, December 1, 2007, 92.

Statistical Abstract of Latin America volume 21 and *Statistical Abstract of Latin America volume 22* [6] [7].

I have taken the ECLA series and converted the data into dollars using dollar exchange rates for this series and purchasing power parity rates for series two below. The original series starts in 1940 and leaves off in the mid 1970s. However, I have updated the series through 2005 using ECLA's *Statistical Yearbook for Latin America and the Caribbean* 1984 and 2004[8] [9], and ECLA's *América Latina y el Caribe: proyecciones 2006-2007*[10].

2. Economic Commission for Latin America (ECLA) purchasing power parity (PPP) Series PPP: uses 1970 for the base year with PPP exchange rates:

The source for this series is identical to series one above. The only difference is the exchange rate series I used for conversion was purchasing power parity (PPP) for this series, as opposed to the dollar exchange rate (DER) for series one above.

3. Thorp Series: uses 1970 for the base year with PPP exchange rates

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[6] James Wilkie and Stephen Haber, *Statistical Abstract of Latin America*, volume 21 (Los Angeles: UCLA Latin American Center, 1981).
[7] James Wilkie and Stephen Haber, *Statistical Abstract of Latin America*, volume 22 (Los Angeles: UCLA Latin American Center, 1982).

[8] Economic Commission for Latin America, *Statistical Yearbook for Latin America and the Caribbean 1984* (Santiago: United Nations, 1985).
[9] Economic Commission for Latin America, *Statistical Yearbook for Latin America and the Caribbean 2004* (Santiago: United Nations, 2005).

[10] Economic Commission for Latin America, *América Latina y el Caribe: proyecciones 2006-2007* (Santiago: United Nations, 2005).

The sources for this series are from Rosemary Thorp's 1998 work entitled *Progress, Poverty, and Exclusion: An Economic History of Latin America in the 20th Century*[11]. The key source for Thorp's work is the same as for our first two series: the Economic Commission for Latin America's *Series históricas del crecimiento de América Latina*[12]. However, Thorp has used a variety of sources to project data for many of the countries back to 1900. In addition, Thorp has also projected the data forward through 1995 using different sources than in series one and two.

Another difference is that Thorp's work has used three year averages and already applied purchasing power parity rates to convert the series to dollars. Further details on Thorp's sources are provided in appendix II of her work.

4. Oxford Latin American Economic History Database (OXLAD) Series dollar exchange rates (DER): uses 1970 for the base year with dollar exchange rates

The source for this series is the Oxford Latin American Economic History Database, maintained by the Latin American Centre at Oxford University[13]. The sources for this series are nearly identical to the Thorp series above. However, this series provides the data in local currency units. I have taken the local currency unit series and applied dollar exchange rates to create this series, and purchasing power parity rates to create the series below.

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[11] Rosemary Thorp, *Progress, Poverty, and Exclusion: An Economic History of Latin America in the 20th Century* (New York: Inter-American Development Bank, 1998).
[12] Economic Commission for Latin America, *Series históricas del crecimiento de América Latina* (Santiago: United Nations, 1978).
[13] Oxford Latin American Economic History Database available at: http://oxlad.qeh.ox.ac.uk/

5. Oxford Latin American Economic History Database (OXLAD) Series purchasing power parity (PPP): uses 1970 for the base year with PPP exchange rates:

The sources for this series are identical to series four above. The only difference is that I have transferred this series into dollars using purchasing power parity exchange rates while series four utilizes dollar exchange rates.

6. Hofman Series: uses 1980 for the base year with PPP exchange rates:

The data for this series is largely based on Andre Hofman's *The Economic Development of Latin America in the Twentieth Century*[14]. Andre Hofman has provided me with his most recent updates to this work, which broadens the number of countries and the time period of the work.

Hofman uses a variety of sources for his data before 1950, each detailed in appendix B of his work. For data beyond 1950, Hofman primarily uses data "from currently collected official estimates by ECLAC corresponding to the most recent revision of the United Nations System of National Accounts (SNA)."[15] Hofman utilizes 1980 for his base year and has converted the series to dollars using purchasing power parity exchange rates.

7. United Nations (UN) Series: uses 1990 as the base year with dollar exchange rates

[14] Andre Hofman, The Economic Development of Latin America in the Twentieth Century (Northampton: Edward Elgar, 2001).
[15] Hofman, 159.

The United Nations Series is taken from the United Nations Common Database (UNCDB) National Accounts Main Aggregates.[16] This series uses 1990 for its base year and dollar exchange rates.

8. Angus Maddison Series: uses 1990 as the base year with PPP exchanger rates:

The data for this series are from Angus Maddison's update to the *World Economy: Historical Statistics* entitled "World Population, GDP, and Per Capita GDP, 1-2003 AD"[17]. Maddison utilizes a variety of sources for his data including specific country studies and national data. Maddison uses 1990 for his base year and has converted his data to dollars using purchasing power parity exchange rates.

9. International Monetary Fund (IMF) Current Series: presents unadjusted (current) GDP with dollar exchange rates:

The source for this series is the International Monetary Funds own country data sources presented in their *International Financial Statistics* database[18]. Unlike the other series, the data in this series is not converted into a common base year. The current local

[16] United Nations Common Database, (http://unstats.un.org/unsd/snaama/selectionbasicFast.asp).

[17] Angus Maddison "World Population, GDP, and Per Capita GDP, 1-2003 AD" available on his webpage: (http://www.ggdc.net/maddison/).

[18] International Monetary Fund, *International Financial Statistics*, available on their webpage (http://www.imfstatistics.org/imf/logon.aspx).

currency unit series are converted to dollars using dollar exchange rates for each given year.

10. World Development Indicators (WDI)Current Series: presents unadjusted (current) GDP with PPP exchange rates:

The data for this series is derived from the World Development Indicators database[19]. The data is derived from World Bank sources and just like the IMF series above is not converted into a common base year. Rather, each year's local currency series is converted to dollars using purchasing power parity exchange rates for each given year.

Sources Still to be investigated

In a forthcoming work, I will add some additional sources to the analysis. Among these sources are: the Penn World Tables, the World Development Indicators database (there are many other series besides the current dollar series described above), the International Monetary Fund (which has other series besides the current dollar series described above), and data conducted by Juan Moreno Pérez.

For each of the ten sections described above, GDP and GDP/C tables are provided and percentage growth and average annual compound growth rates are calculated (except

[19] World Bank, World Development Indicators database, available on web page (http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20398986~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html).

for the current dollar series). Utilizing these tables, the absolute economic performance of Latin America is assessed.

To answer the question of whether the gap is widening between Latin America and the U.S., Latin American GDP and GDP/C are presented as a percent of U.S. GDP and GDP/C.

To provide a global context for Latin America's performance, two of the series (the U.N. series and Angus Maddison series), compare Latin America's performance to the world average, and to major world regions.

Based on these series, we will be able to assess the absolute economic performance of Latin America, and also compare that performance to the United States to determine if there is a widening gap. Finally, the global series will allow us to compare Latin America's economic development to the world average, and the average of other major world regions. This will allow us to see how Latin America's performance compares to other major world regions, and compare economic development gaps and trends globally.

Section Two: Economic Commission for Latin America (ECLA) SERIES: 1970, Dollar Exchange Rate (DER) & Purchasing Power Parity (PPP) series

GDP ANALYSIS (Dollar exchange rate series)

The following GDP series is derived primarily from sources from the Economic Commission for Latin America. This series uses constant dollars of 1970 using dollar exchange rates. For a detailed explanation of the sources and methodology used in the construction of this series, see the data appendix for this chapter.

The following series of tables (tables 2-3, 2-4, and 2-5) provide the basic GDP data, percentage growth rates, and average annual compound rates of growth.

For the entire 65 year period, Latin America's total average annual compound growth averaged 4.1% compared to 3.6% for the United States. As the table above shows, although the U.S. grew slightly faster than Latin America during the 1940s (just 4.5% vs. Latin America's 4.4%), from 1950s through 1980 Latin America enjoyed a much stronger GDP growth rate. Increasing each decade and averaging 5.43% for this thirty year golden run, Latin American GDP handily bested the U.S. which grew almost 2 points less than Latin America on average at 3.63.

Table 2-3
ECLA DER SERIES: LATIN AMERICA AND UNITED STATES GDP, 1940-2005
(Millions of 1970 U.S. dollars)

	1940	1950	1960	1970	1980	1990	2000	2005
Argentina	7,818	10,906	14,618	22,318	25,970	22,868	34,198	37,728
Bolivia	397	531	551	946	1,494	1,374	1,989	2,294
Brazil	7,238	11,103	21,444	38,681	81,711	97,987	126,598	140,451
Chile	2,405	3,373	4,961	7,674	9,646	12,984	23,152	28,497
Colombia	1,746	2,505	3,919	6,495	11,207	16,082	20,781	24,622
Costa Rica	155	229	455	875	1,516	1,923	3,130	3,757
Cuba	1,640	2,095	2,713	3,196	5,355	7,367	6,005	6,894
Dominican Rep.	255	464	808	1,325	2,591	3,257	5,791	6,970
Ecuador	284	533	858	1,434	3,577	4,272	5,302	6,638
El Salvador	211	348	549	950	1,306	1,276	1,957	2,165
Guatemala	680	717	1,041	1,779	3,083	3,352	5,036	5,707
Haiti	248	320	385	410	484	466	432	423
Honduras	401	565	819	1,291	2,051	2,547	3,524	4,203
Mexico	4,711	9,182	16,199	31,921	64,068	75,386	106,444	116,155
Nicaragua	141	219	365	711	784	669	935	1,086
Panama	227	282	452	962	1,630	1,852	3,070	3,781
Paraguay	208	278	353	551	1,278	1,729	1,954	2,174
Peru	1,426	1,999	3,348	5,648	8,690	7,847	11,625	14,166
Uruguay	1,020	1,496	1,838	2,144	2,826	2,969	3,962	4,113
Venezuela	1,360	2,990	6,210	11,086	16,560	17,315	21,859	23,948
	0	0	0	0	0	0	0	0
Latin America	32,571	50,131	81,886	140,398	245,825	283,525	387,744	435,773
United States	313,753	489,326	688,828	1,038,520	1,421,190	1,958,331	2,702,955	3,065,819

SOURCE: See data appendix for sources and methodology for series.

Table 2-4
ECLA DER SERIES: GDP PERCENTAGE GROWTH

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
Brazil	53%	93%	80%	111%	20%	29%	11%	1841%
Mexico	95%	76%	97%	101%	18%	41%	9%	2365%
Latin America	54%	63%	71%	75%	15%	37%	12%	1238%
United States	56%	41%	51%	37%	38%	38%	13%	877%

SOURCE: Calculated from table 2-3.

Table 2-5
ECLA DER SERIES: GDP AVERAGE ANNUAL COMPOUND GROWTH

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
Brazil	4.4%	6.8%	6.1%	7.8%	1.8%	2.6%	2.1%	4.7%
Mexico	6.9%	5.8%	7.0%	7.2%	1.6%	3.5%	1.8%	5.1%
Latin America	4.41%	5.03%	5.54%	5.76%	1.44%	3.18%	2.36%	4.07%
United States	4.54%	3.48%	4.19%	3.19%	3.26%	3.28%	2.55%	3.57%

SOURCE: Calculated from table 2-3.

However, this golden run came to a dramatic end during the "lost decade" of the 1980s. Latin America's growth rate fell to 1.9% below the United States. Latin America recovered somewhat from this crisis in the 1990s, nearly equaling (but just below) the U.S. GDP growth rate, a trend which has continued into the 21st century.

Table 2-6
ECLA DER SERIES: LATIN AMERICA GDP AS A PERCENT OF U.S. GDP, 1940-2005
(U.S. = 100)

	1940	1950	1960	1970	1980	1990	2000	2005
Brazil	2.3%	2.3%	3.1%	3.7%	5.7%	5.0%	4.7%	4.6%
Mexico	1.5%	1.9%	2.4%	3.1%	4.5%	3.8%	3.9%	3.8%
Latin America	10.4%	10.2%	11.9%	13.5%	17.3%	14.5%	14.3%	14.2%

SOURCE: Calculated from table 2-3.

Because of Latin America's higher GDP growth rate relative to the United States over this period, its relative position to the United States has also improved as the above table shows (table 2-6). Following a slight dip from 1940 to 1950 (from 10.4% to 10.2%), there was a slow rise from 1950 at 10.2% of US GDP to a high of 17.3% in 1980. This 30 year increase was followed by an abrupt drop to 14.5% by the end of the lost decade. For the 1990-2000, and 2000-2005 periods, Latin America faced small relative decreases, declining to 14.3% of U.S. GDP in 2000, and then 14.2% in 2005.

GDP/C ANALYSIS (Dollar exchange rate series)

The following tables utilize the same ECLAC sources to derive the GDP/C series. The following tables (2-7, 2-8, and 2-9) present the GDP/C series, percentage growth, and average annual compound growth. Details on the sources and methodology are provided in the data appendix for this chapter.

In GDP/C terms, Latin America improved at an annualized rate of 1.7% for the entire 65 year period, underperforming the U.S. which grew at a rate of 2.3%. As was the case with GDP, Latin American GDP/C growth showed a steady percentage rise from the 1940s through 1980.

During the 1980s Latin America suffered a big reversal to negative GDP/C growth: during that period 16 of 20 Latin American countries had average negative GDP/C growth, and only four countries with positive GDP/C growth. During the 1990s, the situation improved to positive, though low, GDP/C growth averaging 1.5%. In the first five years of the 21st century, the GDP/C growth rate for Latin America has remained positive, though still low at 1% for 2000-2005.

Table 2-7
ECLA DER SERIES: LATIN AMERICA AND UNITED STATES GDP/C, 1940-2005
(U.S. 1970 dollars)

	1940	1950	1960	1970	1980	1990	2000	2005
Latin America								
Argentina	552	636	709	931	924	702	927	974
Bolivia	147	196	165	225	279	206	239	250
Brazil	176	206	295	403	672	655	727	752
Chile	475	555	649	802	863	985	1,502	1,749
Colombia	192	199	233	289	395	461	499	548
Costa Rica	250	237	341	481	646	625	797	868
Cuba	382	354	380	367	545	695	539	612
Dominican Rep.	145	191	241	288	437	446	662	736
Ecuador	115	157	193	240	449	416	431	508
El Salvador	129	178	213	264	285	250	316	325
Guatemala	309	228	251	328	440	376	448	449
Haiti	88	99	100	87	85	66	50	45
Honduras	349	380	409	480	564	521	569	615
Mexico	240	331	428	614	924	897	1,067	1,114
Nicaragua	170	169	207	297	241	162	183	199
Panama	367	328	402	639	836	768	1,041	1,170
Paraguay	187	189	185	222	400	407	365	368
Peru	214	262	337	428	502	361	453	519
Uruguay	518	668	724	763	970	956	1,194	1,237
Venezuela	367	587	819	1,034	1,097	878	896	896
Latin America	**263**	**311**	**385**	**503**	**693**	**654**	**758**	**798**
United States	**2,366**	**3,101**	**3,700**	**4,943**	**6,155**	**7,647**	**9,489**	**10,225**

SOURCE: See data appendix for sources and methodology for series.

Table 2-8
ECLA DER SERIES: GDP/C PERCENTAGE GROWTH, 1940-2005

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
Brazil	17%	43%	37%	67%	-2%	11%	3%	327%
Mexico	38%	29%	43%	51%	-3%	19%	4%	365%
Latin Am	**18%**	**24%**	**31%**	**38%**	**-6%**	**16%**	**5%**	**203%**
U.S.	**31%**	**19%**	**34%**	**25%**	**24%**	**24%**	**8%**	**332%**

SOURCE: Calculated from table 2-7.

Table 2-9
ECLA DER SERIES: GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1940-2005

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
Brazil	1.6%	3.7%	3.2%	5.2%	-0.2%	1.0%	0.7%	2.3%
Mexico	3.3%	2.6%	3.7%	4.2%	-0.3%	1.7%	0.9%	2.4%
Latin America	1.67%	2.16%	2.72%	3.25%	-0.58%	1.49%	1.03%	1.72%
United States	2.74%	1.78%	2.94%	2.22%	2.19%	2.18%	1.50%	2.28%

SOURCE: Calculated from table 2-7.

Overall, Latin America only outperformed the U.S. in GDP/C growth in the 1950s and 1970, losing ground in all other periods. The United States GDP/C growth averaged 2.3% for the entire 65 year period, and was fairly constant during each decade, though the 1940-70 period averaged about 2.5%, whereas the 1970-2000 period averaged slightly less, at about 2%.

Although Latin America as a whole underperformed, the two giants of Latin America, Brazil and Mexico, had almost identical GDP/C growth rates to the U.S., with Brazil and the U.S. averaging about 2.3% and Mexico averaging 2.4% for the 1940-2005 period.

Table 2-10
ECLA DER SERIES: LATIN AMERICA, BRAZIL, AND MEXICO GDP/C AS A PERCENT OF U.S. GDP/C, 1940-2005
(U.S. = 100)

	1940	1950	1960	1970	1980	1990	2000	2005
Brazil	7.4%	6.6%	8.0%	8.2%	10.9%	8.6%	7.7%	7.4%
Mexico	10.1%	10.7%	11.6%	12.4%	15.0%	11.7%	11.2%	10.9%
Latin America	11.1%	10.0%	10.4%	10.2%	11.3%	8.6%	8.0%	7.8%
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-7.

Although Latin America's GDP/C averaged a respectable 1.7% growth over the 65 year period, it was less than the U.S. GDP/C growth (2.3%), and therefore Latin America lost relative ground to the U.S. as table 2-10 reveals.

However, from 1940-1980 Latin America's relative position is fairly stable at about 11% of GDP/C. This continued until the lost decade of the 1980s reduced this number to 8.6%.

Growing at nearly the same rate as the U.S. (2.3%), Brazil maintains its GDP/C relative position over the 65 year period. Meanwhile, Mexico, growing slightly faster than the U.S. at 2.4%, actually gains relative ground on the U.S., increasing from 10 to nearly 11% of U.S. GDP/C.

GDP ANALYSIS, PPP SERIES

The following GDP series is also based primarily on sources from the Economic Commission for Latin America, however it utilizes PPP conversion rates rather than dollar exchange rates. The full methodology involved in the construction of this series is explained in the data appendix for this chapter.

The following series of tables (2-11, 2-12, and 2-13) provide the basic GDP series, percentage growth rates, and average annual rates of growth for Latin America and the United States

Table 2-11
ECLA PPP SERIES: LATIN AMERICA AND UNITED STATES GDP, 1940-2005
(Millions of 1970 U.S. dollars)

	1940	1950	1960	1970	1980	1990	2000	2005
Latin America								
Argentina	10,048	14,017	18,789	28,686	33,380	29,393	43,955	48,493
Bolivia	523	698	725	1,244	1,966	1,808	2,617	3,018
Brazil	8,024	12,309	23,774	42,885	90,592	108,638	140,358	155,717
Chile	2,495	3,499	5,147	7,961	10,008	13,471	24,020	29,566
Colombia	3,015	4,325	6,768	11,217	19,354	27,772	35,887	42,519
Costa Rica	202	298	593	1,139	1,973	2,503	4,074	4,890
Cuba	1,639	2,095	2,713	3,196	5,355	7,367	6,005	6,894
Dominican R.	294	533	929	1,523	2,978	3,744	6,656	8,012
Ecuador	424	796	1,281	2,142	5,344	6,383	7,921	9,917
El Salvador	310	512	807	1,397	1,920	1,876	2,878	3,184
Guatemala	840	885	1,285	2,196	3,806	4,139	6,217	7,045
Haiti	311	401	483	514	606	585	541	530
Honduras	229	323	468	737	1,172	1,456	2,014	2,402
Mexico	6,632	12,926	22,802	44,934	90,185	106,118	149,836	163,506
Nicaragua	154	239	398	776	857	731	1,021	1,186
Panama	299	371	595	1,266	2,144	2,437	4,039	4,976
Paraguay	306	410	521	813	1,885	2,550	2,883	3,207
Peru	1,797	2,518	4,217	7,115	10,947	9,886	14,645	17,846
Uruguay	1,273	1,867	2,295	2,676	3,528	3,706	4,946	5,134
Venezuela	1,528	3,360	6,978	12,457	18,609	19,458	24,564	26,911
Latin Amer.	**40,343**	**62,381**	**101,569**	**174,878**	**306,609**	**354,019**	**485,078**	**544,954**
U.S.	**313,753**	**489,326**	**688,828**	**1,038,520**	**1,421,190**	**1,958,331**	**2,702,955**	**3,065,819**

SOURCE: See data appendix for sources and methodology for series.

TABLE 2-12
ECLA PPP SERIES: GDP PERCENTAGE GROWTH, 1940-2005

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
Brazil	53%	93%	80%	111%	20%	29%	11%	1841%
Mexico	95%	76%	97%	101%	18%	41%	9%	2365%
Latin Am.	55%	63%	72%	75%	15%	37%	12%	1251%
U.S.	56%	41%	51%	37%	38%	38%	13%	877%

SOURCE: Calculated from table 2-11.

TABLE 2-13
ECLA PPP SERIES: AVERAGE ANNUAL COMPOUND GDP GROWTH, 1940-2005

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
Brazil	4.4%	6.8%	6.1%	7.8%	1.8%	2.6%	2.1%	4.7%
Mexico	6.9%	5.8%	7.0%	7.2%	1.6%	3.5%	1.8%	5.1%
Latin Amer.	4.45%	5.00%	5.58%	5.78%	1.45%	3.20%	2.36%	4.09%
U.S.	4.54%	3.48%	4.19%	3.19%	3.26%	3.28%	2.55%	3.57%

SOURCE: Calculated from table 2-11.

For the entire 65 year period, Latin America's total average annual compound growth averaged 4.1% compared to 3.6% for the United States. As the table above shows, although the U.S. grew slightly faster than Latin America during the 1940s (just 4.54% vs. Latin America's 4.45%), from 1950s through 1980 Latin America enjoyed a much stronger GDP growth rate.

However, this strong growth was substantially reduced during "lost decade" of the 1980s. Latin America's growth rate fell to less than half of the growth rate of the United States during the 1980s. Latin America recovered somewhat from this crisis in the 1990s, nearly equaling (but just below) the U.S. GDP growth rate, a trend which has continued into the 21st century.

Table 2-14
ECLAC PPP SERIES: LATIN AMERICA GDP AS A PERCENT OF U.S. GDP, 1940-2005

	1940	1950	1960	1970	1980	1990	2000	2005
Brazil	2.6%	2.5%	3.5%	4.1%	6.4%	5.5%	5.2%	5.1%
Mexico	2.1%	2.6%	3.3%	4.3%	6.3%	5.4%	5.5%	5.3%
Latin Am.	**12.9%**	**12.7%**	**14.7%**	**16.8%**	**21.6%**	**18.1%**	**17.9%**	**17.8%**
U.S.	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

SOURCE: Calculated from table 2-11.

Because of Latin America's higher GDP growth rate compared to the United States, its relative position to the United States has also improved as table 2-15 shows. Following a slight decrease from 1940 to 1950 (dropping from 12.9% to 12.7%), there was a steady rise from 1950's 12.7% to 1980's high of 21.6%. The downturn in the lost decade reduced Latin America's relative position to 18.1% in 1990. Since then, its relative position has declined slightly to 17.9% in 2000 and 17.8% in 2005.

GDP/C ANALYSIS PPP SERIES

The following tables (2-16, 2-17, and 2-18) present the GDP/C calculations for the PPP series, along with the percentage growth, and annual average compound growth rates for the series. The full methodology is provided in the data appendix.

Table 2-15

ECLAC PPP SERIES: LATIN AMERICA AND UNITED STATES GDP/C, 1940-2005
(U.S. 1970 dollars)

	1940	1950	1960	1970	1980	1990	2000	2005
Latin America								
Argentina	709	817	911	1,197	1,188	902	1,191	1,252
Bolivia	194	257	216	295	367	271	315	329
Brazil	195	228	327	447	745	727	806	833
Chile	493	575	673	832	896	1,022	1,559	1,814
Colombia	331	344	402	499	683	796	861	946
Costa Rica	326	308	444	626	841	814	1,037	1,130
Cuba	382	354	380	367	545	695	539	612
Dominican R.	167	220	277	331	502	513	761	846
Ecuador	172	235	289	359	671	621	644	759
El Salvador	190	262	313	388	419	367	465	478
Guatemala	382	281	310	405	543	465	554	554
Haiti	110	124	125	109	107	82	63	57
Honduras	199	217	234	274	323	298	325	351
Mexico	338	466	602	864	1,301	1,263	1,502	1,568
Nicaragua	186	184	226	324	263	177	200	217
Panama	483	431	529	841	1,100	1,011	1,369	1,539
Paraguay	276	278	273	327	589	600	539	543
Peru	269	330	425	539	632	454	571	654
Uruguay	646	834	904	953	1,211	1,193	1,491	1,544
Venezuela	412	660	921	1,162	1,233	986	1,007	1,007
Latin America	**326**	**387**	**477**	**627**	**865**	**817**	**949**	**998**
United States	**2,366**	**3,101**	**3,700**	**4,943**	**6,155**	**7,647**	**9,489**	**10,225**

Table 2-16
ECLA PPP SERIES: GDP/C PERCENTAGE GROWTH, 1940-2005

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
Brazil	17%	43%	37%	67%	-2%	11%	3%	327%
Mexico	38%	29%	43%	51%	-3%	19%	4%	365%
Latin Am.	19%	23%	31%	38%	-6%	16%	5%	206%
U.S.	31%	19%	34%	25%	24%	24%	8%	332%

SOURCE: Calculated from table 2-15.

Table 2-17
ECLA PPP SERIES: GDP/C AVERAGE ANNUAL COMPOUND GROWTH RATES, 1940-2005

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	2000-05	1940-2005
Brazil	1.6%	3.7%	3.2%	5.2%	-0.2%	1.0%	0.7%	2.3%
Mexico	3.3%	2.6%	3.7%	4.2%	-0.3%	1.7%	0.9%	2.4%
Latin America	1.71%	2.13%	2.77%	3.26%	-.57%	1.51%	1.03%	1.74%
United States	2.74%	1.78%	2.94%	2.22%	2.19%	2.18%	1.50%	2.28%

SOURCE: Calculated from table 2-15.

In GDP/C terms, Latin America improved at a respectable annualized rate of 1.7% for the entire 65 year period. However, this growth rate underperformed the U.S. which grew at a rate of 2.3%.

As was the case with GDP, Latin American GDP/C growth showed a steady percentage rise from the 1940s through 1980. The declines of the 1980s brought about a reversal to negative GDP/C growth: during that period 15 of 20 Latin American countries had average negative GDP/C growth, and only five with positive GDP/C growth. During the 1990s, the situation improved to positive, though low, GDP/C growth averaging 1.5%. In the first five years of the 21st century, the GDP/C growth rate for Latin America has remained positive, though still low at 1% for 2000-2005.

Overall, Latin America only outperformed the U.S. in GDP/C growth in the 1950s and 1970, losing ground in all other periods. The United States GDP/C growth averaged 2.3% for the entire 65 year period.

In spite of the overall underperformance for Latin America, the two giants of Latin America, Brazil and Mexico, both perform at rates nearly identical to the United States. Both Brazil and the U.S. had GDP/C growth rates of about 2.3%, while Mexico grew at a rate of 2.4%. (Just as we saw with the DER series).

Table 2-18
ECLA PPP SERIES: LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C, 1940-2005

	1940	1950	1960	1970	1980	1990	2000	2005
Brazil	8.2%	7.4%	8.8%	9.0%	12.1%	9.5%	8.5%	8.2%
Mexico	14.3%	15.0%	16.3%	17.5%	21.1%	16.5%	15.8%	15.3%
Latin Am.	**13.8%**	**12.5%**	**12.9%**	**12.7%**	**14.0%**	**10.7%**	**10.0%**	**9.8%**
U.S.	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

SOURCE: Calculated from table 2-15.

Although Latin America's GDP/C averaged 1.7% growth over the 65 year period, it was less than the U.S. GDP/C growth of 2.3% which lead to a widening of the GDP/C gap as table 2-18 demonstrates. However, from 1940-1980 Latin America's relative position is fairly stable at about 14% of GDP/C. It is only after the lost decade of the 1980s that the relative decline sets in, reducing this number to 10.7%.

In contrast to the overall Latin America trend, Brazil equals the U.S. GDP/C growth rate and therefore maintains the same relative position in 2005 as it had in 1940. Mexico, growing slightly faster than the U.S. at 2.4%, actually gains relative ground on the U.S., increasing from 14.3% to 15.3% of U.S. GDP/C. Therefore, although the overall trend for Latin America is a widening GDP/C gap, for Brazil there is no widening of the gap, and for Mexico there is a narrowing of the gap.

CONCLUSION/SUMMARY

Brief Comparison and Contrast between the DER and PPP series

The only difference between the two series analyzed in this section (ECLA DER and ECLA PPP) is the choice of nominal dollar exchange rates for the DER series and purchasing power parity rates for the PPP series. What difference does a nominal exchange rate selection or a PPP rate selection make?

The biggest difference between the two series is the overall size of GDP and GDP/C: the PPP series is substantially higher than the nominal exchange rate series. The following table shows the difference for the two GDP series.

Table 2-19
LATIN AMERICA GDP DER AND PPP, 1940-2005
(Millions 1970 U.S. dollars)

	1940	1950	1960	1970	1980	1990	2000	2005
L.A. DER	32,571	50,131	81,886	140,398	245,825	283,525	387,744	435,773
L.A. PPP	40,343	62,381	101,569	174,878	306,609	354,019	485,078	544,954

SOURCE: Tables 2-1 and 2-11.

As table 2-19 shows, the resulting difference is large. The following table calculates the ratio of PPP GDP to DER GDP, revealing that on average the PPP rates in this series boost GDP 25% over nominal GDP.

Table 2-20
GDP PPP AS A PERCENT OF GDP DER, 1940-2005

1940	1950	1960	1970	1980	1990	2000	2005
123.86%	124.44%	124.04%	124.56%	124.73%	124.86%	125.10%	125.05%

SOURCE: Calculated from table 2-19.

The two resulting GDP/C series from the DER and PPP calculations show the same general difference: a markedly higher GDP/C for PPP, as is shown in the following table.

Table 2-21
GDP/C PPP AND DER
(1970 U.S. Dollars)

	1940	1950	1960	1970	1980	1990	2000	2005
L.A. DER	263	311	385	503	693	654	758	798
L.A. PPP	326	387	477	627	865	817	949	998

SOURCE: Table 2-7 and table 2-15.

Table 2-22
GDP/C PPP AS A PERCENT OF GDP/C DER, 1940-2005

1940	1950	1960	1970	1980	1990	2000	2005
123.95%	124.44%	123.90%	124.65%	124.82%	124.92%	125.20%	125.06%

SOURCE: Calculated from table 2-21.

As was the case with GDP, the PPP GDP/C series averages about 25% more than the DER GDP/C series.

Therefore the biggest effect that choice of DER or PPP rates has is upon the absolute size of Latin Americas GDP and GDP/C. Since these numbers are used in the comparison to the United States, the secondary effect of this difference is the size of the economic gap: for the PPP series the gap is smaller, for the DER series the gap is larger. The following tables reveal the differences in relative gaps as compared to the United States for GDP and GDP/C.

Table 2-23
LATIN AMERICA GDP AS A PERCENT OF U.S. GDP, DER AND PPP, 1940-2005
(U.S. = 100)

	1940	1950	1960	1970	1980	1990	2000	2005
L.A. DER	10.4%	10.2%	11.9%	13.5%	17.3%	14.5%	14.3%	14.2%
L.A. PPP	12.9%	12.7%	14.7%	16.8%	21.6%	18.1%	17.9%	17.8%

SOURCE: Tables 2-6 and 2-14

Table 2-24
LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C, DER AND PPP, 1940-2005
(U.S. = 100)

	1940	1950	1960	1970	1980	1990	2000	2005
L.A. DER	11.1%	10.0%	10.4%	10.2%	11.3%	8.6%	8.0%	7.8%
L.A. PPP	13.8%	12.5%	12.9%	12.7%	14.0%	10.7%	10.0%	9.8%

SOURCE: Tables 2-10 and 2-18.

As the above tables reveal, the difference in gaps is substantial. For GDP, Latin America either starts at 10.4% of U.S. GDP and increases to 14.2% (DER), or starts at 12.9% and increases to 17.8% (PPP). For GDP/C, Latin America either starts at 11.1% and decreases to 7.8% (DER), or starts at 13.9% and decreases to 9.8% (PPP).

The good news is that if our primary concern is the overall trend of economic development, we don't have to choose sides. Both the DER and PPP series shows the same economic development trends.

Although there is a large difference in the absolute numbers produced by the DER and PPP series, their corresponding percentage growth rates are nearly identical, though with slight differences as shown in the GDP growth rate table below. The difference for the entire 1940-2005 period is an increase to 4.09% growth in the PPP series from 4.07% in the DER series.

TABLE 2-25
COMPARISON OF DER AND PPP GROWTH RATES

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
L.A. DER	4.41%	5.03%	5.54%	5.76%	1.44%	3.18%	2.36%	4.07%
L.A. PPP	4.45%	5.00%	5.58%	5.78%	1.45%	3.20%	2.36%	4.09%

SOURCE: Tables 2-4 and 2-12.

The same is true for the GDP/C series. Although the absolute numbers vary greatly between the DER and PPP series, the percentage growth rates are nearly identical. Overall, Latin America's growth for the entire period is 1.74% as measured by the PPP series or 1.74% as measured by the DER series. The following table compares the differences in growth rates for the 1940-2005 period.

Table 2-26
GDP/C AVERAGE ANNUAL GROWTH RATE, DER AND PPP, 1940-2005

	1940-1950	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	1940-2005
L.A. DER	1.67%	2.16%	2.72%	3.25%	-0.58%	1.49%	1.03%	1.72%
L.A. PPP	1.71%	2.13%	2.77%	3.26%	-0.57%	1.51%	1.03%	1.74%

SOURCE: Tables 2-8 and 2-16.

The individual country growth rates are not affected by the conversion from DER to PPP. The DER and PPP country growth rates are identical. However, when it comes to the aggregate totals for Latin America, there can be minor changes to growth rates as the table above reveals. This occurs because the PPP "boost" given to some countries is greater than other countries. In any given year, if countries with a higher boost make up a greater percentage of total GDP, the percent increase will be higher. Likewise, if in a given year a larger proportion of the GDP is made up by countries given a lower "boost" the percent increase will be lower. Yet in this series the effects of this distortion are minimal.

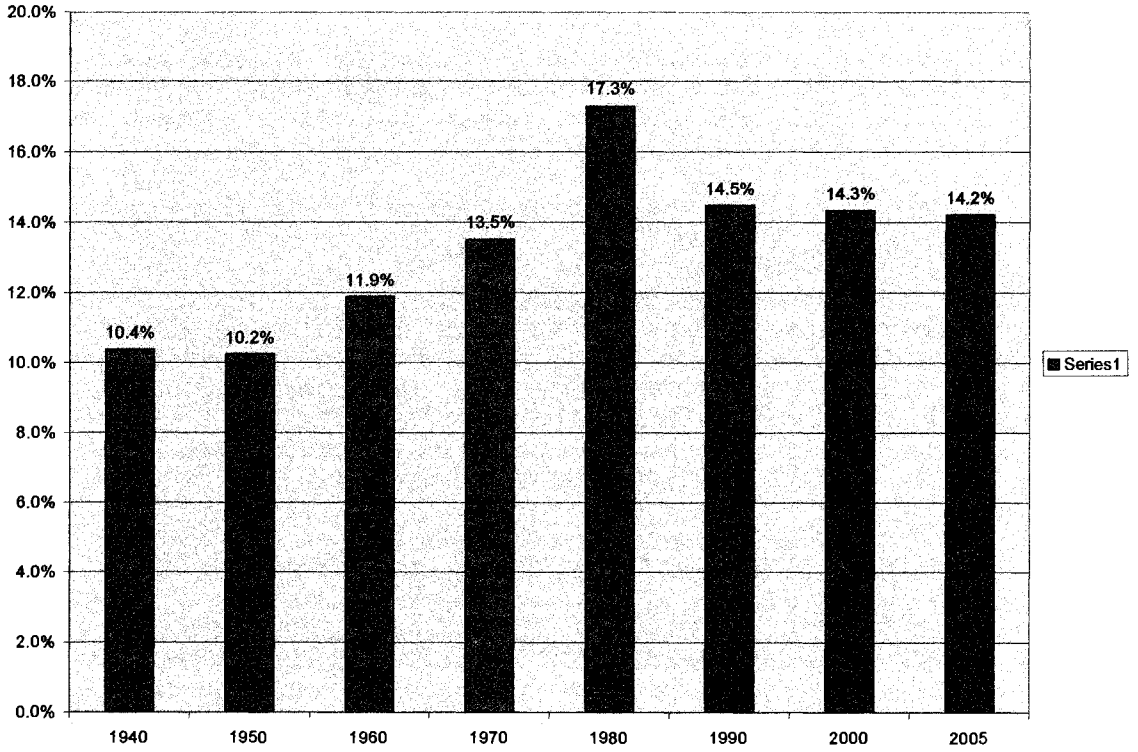
GDP Summary/Conclusion

Latin America strongly outperformed the U.S. in terms of GDP growth, averaging 4.07% (DER) or 4.09% (PPP) for the 1940-2005 period compared to the United States average growth rate of 3.57%. The results of this stronger relative growth were a narrowing of the United States/Latin America GDP relative gap.

Both the DER and PPP series show that the GDP gap between the U.S. and Latin America has narrowed. The DER series showed an increase from 10.4% of U.S. GDP in 1940 to 14.2% in 2005. The PPP series revealed the same general trend, only with a higher starting point because of the PPP "boost". The PPP GDP series began at 12.9% in 1940 and improved to 17.8% of U.S. GDP in 2005.

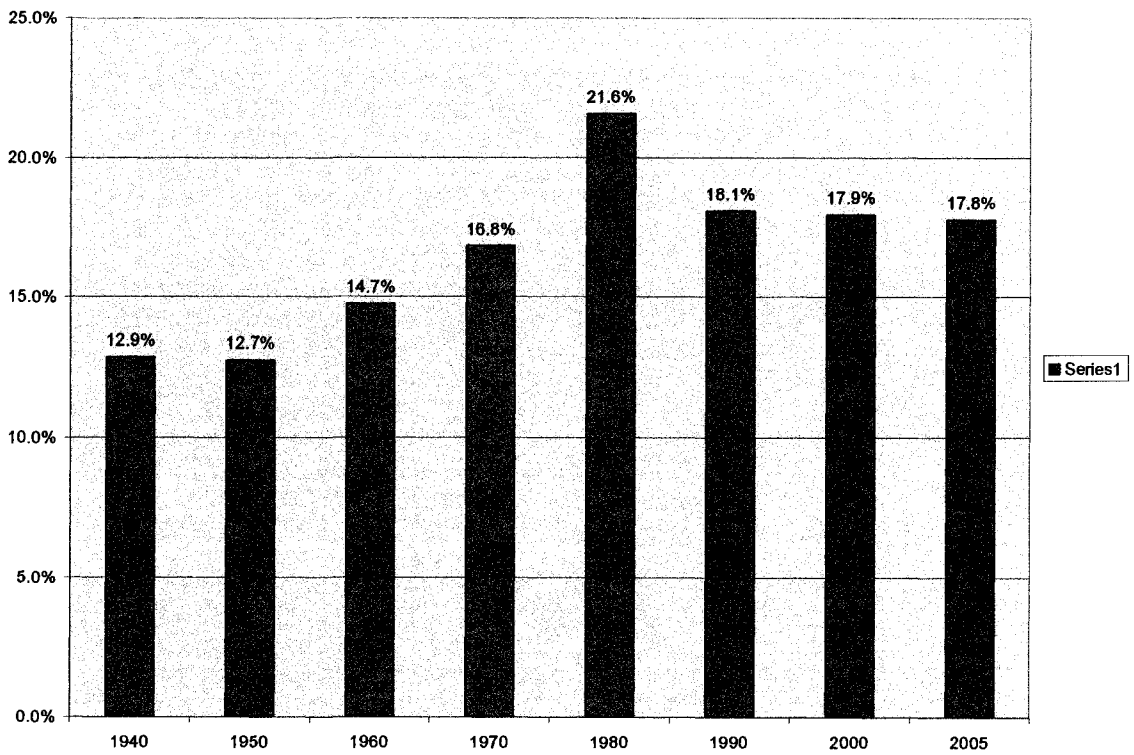
Though the trends are nearly identical, the PPP series narrowed the gap slightly more than the DER series given its higher average annual growth rate. The improvement for the PPP series from 12.9 to 17.8 represents a 38% improvement, while the DER series increase from 10.4 to 14.2 represents a 36.5% improvement. The following charts (2-1 and 2-2) summarize these results for the DER and PPP series respectively.

CHART 2-1
LATIN AMERICA GDP (DER) AS A PERCENT OF U.S. GDP
(U.S. = 100)



SOURCE: Table 2-6.

Chart 2-2
LATIN AMERICA GDP (PPP) AS A PERCENT OF U.S. GDP
(U.S. =100)



SOURCE: Table 2-14.

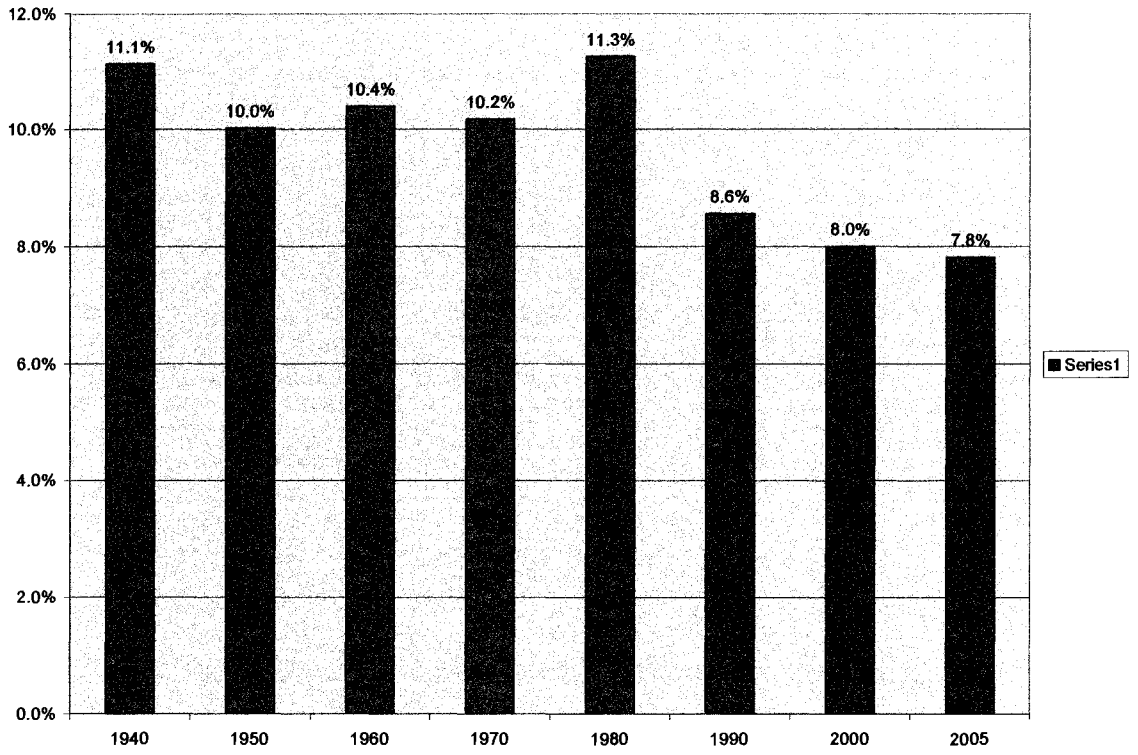
GDP/C Summary/Conclusion

Although Latin America strongly outperformed the U.S. in terms of GDP growth, it underperformed in terms of GDP/C growth averaging 1.72% (DER) or 1.74% (PPP) compared to the United States average growth rate of 2.28%.

Both the DER and PPP series show the same trend of a widening GDP/C gap between the United States and Latin America. The DER series showed a decrease from 11.1% of U.S. GDP in 1940 to 7.8 % in 2005. The PPP series revealed the same general trend, only with a higher starting point because of the PPP "boost". The PPP GDP series began at 13.8 % in 1940 and decreased to 9.8% of U.S. GDP in 2005.

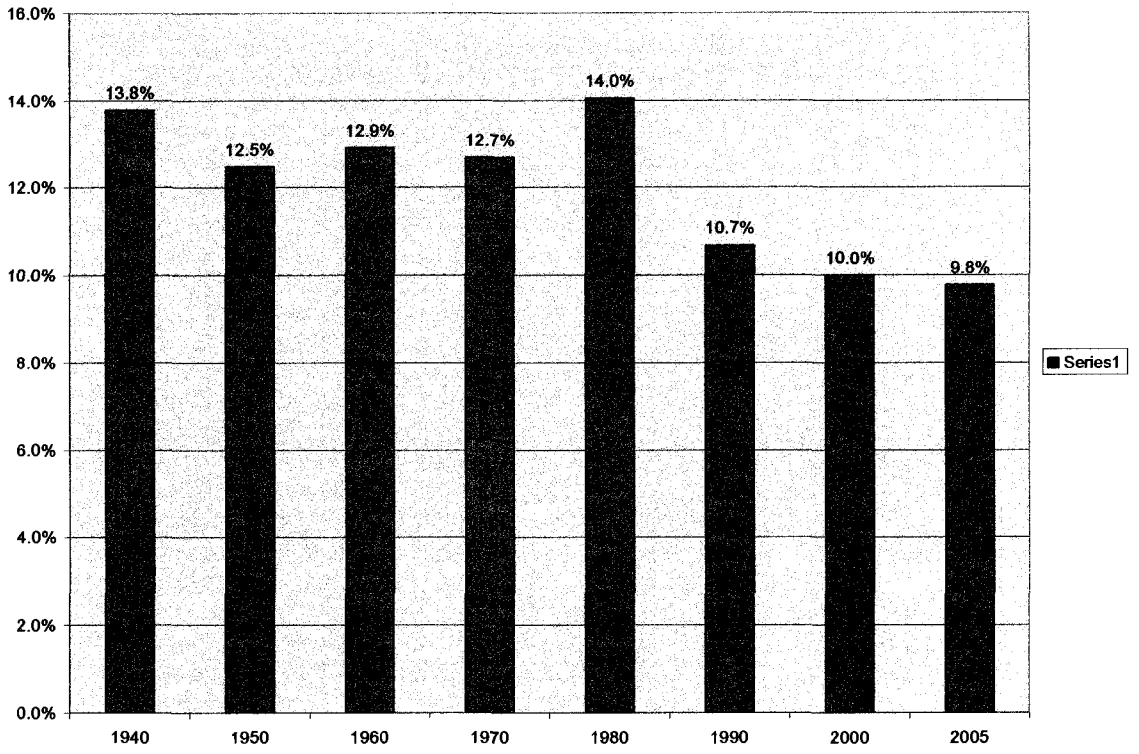
Though the trends are nearly identical, the PPP series showed a slightly smaller widening gap slightly than the DER series given its higher average annual growth rate. The decrease for the PPP series from 13.8 to 9.8 represents a 29% decrease, while the DER series decrease from 11.1 to 7.8 represents a 30% decrease. The following charts (2-3 and 2-4) summarize these results for the DER and PPP series respectively.

Chart 2-3
LATIN AMERICA GDP/C (DER) AS A PERCENT OF U.S. GDP/C
(U.S. =100)



SOURCE: Table 2-10.

Chart 2-4
LATIN AMERICA GDP/C (PPP) AS A PERCENT OF U.S. GDP/C
(U.S. = 100)



SOURCE: Table 2-18.

Section 3: Thorp Series

GDP ANALYSIS

The series in this chapter is developed from Rosemary Thorp's *Progress, Poverty and Exclusion.*[1] Thorp's GDP series from this book covers all twenty Latin American countries from 1950-1995 and nine countries for an extended 1900-1995 analysis. The appendix to her work presents the data in GDP/C form, but also has a table for population figures. Therefore, the GDP series I have arranged below is simply a product of these two tables (and may therefore have some rounding differences from the original material- which is not provided).

The Thorp series uses 1970 for its base year, PPP exchange rates, and also takes a three year average for each data point to reduce yearly data fluctuations. The following three tables (2-27, 2-28, and 2-29) present the GDP data, percentage growth, and average annual compound growth rates for the series. The statistical appendix for chapter two provides additional information on the sources and methodology used here.

[1] Rosemary Thorp, *Progress, Poverty and Exclusion* (New York: Inter-American Development Bank, 1998).

Table 2-27
THORP SERIES: LATIN AMERICA AND U.S. GDP, 1900-1995
(Millions 1970 U.S. Dollars)

	1900	1920	1930	1940	1950	1960	1970	1980	1990	1995
Argentina	2,060	4,546	6,650	9,139	13,257	17,565	28,539	38,713	37,330	48,491
Bolivia					708	720	1,238	1,885	1,900	2,298
Brazil	1,277	2,651	4,230	6,644	11,490	23,520	43,131	93,997	117,000	130,888
Chile	842	1,206	2,194	2,455	3,503	5,166	8,081	10,690	14,384	19,780
Colombia	472	1,069	1,820	2,670	4,301	6,694	11,449	17,878	24,193	30,046
Costa Rica		117	139	202	297	586	1,133	1,962	2,452	3,013
Cuba	428	1,184	1,335	1,640	2,095	2,713	3,196	6,243	7,278	5,300
Domin. R.					521	908	1,518	2,986	3,650	4,264
Ecuador	88	213	317	416	779	1,265	2,137	4,315	5,337	6,292
El Salv.		192	256	310	510	806	1,400	1,943	1,836	2,474
Guatemala		298	433	840	868	1,291	2,208	3,732	4,111	5,045
Haiti					400	469	519	773	765	610
Honduras		156	251	224	325	462	739	1,133	1,418	1,662
Mexico	3,551	5,155	5,376	7,280	12,704	22,573	44,474	78,584	92,131	99,348
Nicaragua		111	136	154	232	406	780	846	709	776
Panama					368	604	1,274	2,010	2,280	2,891
Paraguay				339	415	528	808	1,793	2,408	2,787
Peru	391	854	1,360	1,797	2,571	4,206	7,029	10,643	9,700	12,132
Uruguay				1,307	1,896	2,290	2,627	3,317	3,574	4,304
Venezuela	269	428	1,346	1,900	4,962	8,549	14,237	23,135	24,338	27,261
L.A. 9	9,378	17,305	24,628	33,939	55,661	92,252	162,274	284,196	331,693	379,539
L.A. 20					62,101	101,236	176,392	306,271	356,377	409,514
U.S.	112,461	202,399	264,724	329,354	502,339	694,534	1,056,623	1,435,116	1,844,086	2,034,288

SOURCE: See data appendix for sources and methodology.

Table 2-28
THORP SERIES: GDP PERCENTAGE GROWTH, 1900-1995

	1950-60	1960-70	1970-80	1980-90	1990-95	1900-95	1900-1950	1950-95
Brazil	104.7%	83.4%	117.9%	24.5%	11.9%	10150.7%	799.9%	1039.1%
Mexico	77.7%	97.0%	76.7%	17.2%	7.8%	2697.4%	257.7%	682.0%
Latin Am.	63.0%	74.2%	73.6%	16.4%	14.9%	X	X	559.4%
U.S.	38.3%	52.1%	35.8%	28.5%	10.3%	1708.9%	346.7%	305.0%

SOURCE: Calculated from table 2-27.

TABLE 2-29
THORP SERIES: AVERAGE ANNUAL GDP GROWTH, 1900-1995

	1950-60	1960-70	1970-80	1980-90	1990-95	1900-95	1900-1950	1950-95
Brazil	7.4%	6.3%	8.1%	2.2%	2.3%	5.0%	4.5%	5.6%
Mexico	5.9%	7.0%	5.9%	1.6%	1.5%	3.6%	2.6%	4.7%
Latin America	5.0%	5.7%	5.7%	1.5%	2.8%	x	X	4.3%
United States	3.3%	4.3%	3.1%	2.5%	2.0%	3.1%	3.0%	3.2%

SOURCE: Calculated from table 2-27.

During the entire 1950-1995 period, Latin America strongly outperformed the U.S. in GDP growth. Latin America grew at an average annual rate of 4.3% compared to 3.2% for the United States. Latin America's growth was strongest during the 1950-1980 period (over 5% for those 30 years), then drops off in the lost decade to 1.5% (the only decade in which it trails the U.S.), and then shows a improvement in the 1990s to 2.8%.

Table 2-30
THORP SERIES: LATIN AMERICA GDP AS A PERCENT OF U.S. GDP, 1950-1995
(U.S. = 100)

	1950	1960	1970	1980	1990	1995
Brazil	2.3%	3.4%	4.1%	6.5%	6.3%	6.4%
Mexico	2.5%	3.3%	4.2%	5.5%	5.0%	4.9%
Latin America	12.4%	14.6%	16.7%	21.3%	19.3%	20.1%
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-27.

Because Latin America outpaced the U.S. in GDP growth, Latin America narrowed the relative GDP gap with the United States. As table 2-30 shows, Latin America increased its GDP from 12.4% of U.S. GDP to 20.1% between 1950 and 1995.

Brazil and Mexico, among the top performers in GDP growth during the period gained even more relative ground than the Latin American average: Brazil nearly tripled its relative position from 2.3% of U.S. GDP to 6.4%, whereas Mexico nearly doubled its relative position from 2.5% to 4.9%.

"Latin America Nine"

To extend the GDP analysis for the entire century, the following section will use the nine countries for which there is data for the entire 1900-1995 period: Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Peru, and Venezuela. These nine countries represent the majority of the population and economic output of Latin America and are therefore good proxies.

In addition, a comparison of growth rates and average relative improvement of these "Latin America 9" compared to the entire Latin America 20 countries shows that they demonstrate nearly the same results as the entire group. The Latin America 9 grew at 4.4% for the 1950 through 1995 period, compared to the 4.3% for all of Latin America. The Latin America 9 increased their relative position from 11.1% to 18.7% of U.S. GDP, whereas all of Latin America improved from 12.4% to 20.1% of U.S. GDP. Therefore, these "Latin America 9" should serve as a fairly representative sample for all of Latin America as we extend the GDP analysis to 1900.

Table 2-31
THORP SERIES: GDP PERCENTAGE GROWTH FOR LA-9 AND U.S, 1900-1995

	1900-1910	1910-1920	1920-30	1930-40	1940-50	1900-95	1900-1950	1950-95
Brazil	42.6%	45.6%	59.6%	57.1%	72.9%	10150.7%	799.9%	1039.1%
Mexico	33.5%	8.8%	4.3%	35.4%	74.5%	2697.4%	257.7%	682.0%
L.A. 9	51.6%	21.7%	42.3%	37.8%	64.0%	3947.1%	493.5%	581.9%
L.A. 20								559.4%
U.S.	41.2%	27.5%	30.8%	24.4%	52.5%	1708.9%	346.7%	305.0%

SOURCE: Calculated from table 2-27.

Table 2-32
THORP SERIES: AVERAGE ANNUAL COMPOUND GROWTH FOR LA-9 AND U.S., 1900-1995

	1900-1910	1910-1920	1920-30	1930-40	1940-50	1900-95	1900-1950	1950-95
Brazil	3.6%	3.8%	4.8%	4.6%	5.6%	5.0%	4.5%	5.6%
Mexico	2.9%	0.8%	0.4%	3.1%	5.7%	3.6%	2.6%	4.7%
L.A. 9	4.3%	2.0%	3.6%	3.3%	5.1%	4.0%	3.6%	4.4%
L.A. 20								4.3%
United States	3.5%	2.5%	2.7%	2.2%	4.3%	3.1%	3.0%	3.2%

SOURCE: Calculated from table 2-27.

Using the Latin America 9 to examine the first half of the century, we can see that Latin America again outpaced the United States in GDP, growing at 3.6% compared to the U.S. growth rate of 3%. Although still higher than the U.S., the incremental over the U.S. is much smaller than during the 1950-1995 period, and there is actually one decade period (1910-20) in which U.S.GDP growth was higher (a significant reasons being the Mexican Revolution).

For the entire 95 year period, Latin America outpaces the U.S. growing at 4% compared to 3.1% for the U.S. Because of this stronger growth, the GDP gap is also reduced for the entire period of 1900-1995 as table 2-33 reveals.

Table 2-33
THORP SERIES: LATIN AMERICAN GDP (LA-9) AS A PERCENT OF U.S. GDP, 1900-1995
(U.S. = 100)

	1900	1910	1920	1930	1940	1950	1995
Brazil	1.1%	1.1%	1.3%	1.6%	2.0%	2.3%	6.4%
Mexico	3.2%	3.0%	2.5%	2.0%	2.2%	2.5%	4.9%
L.A. 9	8.3%	9.0%	8.6%	9.3%	10.3%	11.1%	18.7%
L.A. 20						12.4%	20.1%
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-27.

Overall Latin America improves from 8.3% of U.S. GDP in 1900 to 11.1% in 1950. As previously mentioned, Latin America's growth rate improves even more in the second half of the century, growing at 4.4% (using the Latin America 9) or 4.3% (using all of Latin America) compared to the U.S. growth rate of 3.2% for the 1950-95 period. This even stronger relative growth leads to an even greater gain for Latin America in the second half of the century. The Latin America 9 improve from their 1950 mark of 11.1% to 18.7% of U.S. GDP in 1995.

GDP/C ANALYSIS

The following tables (2-34, 2-35, and 2-36) present the Thorp GDP/C series, percentage growth, and average annual compound growth rates for the series. The appendix provides the details regarding sources and methodology.

Table 2-34
THORP SERIES: LATIN AMERICA AND U.S. GDP/C, 1900-95
(Millions of 1970 U.S. dollars)

	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	1995
Argentina	439	557	513	559	645	773	852	1191	1377	1147	1402
Bolivia						261	215	294	352	289	310
Brazil	71	82	97	126	160	215	324	450	775	788	809
Chile	283	341	315	502	482	576	679	851	959	1098	1392
Colombia	118	146	172	230	291	360	420	536	674	749	856
Costa Rica			278	278	325	371	469	655	884	808	880
Cuba	272	412	402	366	374	380	390	373	649	686	480
Dominican Republic						244	298	379	543	509	545
Ecuador	89	109	132	154	159	230	285	358	542	520	549
El Salvador			164	178	190	274	329	407	409	355	429
Guatemala			235	246	382	309	337	419	514	447	475
Haiti						129	120	121	157	118	85
Honduras			216	264	195	227	237	280	307	276	294
Mexico	261	316	346	313	357	458	611	879	1163	1107	1090
Nicaragua			173	200	185	219	288	426	314	193	175
Panama						457	561	892	1098	943	1099
Paraguay					317	295	302	359	619	563	559
Peru	104	150	192	270	309	370	485	613	702	497	562
Uruguay					662	864	915	971	1156	1155	1351
Venezuela	106	115	143	408	502	974	1128	1328	1533	1248	1248
L.A. 9	180	227	237	277	317	405	509	682	940	898	942
L.A. 20						394	487	649	884	837	879
United States	1478	1,718	1,901	2,151	2,484	3,299	3,844	5,153	6,301	7,379	7,742

SOURCE: See data appendix for sources and methodology.

Table 2-35
THORP SERIES: GDP/C PERCENTAGE GROWTH, 1950-1995

	1950-60	1960-70	1970-80	1980-90	1990-95	1950-95
Brazil	50.7%	38.9%	72.2%	1.7%	2.7%	276.3%
Mexico	33.4%	43.9%	32.3%	-4.8%	-1.5%	138.0%
Latin America	23.6%	33.3%	36.2%	-5.3%	5.0%	123.1%
United States	16.5%	34.1%	22.3%	17.1%	4.9%	134.7%

SOURCE: Calculated from table 2-34.

TABLE 2-36
THORP SERIES: GDP/C AVERAGE ANNUAL COMPOUND GDP/C GROWTH, 1950-1995

	1950-60	1960-70	1970-80	1980-90	1990-95	1950-95
Brazil	4.2%	3.3%	5.6%	0.2%	0.5%	3.0%
Mexico	2.9%	3.7%	2.8%	-0.5%	-0.3%	1.9%
Latin America	2.1%	2.9%	3.1%	-0.5%	1.0%	1.8%
United States	1.5%	3.0%	2.0%	1.6%	1.0%	1.9%

SOURCE: Calculated from table 2-34.

Latin America slightly underperforms the United States in GDP/C growth, growing at 1.8% compared to the U.S. growth rate of 1.9% for the entire 1950 to1995 period. Latin America manages to increase its GDP/C rate of growth in each decade from 1950 through 1980, starting at 2.1% and increasing to 3.1%. However, the economic crises of the 1980s turned GDP/C growth to a negative .5%, with growth returning to positive at 1% in the 1990 to 1995 period.

Therefore, for the past 45 years Latin America has achieved a decent absolute improvement in GDP/C, improving at 1.8%, meaning that average GDP/C in 2000 is more than double its 1950 level. Among the top performers were Mexico, growing at the same pace as the United States (1.9%), and Brazil growing even faster at 3%.

However, for Latin America as a whole, the GDP/C gap slightly widened with the United States as the following table demonstrates (table 2-37). Latin America's GDP/C decreased from 11.9% of U.S. GDP/C in 1950 to 11.4% in 1995. Meanwhile, Mexico slightly improved its relative position to the U.S. from 13.9% to 14.1%, while Brazil jumped from 6.5% to 10.4% of U.S. GDP/C.

Table 2-37
THORP SERIES: LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C, 1950-1995
(U.S. = 100)

	1950	1960	1970	1980	1990	1995
Brazil	6.5%	8.4%	8.7%	12.3%	10.7%	10.4%
Mexico	13.9%	15.9%	17.1%	18.5%	15.0%	14.1%
Latin America	11.9%	12.7%	12.6%	14.0%	11.34%	11.35%
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-34.

Latin America Nine

To extend the GDP/C analysis for the entire century, the following section uses the nine countries for which there is data for the entire 1900-1995 period: Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Peru, and Venezuela. These nine countries represent the majority of the population and economic output of Latin America and are therefore good proxies.

In addition, for the 1950-1995 period both the full Latin America and "Latin America 9" demonstrate similar trends: the Latin America 9 grow at 1.9% compared to all of Latin America's 1.8%, and the Latin America 9 shows a slight decrease from 12.3% to 12.2% of U.S GDP/C, compared to Latin America's decrease from 11.9% to 11.35%.

The following table (table 2-38) provides the GDP/C data for the Latin America nine, the full Latin America series (for the years for which data is available) and the United States. Tables 2-39 and 2-40 show their corresponding percentage growth, and average annual compound growth rate.

Table 2-38
THORP SERIES: LATIN AMERICA, LATIN AMERICA NINE, UNITED STATES GDP/C, 1900-1995
(U.S. 1970 dollars)

	1900	1910	1920	1930	1940	1950	1995
Brazil	71	82	97	126	160	215	809
Mexico	261	316	346	313	357	458	1090
L.A. 9	180	227	237	277	317	405	942
L.A. 20						394	879
United States	1478	1,718	1,901	2,151	2,484	3,299	7,742

SOURCE: See data appendix for sources and methodology.

Table 2-39
THORP SERIES: LATIN AMERICA, LATIN AMERICA NINE, U.S., GDP/C PERCENTAGE GROWTH, 1900-1995

	1900-1910	1910-1920	1920-30	1930-40	1940-50	1900-95	1900-1950	1950-95
Brazil	15.5%	18.3%	29.9%	27.0%	34.4%	1039.4%	202.8%	276.3%
Mexico	21.1%	9.5%	-9.5%	14.1%	28.3%	317.6%	75.5%	138.0%
L.A. 9	26.2%	4.2%	17.0%	14.6%	27.7%	423.7%	125.3%	132.4%
L.A. 20								123.1%
U.S.	16.2%	10.7%	13.2%	15.5%	32.8%	423.8%	123.2%	134.7%

SOURCE: Calculated from table 2-38.

Table 2-40
THORP SERIES: LATIN AMERICA, LATIN AMERICA NINE, U.S., GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1900-1995

	1900-1910	1910-1920	1920-30	1930-40	1940-50	1900-95	1900-1950	1950-95
Brazil	1.5%	1.7%	2.7%	2.4%	3.0%	2.6%	2.2%	3.0%
Mexico	1.9%	0.9%	-1.0%	1.3%	2.5%	1.5%	1.1%	1.9%
L.A. 9	2.4%	.4%	1.6%	1.4%	2.5%	1.8%	1.6%	1.9%
L.A. 20								1.8%
United States	1.5%	1.0%	1.2%	1.4%	2.9%	1.8%	1.6%	1.9%

SOURCE: Calculated from table 2-38.

During the first half of the century, Latin America (as measured by the Latin America 9) exactly matched the U.S. pace in GDP/C growing at 1.6%. During the second half of the century, the Latin America 9 also matched the U.S. GDP/C growth rate of 1.9%. Therefore, for the entire period of 1900-1995, the Latin America 9 grew at exactly the same rate as the U.S. in GDP/C.

For the Latin America nine, there is no widening gap during the 20th century as table 2-41 shows. Latin America's GDP/C as a percent of U.S. GDP/C is 12.2% in 1900 and 1995. However, as previously noted, for the full Latin America series, there is a slight widening gap between 1950 and 1995: Latin America decreases from 11.9% of U.S. GDP/C in 1950 to 11.35% in 1995.

Table 2-41
THORP SERIES: LATIN AMERICAN AND LATIN AMERICA NINE GDP/C AS A PERCENT OF U.S. GDP/C
(U.S. = 100)

	1900	1910	1920	1930	1940	1950	1995
Brazil	4.8%	4.8%	5.1%	5.9%	6.4%	6.5%	10.4%
Mexico	17.7%	18.4%	18.2%	14.6%	14.4%	13.9%	14.1%
Latin America 9	12.2%	13.2%	12.4%	12.9%	12.8%	12.3%	12.2%
Latin America 20						11.9%	11.35%
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-38.

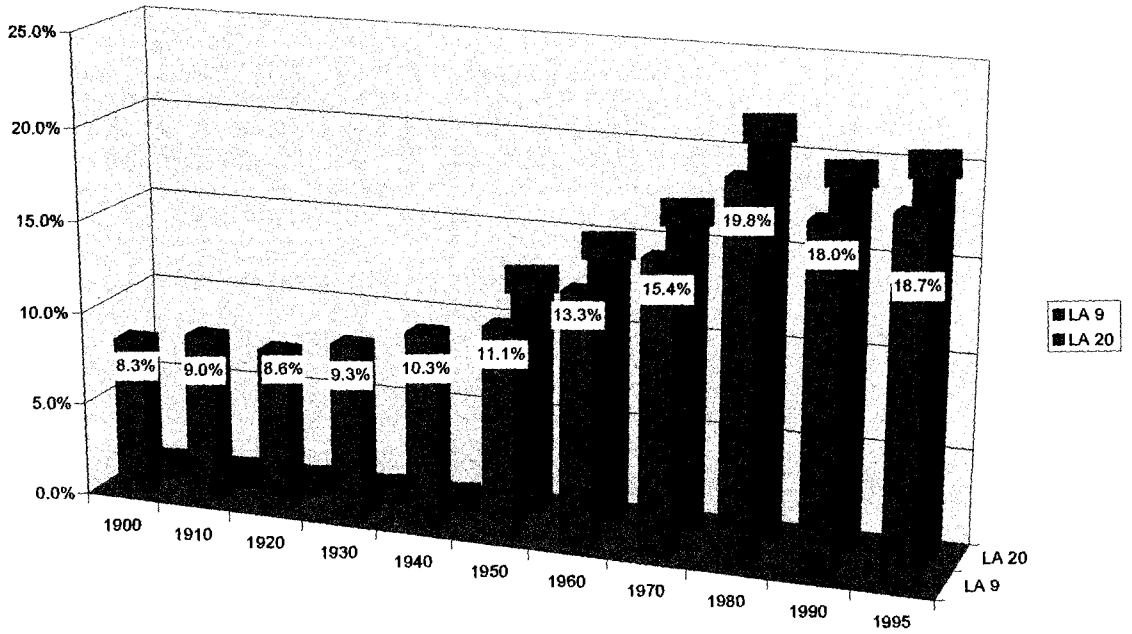
SUMMARY/CONCLUSION

GDP

In terms of GDP, Latin America strongly outperforms the United States. For the entire period (1900-1995), the Latin America 9 grow at an average annual rate of 4%, compared to the U.S. rate of 3.1%, and therefore more than double their relative position from 8.3% of U.S. GDP in 1900 to 18.7% in 1995.

The full Latin American series closely matches the results of the Latin America 9 for the 1950-1995 period, growing 4.3% compared to the Latin America 9 rate of 4.4% (while the U.S. grew at 3.2%). Looking at only the full series, Latin America improves its relative position from 12.4% of U.S. GDP in 1950 to 20.1% in 1995. Therefore, in terms of GDP, both series conclude that the GDP gap has narrowed substantially over both the last 45 and 95 years.

CHART 2-5
LATIN AMERICA 9 AND LATIN AMERICA 20 AS A PERCENT OF U.S. GDP, 1900-1995
(U.S. = 100)



SOURCE: Table 2-33.

GDP/C

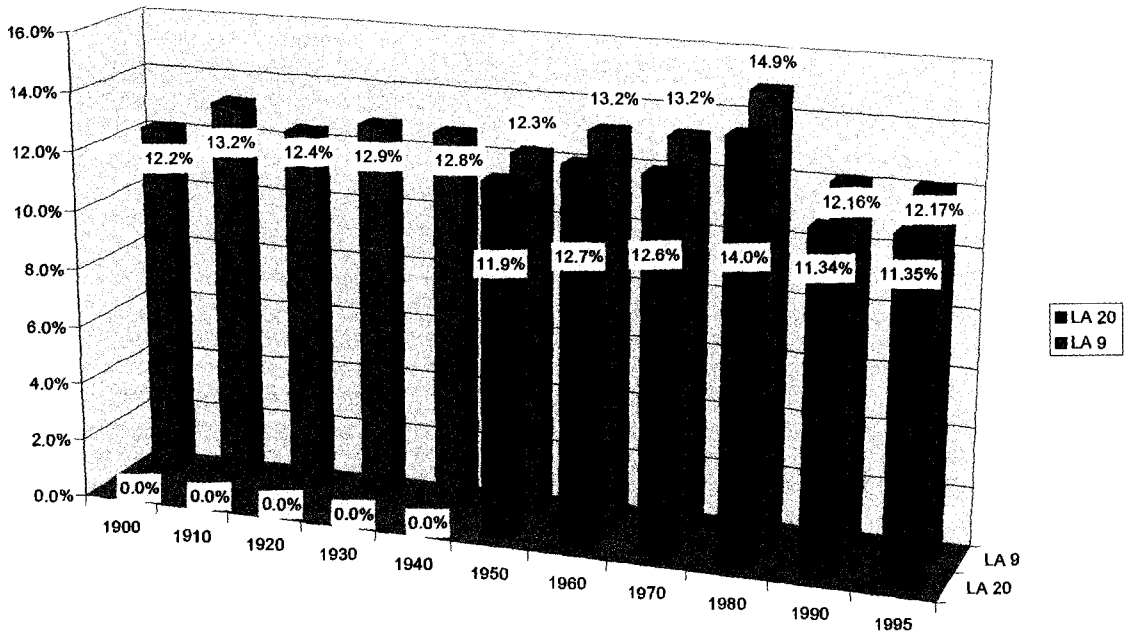
Latin America (as measured by the Latin America 9) exactly matches the U.S. GDP/C growth for the 1900 through 1995 period: both grow at an average annual rate of 1.76%. Latin America therefore maintains its relative position to the United States, beginning the series in 1900 at 12.2% of U.S. GDP/C, and finishing in 1995 also at 12.2% of U.S. GDP/C. Therefore, there is no widening GDP/C gap, the relative gap has remained constant.

From 1900 to 1950, Latin America (LA 9) grows at a slightly quicker pace than the U.S. at 1.64% compared to the U.S. 1.62%. Therefore, the Latin America 9 actually gains relative ground in the first half of the century improving from 12.2% to 12.3% of U.S. GDP/C.

However, both the Latin America 9 and the full Latin America series slightly trail the U.S. growth rate from 1950-1995, with the Latin America 9 growing at 1.9%, the full Latin America series at 1.8%, and the U.S. at 1.91%. With this slower growth the Latin America 9 decreases its relative position from 12.3% in 1950 to 12.2% in 1995. The full Latin America series also decreases its relative position from 11.9% in 1950 to 11.35% in 1995.

Therefore, for the entire 1900-1995 period there is no widening of the gap. During the 1900-1950 period, the relative gap narrows slightly (as measured by the Latin America nine). From 1950-1995, the relative gap widens slightly for both the Latin America Nine series and the full Latin America series. The net results of these two periods is that Latin America's GDP/C holds the same relative spot in 1995 as it did in 1900.

Chart 2-6
LATIN AMERICA 9 AND LATIN AMERICA 20 AS A PERCENT OF U.S. GDP/C, 1900-1995



SOURCE: Table 2-41.

Section Four: OXLAD Series DER and PPP

The Oxford Latin American Economic History Database (OXLAD) provides three basic GDP series: one in current local currency units, one in constant local currency units (1970), and one already converted from constant local currency units of 1970 into a PPP series[1]. In the following section I utilize the OXLAD 1970 constant local currency unit series and create two series: one utilizing dollar exchange rates for 1970, the other using purchasing power parity exchange rates for 1970.

The OXLAD series is only complete from 1950-2000, but also has 16 of 20 Latin American countries for 1940, 15 of 20 for 1930 and 1920, 10 of 20 for 1910, and 9 of 20 for 1900. I have extended the full series to 1940 by taking the Latin American average GDP growth (16/20 countries) to project the data back from 1945 to 1940 for Bolivia, Dominican Republic, Haiti, and Panama. The data appendix to this section provides full details on the sources and methodology used in the construction of these series.

[1] The Oxford Latin American Economic History Database (OXLAD) website is http://oxlad.qeh.ox.ac.uk/ .

OXLAD DER SERIES

Table 2-42 presents a dollar exchange rate (constant 1970 dollars) series that was calculated from the OXLAD 1970 constant local currency unit series, and converted into dollars using a nominal exchange rate series from OXLAD. The series is complete for all of Latin America from 1940-2000, with partial data for Latin America before 1940. The following tables (2-42, 2-43, and 2-44) present the GDP data, percentage growth, and average annual compound growth rates for the series.

For the entire 1940-2000 period, Latin America outperforms the U.S. growing its GDP at 4.2% compared to the U.S. rate of 3.7%. From 1940 to 1980 Latin America increases its rate of growth in each decade, increasing from 4.4% in the 1940s to 6% in the 1970s. However, the 1980s brings a steep decline to 1.5%, with the 1990s improving the rate of growth to 3%.

Table 2-42
OXLAD DER SERIES: U.S. AND LATIN AMERICA GDP, 1900-2000
(Millions of 1970 U.S. dollars)

	1900	1930	1940	1950	1960	1970	1980	1990	2000
Argentina	1,746	6,554	7,821	10,911	14,625	22,328	30,063	27,442	40,920
Bolivia			400	530	551	944	1,419	1,441	2,068
Brazil	1,735	5,131	7,237	11,103	21,444	38,681	90,782	106,463	138,283
Chile	793	2,145	2,404	3,372	4,960	7,672	10,375	13,690	23,910
Colombia	654	1,171	1,745	2,505	3,920	6,497	11,621	16,251	21,528
Costa Rica		218	237	229	455	875	1,533	1,905	2,982
Cuba		3,498	3,368	4,810	6,184	7,353	13,069	19,008	16,556
Dom. Rep			258	464	808	1,325	2,614	3,116	5,338
Ecuador	58	218	288	540	869	1,453	2,884	3,547	4,221
El Salvador		182	218	348	549	950	1,302	1,300	2,034
Guatemala		364	699	717	1,041	1,779	3,080	3,484	5,016
Haiti			250	320	386	410	655	653	589
Honduras		223	201	283	410	646	1,027	1,307	1,814
Mexico	2,279	3,583	4,715	9,190	16,212	31,947	56,247	66,719	93,790
Nicaragua		119	140	219	365	711	750	641	885
Panama			229	282	452	962	1,607	1,778	2,753
Paraguay			208	278	353	551	1,236	1,674	2,033
Peru	292	1,063	1,435	1,999	3,348	5,648	8,587	7,663	11,490
Uruguay	317	1,150	1,012	1,484	1,824	2,127	2,688	2,773	3,767
Venezuela	202	1,067	1,360	2,990	6,210	11,086	16,325	17,522	21,396
LA	**8,076**	**26,685**	**34,225**	**52,570**	**84,963**	**143,944**	**257,863**	**298,376**	**401,373**
U.S.	**105,460**	**259,284**	**313,760**	**489,323**	**688,841**	**1,038,520**	**1,421,213**	**1,958,373**	**2,703,005**

SOURCE: See data appendix for sources and methodology for construction of series.

Table 2-43
OXLAD DER SERIES: LATIN AMERICA, U.S. GDP PERCENTAGE GROWTH, 1940-2000

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1940-2000
Brazil	53%	93%	80%	135%	17%	30%	1811%
Mexico	95%	76%	97%	76%	19%	41%	1889%
LA	54%	62%	69%	79%	16%	35%	1073%
U.S.	56%	41%	51%	37%	38%	38%	761%

SOURCE: Calculated from table 2-42.

Table 2-44
OXLAD DER SERIES: LATIN AMERICA, U.S. AVERAGE ANNUAL COMPOUND GROWTH RATE, 1940-2000

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1940-2000
Brazil	4.4%	6.8%	6.1%	8.9%	1.6%	2.6%	5.0%
Mexico	6.9%	5.8%	7.0%	5.8%	1.7%	3.5%	5.1%
LA	4.4%	4.9%	5.4%	6.0%	1.5%	3.0%	4.2%
U.S.	4.5%	3.5%	4.2%	3.2%	3.3%	3.3%	3.7%

SOURCE: Calculated from table 2-43.

Table 2-45
OXLAD DER SERIES: LATIN AMERICA GDP AS A PERCENT OF U.S. GDP, 1940-2000

	1940	1950	1960	1970	1980	1990	2000
Brazil	2.3%	2.3%	3.1%	3.7%	6.4%	5.4%	5.1%
Mexico	1.5%	1.9%	2.4%	3.1%	4.0%	3.4%	3.5%
LA	**10.9%**	**10.7%**	**12.3%**	**13.9%**	**18.1%**	**15.2%**	**14.8%**

SOURCE: Calculated from table 2-43.

Because of its higher GDP growth rate of 4.2% (compared to the U.S. 3.7%), the GDP gap between the U.S. and Latin America narrows. Latin America improved from 10.9% of U.S. GDP in 1940 to 14.8% in 2000. Brazil and Mexico, being in the top 3 in GDP growth during the period, gained even more relative ground: Brazil more than doubled its relative position from 2.3% of U.S. GDP to 5.1%, whereas Mexico increased also more than doubled its position, improving from 1.5% to 3.5% of U.S. GDP.

"Latin America Nine" (DER continued)

To extend the GDP analysis for the entire century, the following section will use the nine countries for which there is data for the entire 1900 through 2000 period: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Uruguay, and Venezuela. These nine

countries represent the majority of the population and economic output of Latin America and are therefore good proxies for the Latin American region.

In addition, a comparison of the Latin America nine to the full series shows they match either closely. From 1940 through 2000, the Latin America nine grow at a rate of 4.3, while the full series grows at 4.19%. Therefore, based on their similar growth patterns, and the fact that the Latin America nine comprise the majority of the population and economic output for Latin America, they should serve as good proxy for all of Latin America as we extend the analysis to 1900.

Table 2-46
OXLAD DER SERIES: LATIN AMERICA NINE AND U.S. GDP, 1900-2000
(Millions of 1970 U.S. dollars)

	1900	1910	1920	1930	1940	1950	2000
Brazil	1,735	2,626	3,978	5,131	7,237	11,103	138,283
Mexico	2,279	3,119	3,335	3,583	4,715	9,190	93,790
LA 9	**8,076**	**12,479**	**15,304**	**22,082**	**28,018**	**44,092**	**359,305**
U.S.	**105,460**	**155,396**	**200,269**	**259,284**	**313,760**	**489,323**	**2,703,005**

SOURCE: See data appendix for source and methodology.

Table 2-47
OXLAD DER SERIES: LATIN AMERICA NINE AND U.S. GDP PERCENTAGE GROWTH, 1900-2000

	1900-1910	1910-20	1920-30	1930-40	1940-50	1900-1940	1940-2000	1900-2000
LA 9	55%	23%	44%	27%	57%	247%	1182%	4349%
U.S.	47%	29%	29%	21%	56%	198%	761%	2463%

SOURCE: Calculated from table 2-46.

Table 2-48
OXLAD DER SERIES: LATIN AMERICA NINE AND U.S. GDP AVERAGE ANNUAL COMPOUND GROWTH, 1900-2000

	1900-1910	1910-20	1920-30	1930-40	1940-50	1900-1940	1940-2000	1900-2000
LA 9	4.4%	2.1%	3.7%	2.4%	4.6%	3.2%	4.3%	3.9%
U.S.	4.0%	2.6%	2.6%	1.9%	4.5%	2.8%	3.7%	3.3%

SOURCE: Calculated from table 2-46.

Thus to extend our GDP analysis to the 1900-1940 period, Latin America (Latin America 9) also outpaced the U.S. in GDP growing at 3.2% compared to the U.S. 2.8%. There is only one decade period (1910-20) in which U.S. GDP growth was higher (a significant reasons being the Mexican Revolution).

For the entire century, the Latin America nine outpaced the United States growing at 3.9% compared to the U.S. 3.3%

Table 2-49
OXLAD DER SERIES: LATIN AMERICA NINE GDP AS A PERCENT OF U.S. GDP, 1900-2000
(U.S. = 100)

	1900	1910	1920	1930	1940	2000
Brazil	1.6%	1.7%	2.0%	2.0%	2.3%	5.1%
Mexico	2.2%	2.0%	1.7%	1.4%	1.5%	3.5%
LA	7.7%	8%	7.6%	8.5%	8.9%	13.3%

SOURCE: Calculated from table 2-46.

Given the higher rate of GDP growth (Latin America 3.2%, U.S. 2.8%), Latin America narrowed the relative gap from 1900-1940. The Latin America 9 began 1900 at 7.7% of U.S. GDP and increased to 8.9% in 1940. The Latin America 9 then continued this gain through the rest of the 20th century, improving to 13.3% of U.S. GDP in 2000.

Therefore, the GDP gap between the U.S. and Latin America narrowed throughout the 20th century.

GDP/C (DER) ANALYSIS

The following tables (2-50, 2-51, and 2-52) present the GDP/C calculations for the OXLAD DER series, the percentage growth, and average annual compound growth rates. The series is complete for Latin America only from 1940-2000. For the 1900-1940 period, there are nine countries which we can use as a proxy for Latin America (just as in the GDP series).

The data appendix provides the population sources used for the construction of the OXLAD GDP/C series.

Overall Latin American GDP/C growth averaged 1.8% for the 60 years (1940-2000) and improved 186% over the 1940 number. However, the U.S. posted even stronger GDP/C growth averaging 2.3% and improving 302% over its 1940 number. Latin American GDP/C grew at an increasing rate in each decade from 1950 up until 1980, where the rate of growth actually turned negative during the "lost decade", returning to low positive growth in the 1990s. The U.S. outperformed Latin America in each decade except for the 1950s and 1970s.

TABLE 2-50
OXLAD DER SERIES: LATIN AMERICA AND U.S. GDP/C, 1900-2000
(U.S. 1970 dollars)

	1900	1920	1930	1940	1950	1960	1970	1980	1990	2000
Argentina	379	463	544	552	639	734	940	1,065	844	1,105
Bolivia	0	0	0	148	176	144	206	253	219	248
Brazil	96	145	153	176	213	308	418	748	736	813
Chile	268	336	491	475	556	654	819	930	1,045	1,572
Colombia	168	137	158	192	221	254	316	449	503	509
Costa Rica	0	519	437	382	286	364	506	681	678	742
Cuba	0	1,084	958	785	873	880	860	1,345	1,788	1,478
Dom. Rep	0	0	0	146	207	266	326	481	435	628
Ecuador	45	95	112	116	169	199	244	355	346	334
El Salvador	0	112	126	134	187	224	276	289	254	324
Guatemala	0	185	207	318	255	272	338	445	379	441
Haiti	0	0	0	88	94	107	97	131	101	72
Honduras	0	192	235	174	198	221	245	278	275	280
Mexico	167	236	217	240	356	450	630	807	802	949
Nicaragua	0	156	174	169	206	259	389	275	166	175
Panama	0	0	0	370	353	426	673	820	741	963
Paraguay	0	0	0	187	199	202	240	392	397	370
Peru	97	139	188	215	251	334	420	496	355	448
Uruguay	330	387	665	514	674	718	779	924	892	1,128
Venezuela	82	120	342	367	602	845	1,078	1,087	899	885
LatAm	136	229	260	277	339	416	534	736	704	791
U.S.	1,386	1,881	2,107	2,366	3,214	3,812	5,065	6,240	7,664	9,512

SOURCE: See data appendix for sources and methodology.

Table 2-51
OXLAD DER SERIES: LATIN AMERICA AND U.S. GDP/C PERCENTAGEGROWTH 1940-2000

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1940-2000
Brazil	21%	45%	36%	79%	-2%	10%	362%
Mexico	48%	26%	40%	28%	-1%	18%	295%
LA	22%	23%	28%	38%	-4%	12%	186%
U.S.	36%	19%	33%	23%	23%	24%	302%

SOURCE: Calculated from table 2-50.

Table 2-52
OXLAD DER SERIES: LATIN AMERICA AND U.S. GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1940-2000

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1940-2000
Brazil	1.9%	3.8%	3.1%	6.0%	-0.2%	1.0%	2.6%
Mexico	4.0%	2.4%	3.4%	2.5%	-0.1%	1.7%	2.32%
LA	2.0%	2.1%	2.5%	3.2%	-0.4%	1.2%	1.8%
U.S.	3.1%	1.7%	2.9%	2.1%	2.1%	2.2%	2.35%

SOURCE: Calculated from table 2-50.

Therefore, although Latin America has achieved a decent absolute improvement in GDP/C, improving at an annualized rate of 1.8%, meaning that average GDP/C in 2000 is almost triple its 1940 level, it still underperformed the United States.

Among the Latin American countries, Brazil achieved the highest average GDP/C growth at 2.6%, followed by the Dominican Republic at 2.5%, and Mexico at 2.32%. Therefore, these three countries (unlike the Latin America average) either matched or outperformed the United States in GDP/C growth (though technically Mexico was under the U.S. growth rate at 2.32% compared to the U.S 2.35%).

Table 2-53
OXLAD DER SERIES: LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C, 1940-2000

	1940	1950	1960	1970	1980	1990	2000
Brazil	7.4%	6.6%	8.1%	8.3%	12.0%	9.6%	8.5%
Mexico	10.1%	11.1%	11.8%	12.4%	12.9%	10.5%	10.0%
LA	11.7%	10.5%	10.9%	10.6%	11.8%	9.2%	8.3%
U.S.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-50.

Based on its weaker growth relative to the U.S. (Latin America 1.8%, U.S. 2.3%), the GDP/C gap widened between Latin America and the United States. Latin America began 1940 at 11.7% of U.S. GDP/C and finished in 2000 at 8.3% of U.S. GDP/C.

However, Latin America actually improved its relative position from 1940 through 1980, increasing from 11.7% of US GDP/C to 11.8%, but then decreased from its 1980 high of 11.8% to 8.3% in 2000.

In spite of Latin America's overall decline, the two giants of the region, Brazil and Mexico, fared much better. With a higher GDP/C growth rate than the U.S., Brazil improved its relative position, increasing its GDP/C from 7.4% of U.S.GDP/C in 1940 to 8.5% in 2000. Mexico retained the same general relative position, with only a fraction of a percent decline from 10.1 % in 1940 to 10% in 2000.

Latin America Nine (GDP/C) DER

To extend the analysis for the entire century, the following section will use the nine countries for which there is data for the entire 1900-2000 period: Argentina, Brazil, Chile, Colombia, Ecuador Mexico, Peru, Uruguay, and Venezuela. These nine countries represent the majority of the population and economic output of Latin America and are therefore good proxies.

In addition, for the 1940 through 2000 period, the Latin America 9 growth is very close to the full Latin America set. The Latin America nine grow at an average rate of 1.9% compared to the full Latin America series rate of 1.8%. They should therefore serve as a good proxy for all of Latin America as we extend the analysis back to 1900.

Table 2-54
OXLAD DER SERIES: LATIN AMERICA NINE GDP/C, 1900-2000
(1970 U.S. dollars)

	1900	1910	1920	1930	1940	2000
Brazil	96	118	145	153	176	813
Mexico	167	206	236	217	240	949
LatAm	159	203	215	256	270	837
U.S.	1,386	1,682	1,881	2,107	2,366	9,512

SOURCE: See data appendix for sources and methodology.

Table 2-55
OXLAD DER SERIES: LATIN AMERICA NINE AND U.S. GDP/C
PERCENTAGE GROWTH, 1900-2000

	1900-1910	1910-20	1920-30	1930-40	1900-1940	1940-2000	1900-2000
Brazil	23%	23%	5%	15%	82%	362%	743%
Mexico	23%	15%	-8%	11%	43%	295%	466%
LA	28%	6%	19%	6%	69%	210%	426%
U.S.	21%	12%	12%	12%	71%	302%	586%

SOURCE: Calculated from table 2-54.

Table 2-56
OXLAD DER SERIES: LATIN AMERICA NINE AND U.S. GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1900-2000

	1900-1910	1910-20	1920-30	1930-40	1900-1940	1940-2000	1900-2000
Brazil	2.1%	2.1%	0.5%	1.4%	1.5%	2.6%	2.2%
Mexico	2.1%	1.4%	-0.8%	1.0%	.9%	2.3%	1.7%
LA	2.5%	.6%	1.7%	.5%	1.33%	1.9%	1.7%
U.S.	2.0%	1.1%	1.1%	1.2%	1.35%	2.3%	1.9%

SOURCE: Calculated from table 2-54.

During the 1900 through 1940 period, Latin America (Latin America nine) nearly matched the U.S. pace in GDP/C growing at 1.33% compared to the U.S. 1.35%. For the 1940 through 2000 period, Latin America increased the pace of its GDP/C growth to 1.8%, but the U.S. increased its growth even more to 2.2%.

Therefore, while Latin America matched the U.S. in GDP/C growth for the 1900 through 1940 period, it underperformed the U.S. in the 1940 through 2000 period, and consequently also for the entire century growing at 1.7% compared to the U.S. rate of 1.9%.

Table 2-57
OXLAD DER SERIES: LATIN AMERICA NINE GDP AS A PERCENT OF U.S. GDP, 1900-2000

	1900	1910	1920	1930	1940	2000
Brazil	7.0%	7.0%	7.7%	7.3%	7.4%	8.5%
Mexico	12.1%	12.2%	12.5%	10.3%	10.1%	10.0%
LA	11.5%	12.1%	11.4%	12.1%	11.4%	8.8%

SOURCE: Calculated from table 2-54.

Therefore, for the 1900 through 1940 period, Latin America essentially maintained the same relative position to the U.S., 11.5% in 1900 and 11.4% in 1940, the slight decrease because its growth rate was fractionally less than the U.S. (1.33% compared to the U.S. 1.35%).

However, during the 1940 through 2000 period, it trailed the U.S. by half a percentage point in annual growth resulting in a relative decline from 11.4% of U.S. GDP/C in 1940 to 8.8% of U.S. GDP/C in 2000. Therefore, for the entire 20th century, the GDP/C gap between the U.S. and Latin America widened.

OXLAD GDP PPP SERIES

The following utilizes the same OXLAD series, however, rather than converting the 1970 constant local currency unit series to dollars using exchange rates, it utilizes PPP exchange rates for 1970. The series is complete for all twenty Latin American countries from 1940-2000, with partial data for select countries before 1940. The following tables (2-58, 2-59, and 2-60) provide the GDP data, percentage growth, and average annual compound growth for the series. Details on the sources and construction of this series are provided in the appendix.

For the entire 1940-2000 period Latin America's GDP grew at a rate of 4.2% compared to 3.7% for the United States. Latin America increased its average annual GDP growth in each decade from 1940 through 1980. However, the drop off in the lost decade of the 1980s reduced growth substantially to 1.5%. In the 1990s growth rebounded to 3.1%.

Mexico and Brazil were among the top three in GDP growth (number two and three respectively) with growth rates of 5.1% and 5.0%. The Dominican Republic posted the strongest growth in the period at 5.2% GDP growth.

TABLE 2-58
OXLAD SERIES: LATIN AMERICA AND U.S. GDP, 1900-2000
(Millions of 1970 U.S. dollars)

	1900	1920	1930	1940	1950	1960	1970	1980	1990	2000
Argentina	2,243	5,336	8,419	10,048	14,017	18,789	28,686	38,623	35,256	52,572
Bolivia				526	698	725	1,244	1,870	1,899	2,726
Brazil	1,923	4,410	5,688	8,024	12,309	23,774	42,885	100,649	118,035	153,313
Chile	823	1,321	2,226	2,495	3,499	5,147	7,961	10,766	14,206	24,812
Colombia	1,129	1,444	2,022	3,013	4,325	6,769	11,217	20,065	28,060	37,171
Costa Rica		238	284	308	298	593	1,139	1,997	2,481	3,884
Cuba		3,251	3,498	3,368	4,810	6,184	7,353	13,069	19,008	16,556
Dom. Rep				296	533	928	1,523	3,005	3,581	6,135
Ecuador	86	215	321	424	796	1,281	2,142	4,252	5,229	6,223
El Salv.		193	267	321	512	807	1,397	1,915	1,912	2,991
Guatemala		314	486	931	956	1,388	2,372	4,107	4,645	6,689
Haiti				313	401	484	514	821	818	738
Honduras		157	255	229	323	468	737	1,174	1,494	2,073
Mexico	3,206	4,691	5,040	6,632	12,926	22,802	44,934	79,113	93,842	131,919
Nicaragua		109	129	153	239	398	776	819	700	967
Panama				302	371	595	1,266	2,115	2,339	3,622
Paraguay				306	410	521	813	1,823	2,469	2,999
Peru		845	1,339	1,808	2,518	4,217	7,115	10,818	9,653	14,474
Uruguay	399	720	1,448	1,273	1,867	2,295	2,676	3,382	3,489	4,740
Venezuela	227	381	1,199	1,528	3,360	6,978	12,457	18,345	19,690	24,044
LA	10,036	23,625	32,621	42,298	65,168	105,143	179,207	318,728	368,806	498,648
U.S.	105,460	200,269	259,284	313,760	489,323	688,841	1,038,520	1,421,213	1,958,373	2,703,005

SOURCE: See data appendix for sources and methodology.

Table 2-59
OXLAD PPP SERIES: LATIN AMERICA AND U.S. GDP PERCENTAGE INCREASE, 1940-2000

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1940-2000
Brazil	53%	93%	80%	135%	17%	30%	1811%
Mexico	95%	76%	97%	76%	19%	41%	1889%
LA	54%	61%	70%	78%	16%	35%	1079%
U.S.	56%	41%	51%	37%	38%	38%	761%

SOURCE: Calculated from table 2-58.

Table 2-60
OXLAD PPP SERIES: LATIN AMERICA AND U.S. GDP AVERAGE ANNUAL COMPOUND GROWTH, 1940-2000

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1940-2000
Brazil	4.4%	6.8%	6.1%	8.9%	1.6%	2.6%	5.0%
Mexico	6.9%	5.8%	7.0%	5.8%	1.7%	3.5%	5.1%
LA	4.4%	4.9%	5.5%	5.9%	1.5%	3.1%	4.20%
U.S.	4.5%	3.5%	4.2%	3.2%	3.3%	3.3%	3.7%

SOURCE: Calculated from table 2-58.

Table 2-61
OXLAD PPP SERIES: LATIN AMERICA GDP AS A PERCENT OF U.S. GDP, 1940-2000
(U.S. = 100)

	1940	1950	1960	1970	1980	1990	2000
Brazil	2.6%	2.5%	3.5%	4.1%	7.1%	6.0%	5.7%
Mexico	2.1%	2.6%	3.3%	4.3%	5.6%	4.8%	4.9%
LA	13.5%	13.3%	15.3%	17.3%	22.4%	18.8%	18.4%

SOURCE: Calculated from table 2-58.

Due to the higher GDP growth rate for Latin America for the entire period of 4.2% (compared to the U.S. at 3.7%), Latin America narrowed the GDP gap. Latin America increased from 13.5% of U.S. GDP in 1940 to 18.4% in 2000.

Brazil and Mexico, gained even more relative ground than the Latin American average. Brazil more than doubled its relative position from 2.6% of U.S. GDP to 5.7%, as did Mexico increasing from 2.1% to 4.9%.

Latin America 8 GDP PPP continued

To extend the analysis back to 1900, the following section uses the eight countries for which there is data for the entire 1900-2000 period: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Uruguay, and Venezuela (the PPP series does not have data for Peru). These eight countries represent the majority of the population and economic output of Latin America and are therefore good proxies.

In addition, a comparison of growth rates for these "Latin America 8" compared to the entire Latin America 20 countries, shows that they demonstrate nearly the same results as the entire group. For the 1940-2000 period, all of Latin America grew at a rate of 4.2% while the Latin America 8 grew at a rate of 4.37%. The Latin America 8 should therefore serve as a good proxy for all of Latin America.

Table 2-62
OXLAD PPP SERIES: LATIN AMERICA 8 AND U.S. GDP, 1900-2000
(Millions of 1970 U.S. dollars)

	1900	1910	1920	1930	1940	2000
Brazil	1,923	2,912	4,410	5,688	8,024	153,313
Mexico	3,206	4,387	4,691	5,040	6,632	131,919
LA	10,036	15,353	18,518	26,363	33,437	434,794
U.S.	105,460	155,396	200,269	259,284	313,760	2,703,005

SOURCE: See data appendix for sources and methodology.

Table 2-63
OXLAD PPP SERIES: LATIN AMERICA 8 AND U.S., GDP PERCENTAGE GROWTH, 1900-2000

	1900-1910	1910-20	1920-30	1930-40	1900-1940	1940-2000	1900-2000
Brazil	51%	51%	29%	41%	317%	1811%	7873%
Mexico	37%	7%	7%	32%	107%	1889%	4015%
LA	82%	29%	38%	30%	233%	1200%	4232%
U.S.	53%	20%	42%	27%	198%	761%	2463%

SOURCE: Calculated from table 2-62.

Table 2-64
OXLAD PPP SERIES: LATIN AMERICA 8 AND U.S. AVERAGE ANNUAL COMPOUND GROWTH, 1900-2000

	1900-1910	1910-20	1920-30	1930-40	1900-1940	1940-2000	1900-2000
Brazil	4.2%	4.2%	2.6%	3.5%	3.6%	5.0%	4.5%
Mexico	3.2%	0.7%	0.7%	2.8%	1.8%	5.1%	3.8%
LA	4.3%	1.9%	3.6%	2.4%	3.1%	4.4%	3.8%
U.S.	4.0%	2.6%	2.6%	1.9%	2.8%	3.7%	3.3%

SOURCE: Calculated from table 2-62.

Utilizing the Latin America 8, we see that Latin America also outpaced the U.S. in GDP growth during the 1900 through 1940 period, growing at 3.1% compared to the U.S. rate of 2.8%. During the 1940-2000 period, the growth incremental over the U.S. increases even more, as the Latin America 8's growth increases to 4.4% compared to the U.S. rate of 3.7%. For the entire century, Latin America (Latin America 8) grew at an annualized rate of 3.8% compared to the U.S. rate of 3.3%.

Table 2-65
OXLAD PPP SERIES: LATIN AMERICAN 8 GDP AS A PERCENT OF U.S. GDP, 1900-2000
(U.S. = 100)

	1900	1910	1920	1930	1940	2000
Brazil	1.8%	1.9%	2.2%	2.2%	2.6%	5.7%
Mexico	3.0%	2.8%	2.3%	1.9%	2.1%	4.9%
LA	9.5%	9.9%	9.2%	10.2%	10.7%	16.1%

SOURCE: Calculated from table 2-62.

Based on its stronger relative growth, Latin America narrowed the GDP gap over the 20th century. The Latin America 8 improved from 9.5% of U.S. GDP in 1900 to 10.7% in 1940, then jumped to 16.1% of U.S. GDP in 2000. Thus the GDP gap narrowed substantially.

GDP/C PPP ANALYSIS

The following tables (2-66, 2-67, and 2-68) present the GDP/C version of the PPP series, percentage growth rate, and average annual compound growth rates.

Table 2-66
OXLAD PPP SERIES: LATIN AMERICA AND U.S. GDP/C, 1900-2000
(Millions of 1970 U.S. dollars)

	1900	1920	1930	1940	1950	1960	1970	1980	1990	2000
Argentina	487	595	699	709	821	943	1208	1368	1084	1420
Bolivia				195	232	190	272	334	289	327
Brazil	107	161	169	195	236	341	464	830	816	901
Chile	278	349	509	493	576	679	850	966	1084	1631
Colombia	290	237	272	331	382	439	546	775	869	878
Costa Rica		567	568	497	373	474	658	888	883	966
Cuba		1084	958	785	873	880	860	1345	1788	1478
Dom. Rep				168	238	305	375	552	499	722
Ecuador	66	140	165	172	249	294	359	524	510	492
El Salvador		165	185	197	275	329	406	425	374	476
Guatemala		247	276	423	340	362	450	593	505	588
Haiti				111	118	134	121	164	126	90
Honduras		218	268	199	226	253	279	318	314	320
Mexico	236	332	305	338	501	633	886	1136	1128	1334
Nicaragua		170	190	184	225	282	424	300	181	191
Panama				487	464	561	885	1079	975	1266
Paraguay				276	293	298	353	579	585	545
Peru		175	237	271	316	421	529	625	448	564
Uruguay	416	486	837	646	849	904	980	1162	1122	1419
Venezuela	93	135	384	412	676	949	1212	1221	1010	995
LA	168	279	317	342	420	515	665	909	871	983
U.S.	1386	1881	2107	2366	3214	3812	5065	6240	7664	9512

SOURCE: See data appendix for sources and methodology.

Table 2-67
OXLAD PPP SERIES: LATIN AMERICA AND U.S. GDP/C PERCENTAGE GROWTH RATE, 1940-2000

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1940-2000
Brazil	21%	45%	36%	79%	-2%	10%	362%
Mexico	49%	26%	40%	28%	-1%	18%	295%
LA	23%	23%	29%	37%	-4%	13%	187%
U.S.	36%	19%	33%	23%	23%	24%	302%

SOURCE: Calculated from table 2-66.

Table 2-68
OXLAD PPP SERIES: LATIN AMERICA AND U.S. GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1940-2000

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1940-2000
Brazil	1.9%	3.8%	3.1%	6.0%	-0.2%	1.0%	2.6%
Mexico	4.0%	2.4%	3.4%	2.5%	-0.1%	1.7%	2.3%
LA	2.1%	2.1%	2.6%	3.2%	-0.4%	1.2%	1.78%
U.S.	3.1%	1.7%	2.9%	2.1%	2.1%	2.2%	2.35%

SOURCE: Calculated from table 2-67.

verall Latin America's GDP/C growth averaged 1.8% from 1940 through 2000. Therefore, for the past 60 years Latin America has achieved a decent absolute improvement in GDP/C, improving at 1.8%, meaning that average GDP/C in 2000 is more than double its 1940 level.

However, in terms of relative position to the United States, Latin America has not kept up the pace of the U.S., which has grown at an average rate of 2.35%. In spite of Latin America's overall underperformance, Mexico nearly matches the U.S. at 2.32%, while Brazil outperforms the U.S. growing at 2.6%.

Table 2-69
OXLAD PPP SERIES: LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C, 1940-2000
(U.S. = 100)

	1940	1950	1960	1970	1980	1990	2000
Brazil	8.2%	7.3%	8.9%	9.2%	13.3%	10.6%	9.5%
Mexico	14.3%	15.6%	16.6%	17.5%	18.2%	14.7%	14.0%
LA	14.5%	13.1%	13.5%	13.1%	14.6%	11.4%	10.3%
U.S.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-67.

The GDP/C gap between Latin America and the U.S. widens over the 1940 to 2000 period. Although Latin America maintains the same general relative position from 1940 through 1980, at 14.5% and 14.6% of U.S. GDP/C, it declines during the 1980 through 2000 period to only 10.3% of U.S. GDP/C.

In spite of the overall negative trend for Latin America, Mexico only loses slight relative ground, declining from 14.3% of U.S. GDP/C in 1940 to 14% in 2000. The other giant of Latin America, Brazil, actually improved its relative position, increasing its GDP/C from 8.2% of U.S.GDP/C to 9.5%.

LA 8 GDP/C PPP

To extend the analysis back to 1900, the following section will use the eight countries for which there is data for the entire 1900-2000 period: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Uruguay, and Venezuela. These eight countries represent the majority of the population and economic output of Latin America. In addition, these "Latin America 8" grew at almost the same rate as all of Latin America during the 1940-2000 period: the Latin America 8 increased at a rate of 1.9% while all of Latin America increased at a rate of 1.8%. The Latin America 8 should therefore serve as good proxies for all of Latin America.

Table 2-70
OXLAD PPP SERIES: LATIN AMERICA 8 AND U.S. GDP/C, 1900-2000
(U.S. 1970 dollars)

	1900	1910	1920	1930	1940	2000
Brazil	107	131	161	169	195	901
Mexico	236	289	332	305	338	1334
LA	210	267	280	326	344	1077
U.S.	1,386	1,682	1,881	2,107	2,336	9,512

SOURCE: See data appendix for sources and methodology.

Table 2-71
OXLAD PPP SERIES: LATIN AMERICA 8 AND U.S. GDP/C PERCENTAGE GROWTH, 1900-2000

	1900-1910	1910-20	1920-30	1930-40	1900-1940	1940-2000	1900-2000
Brazil	23%	23%	5%	15%	45%	362%	743%
Mexico	23%	15%	-8%	11%	30%	295%	466%
LA	27%	5%	17%	5%	39%	213%	413%
U.S.	21%	12%	12%	12%	41%	302%	586%

SOURCE: Calculated from table 2-70.

Table 2-72
OXLAD PPP SERIES: LATIN AMERICA 8 AND U.S. GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1900-2000

	1900-1910	1910-20	1920-30	1930-40	1900-1940	1940-2000	1900-2000
Brazil	2.1%	2.1%	.5%	1.4%	1.5%	2.6%	2.2%
Mexico	2.1%	1.4%	-.8%	1.0%	.9%	2.3%	1.7%
LA	2.4%	0.5%	1.6%	.5%	1.2%	1.9%	1.6%
U.S.	2.0%	1.1%	1.1%	1.2%	1.3%	2.3%	1.9%

SOURCE: Calculated from table 2-70.

From 1940 through 2000, Latin America (as measured by the Latin America 8) grew at nearly the same pace as the United States, growing at 1.2% compared to the U.S. growth rate of 1.3%. However, in the 1940-2000 period the Latin America 8 significantly trail the U.S., growing at a rate of 1.9% compared to the U.S. rate of 2.3% (as did the full Latin America 20 growing at only 1.8%). For the entire century this translates into a growth rate of 1.6% for Latin America compared to 1.9% for the United States.

Notably Brazil outperforms the U.S. for the 1900-1940 period, the 1940-2000 period, and therefore the entire century, growing at an annualized rate of 2.2% compared to the U.S. rate of 1.9% for the entire century.

Table 2-73
OXLAD PPP SERIES: LATIN AMERICA 8 GDP/C AS A PERCENT OF U.S. GDP/C, 1900-2000
(U.S. = 100)

	1900	1910	1920	1930	1940	2000
Brazil	7.7%	7.8%	8.6%	8%	8.2%	9.5%
Mexico	17.0%	17.2%	17.6%	14.5%	14.3%	14.0%
LA	15.2%	15.9%	14.9%	15.5%	14.5%	11.3%
U.S.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-70.

Due to Latin America's slightly lower growth rate in the 1900 through 1940 period, it lost relative ground to the U.S. falling from 15.2% of U.S. GDP/C in 1900 to 14.5% in 1940. During the 1940 through 2000 period, the GDP/C gap widens to 11.3% of U.S. GDP/C in 2000.

As mentioned previously, Brazil stands out in its performance, outpacing the U.S. outperforms the United States. Brazil therefore narrows the GDP/C gap, improving from 7.7% of U.S.GDP/C in 1900 to 9.5% in 2000.

SUMMARY /CONCLUSION

Brief Comparison and Contrast between the DER and PPP series

The only difference between the two series analyzed in this section (OXLAD DER and OXLAD PPP) is the choice of nominal dollar exchange rates for the DER series and purchasing power parity rates for the PPP series. What difference does a nominal exchange rate selection or a PPP rate selection make?

The biggest difference between the two series is the overall size of GDP and GDP/C: the PPP series is substantially higher than the nominal exchange rate series. The following table shows the difference for the two GDP series, utilizing the Latin America 8 series for PPP, and the Latin America 8 from DER. The original Latin America 9 DER has been modified to 8 countries for this comparison.

Table 2-74
LATIN AMERICA 8 GDP DER AND PPP, 1900-2000
(Millions 1970 U.S. dollars)

	1900	1920	1930	1940	1950	1960	1970	1980	1990	2000
LA DER	7,784	14,633	21,019	26,582	42,094	70,063	121,790	220,984	254,407	347,815
LA PPP	10,036	18,518	26,363	33,437	53,099	87,835	152,958	275,195	317,807	434,794

SOURCE: See data appendix for sources and methodology.

As table 2-74 shows, the resulting difference is large. The following table calculates the ratio of PPP GDP to DER GDP, revealing that on average PPP boosts GDP 25-29% over nominal GDP in this series.

Table 2-75
GDP PPP AS A PERCENT OF GDP DER, 1940-2005

1900	1920	1930	1940	1950	1960	1970	1980	1990	2000
128.9%	126.6%	125.4%	125.8%	126.1%	125.4%	125.6%	124.5%	124.9%	125.0%

SOURCE: Calculated from table 2-74.

Therefore the biggest effect that choice of DER or PPP rates has is upon the absolute size of Latin America's GDP and GDP/C. Since these numbers are used in the comparison to the United States, the secondary effect of this difference is the size of the economic gap: for the PPP series the gap is smaller, for the DER series the gap is larger. The following tables reveal the differences in relative gaps as compared to the United States for GDP.

Table 2-76
LATIN AMERICA GDP AS A PERCENT OF U.S. GDP, DER AND PPP, 1940-2005
(U.S. = 100)

	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
LA DER	7.4%	7.7%	7.3%	8.1%	8.5%	8.6%	10.2%	11.7%	15.5%	13.0%	12.9%
LA PPP	9.5%	9.9%	9.2%	10.2%	10.7%	10.9%	12.8%	14.7%	19.4%	16.2%	16.1%

SOURCE: Calculated from table 2-74.

As the above tables reveal, the difference in gaps is substantial. For GDP, Latin America either starts at 7.4% of U.S. GDP and increases to 12.9% (DER), or starts at 9.5% and increases to 16.1% (PPP).

The good news is that if our primary concern is the overall trend of economic development, we don't have to choose sides. Both the DER and PPP series shows the same economic development trends.

Although there is a large difference in the absolute numbers produced by the DER and PPP series, their corresponding percentage growth rates are nearly identical, though with slight differences as shown in the GDP growth rate table below. For the DER series, the overall growth rate is 4.19%, while for the PPP series the overall growth rate is 4.2%.

TABLE 2-77
LATIN AMERICA AND U.S. GDP GROWTH RATES 1940-2000
DER AND PPP

	1940-2000
Latin America (20) DER	4.19%
Latin America (20) PPP	4.20%
U.S.	3.7%

The individual country growth rates are not affected by the conversion from DER to PPP. The DER and PPP country growth rates are identical. However, when it comes to the aggregate totals for Latin America, there can be minor changes to growth rates as the table above reveals. This occurs because the PPP "boost" given to some countries is greater than other countries. In any given year, if countries with a higher boost make up a greater percentage of total GDP, the percent increase will be higher. Likewise, if in a given year a larger proportion of the GDP is made up by countries given a lower "boost" the percent increase will be lower. Yet in this series the effects of this distortion are minimal.

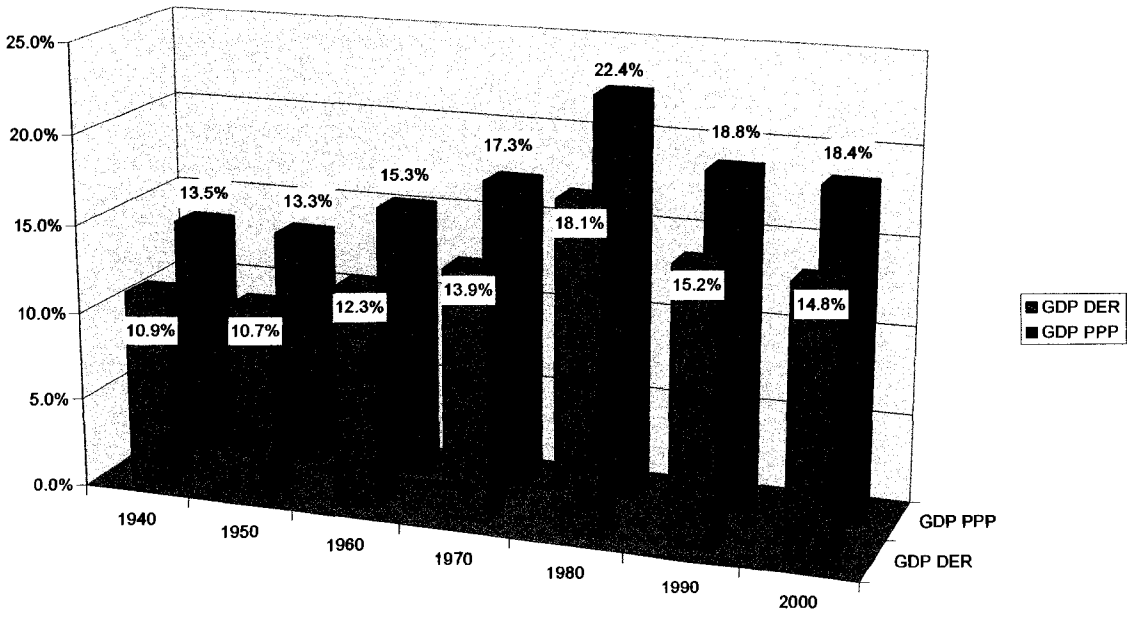
GDP Summary/Conclusion

For the full Latin America series (1940-2000), both the DER and PPP series produced nearly identical results. Latin America strongly outpaced the U.S. in GDP growth, growing at 4.19% (DER) or 4.20% (PPP) compared to the U.S. rate of growth of 3.7%.

This greater growth (in both the DER and the PPP series) led to a decrease in the GDP gap. The following chart (chart 2-7) depicts the relative performance of Latin America's GDP compared to the U.S. for both the DER and PPP series. Both data sets depict the same general trend of a relative increase in Latin America's relative GDP position. However, the actual percentage difference is substantial with the PPP series typically 2.6-4.3 points higher than the DER series.

Chart 2-7

LATIN AMERICAN GDP AS A PERCENT OF U.S. GDP FOR DER AND PPP SERIES



SOURCE: Tables 2-45 and 2-61.

For the period before 1940, the trend is also one of a relative gain as measured by the Latin America 9 (DER) and Latin America 8 (PPP) series. The following table shows that both series outperformed the U.S. in the 1900 through 1940 period, growing at 3.2% for the DER series and 3.1% for the PPP series, compared to the U.S. growth rate of only 2.8%.

From 1940 through 2000, these proxy series performed similar to the full series, only with a slightly higher growth rate of 4.3% for the DER and 4.4% for the PPP series compared to the full Latin America DER of 4.19% and PPP of 4.2%. For the entire century, Latin America therefore outperformed the U.S. growing at a rate of 3.9% (DER) 3.8% (PPP), compared to the U.S. rate of 3.3% for the 1900-2000 series.

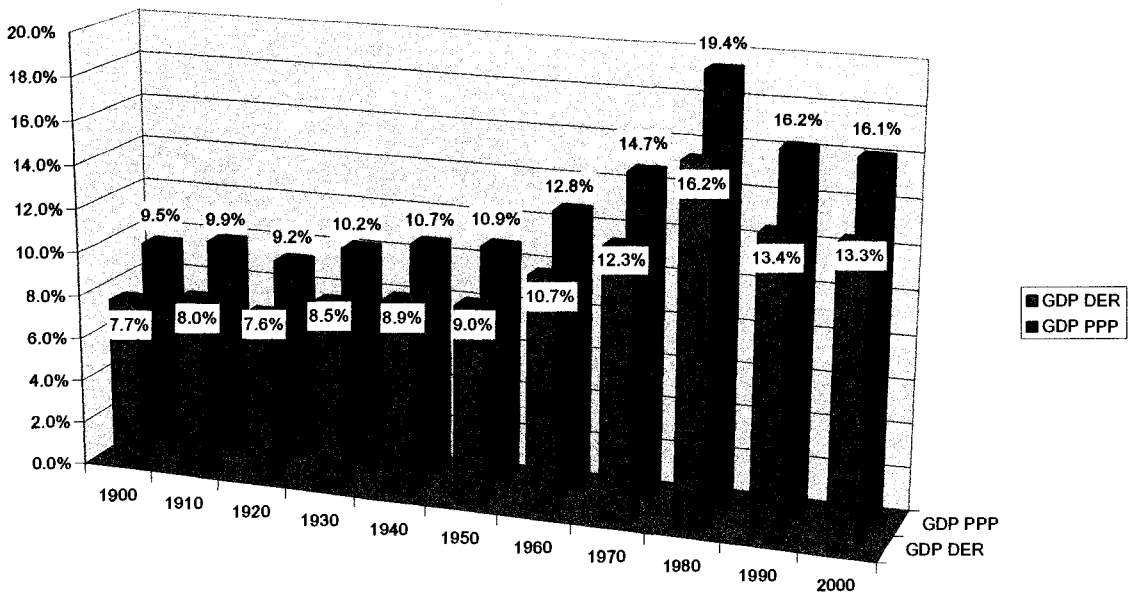
Table 2-78
LATIN AMERICA AND U.S. GDP GROWTH, DER AND PPP SERIES, 1900-2000

	1900-1940	1940-2000	1900-2000	
Latin America (9) DER	3.2%	4.3%	3.9%	
Latin America (8) PPP	3.1%	4.4%	3.8%	
U.S.	2.8%	3.7%	3.3%	

SOURCE: Tables 2-49 and 2-65.

Based on this stronger relative growth, both the DER and PPP series posted a strong relative gain on the U.S. GDP demonstrated in the following chart (chart 2-8). Again, while the overall trend is the same for both series, there is a substantial difference in the relative percentages, with the PPP about 2 percentage points higher.

Chart 2-8
LATIN AMERICAN GDP AS A PERCENT OF U.S. GDP (LA-9 and LA-8)
1900-2000



SOURCE: Tables 2-49 and 2-65.

GDP/C Summary/Conclusion

For the full Latin American series, both the DER and PPP series underperformed the U.S. From 1940 through 2000, the DER series averaged 1.8% while the PPP series averaged 1.78%, compared to the U.S. rate of 2.3%

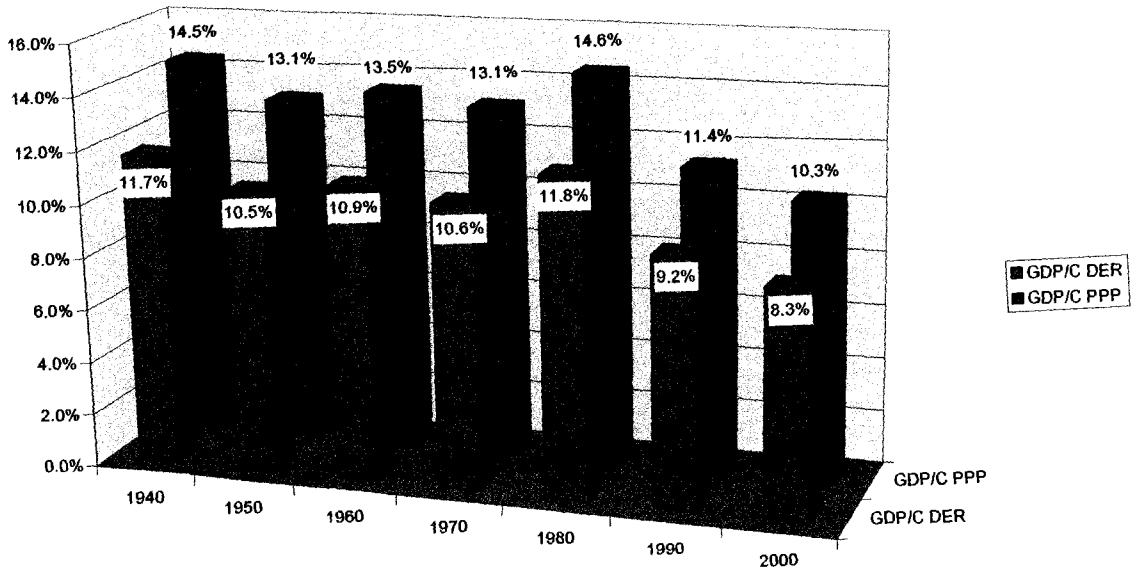
Table 2-79
LATIN AMERICA AND U.S. GDP/C GROWTH RATES 1940-2000
DER AND PPP

	1940-2000
Latin America (20) DER	1.8%
Latin America (20) PPP	1.78%
U.S.	2.3%

SOURCE: Calculated from tables 2-53 and 2-69.

Therefore, the GDP/C gap widened between Latin America and the U.S. in the 1940 through 2000 period as the following chart reveals. Again, the primary difference between the two series is the relative percentage, with the PPP series about 2-3 percentage points higher than the DER series.

Chart 2-9
LATIN AMERICAN GDP/C (DER and PPP) AS A PERCENT OF U.S. GDP/C
1940-2000



SOURCE: Tables 2-53 and 2-69.

From 1900 through 1940, the Latin America 9 (DER) and Latin America 8 (PPP) also show the same general trend, that of nearly equal growth to the U.S. in GDP/C, though falling just short. For 1900-1940 the DER series averaged 1.33%, the PPP series 1.2%, and the U.S. 1.35%.

For the 1940-2000 series, both the DER and PPP underperformed the U.S., both growing at 1.9% (higher than the full DER series at 1.8% and the full PPP series at 1.78%) compared to the rate of U.S. 2.3%. For the entire century, Latin America slightly underperforms the U.S. in GDP/C growth, averaging 1.7% (DER) or 1.6% (PPP) to the U.S. rate of growth of 1.9%

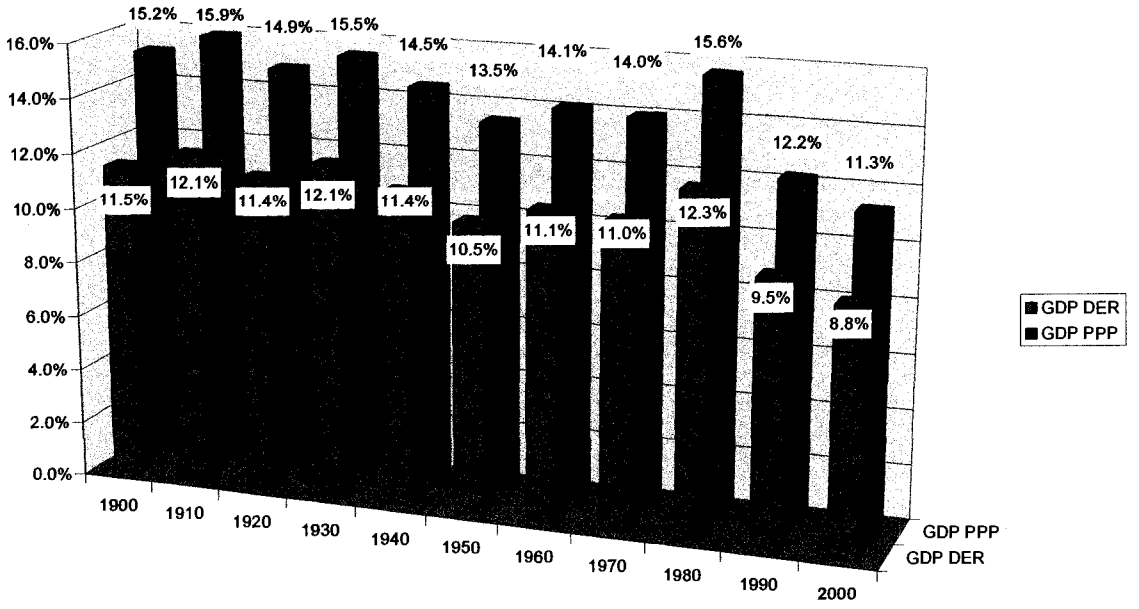
Table 2-80
LATIN AMERICA AND U.S. GDP/C GROWTH, DER AND PPP SERIES, 1900-2000

	1900-1940	1940-2000	1900-2000	
Latin America (9) DER	1.33%	1.9%	1.7%	
Latin America (8) PPP	1.2%	1.9%	1.6%	
U.S.	1.35%	2.3%	1.9%	

SOURCE: Tables 2-57 and 2-72.

The following graph depicts the relative performance of Latin America and the U.S. for the 1900 through 2000 period. Overall, the entire period is one of a widening gap relative to the U.S. However, for both series there is little or no widening gap for the 1900-1980 period-the DER series average is typically 11-12% of U.S. GDP/C for this 80 year period, while the PPP series is typically 14-15%. The GDP/C widening gap is therefore only a recent phenomenon, one that began with the "lost decade" of the 1980s.

Chart 2-10
LATIN AMERICAN GDP/C AS A PERCENT OF U.S. GDP/C (LA-9 and LA-8)
1900-2000



SOURCE: Tables 2-57 and 2-72.

Section five: ANDRE HOFMAN SERIES

GDP ANALYSIS

The following section utilizes data from Andre Hofman's work *The Economic Development of Latin America in the Twentieth Century.*[1] Hofman's work provides data for six Latin American countries (Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela) from 1900-1994. Since the publication of his work in 2000, Andre Hofman has been working on updates to his data series and has generously provided me with the most recent updates. The analysis here is based on the recent updates he has provided me which include additional countries (Bolivia, Ecuador, and Peru) and data through the year 2000.

The following tables present the GDP data, percentage growth, and average annual compound growth for the series. Details on the sources and methodology are provided in the data appendix.

[1] Andre Hofman, *The Economic Development of Latin America in the Twentieth Century* (Northampton, MA: Edward Elgar, 2000.

Table 2-81
HOFMAN SERIES: U.S. AND LATIN AMERICAN GDP
(U.S. 1980 dollars)

	1900	1930	1940	1950	1960	1970	1980	1990	2000
Argentina	7,076	26,545	32,223	46,768	62,687	102,306	141,750	126,383	189,106
Bolivia	697	1,535	1,998	2,512	2,610	4,455	6,533	6,634	9,583
Brazil	5,292	18,580	30,597	54,075	103,823	177,098	408,758	477,451	578,003
Chile	3,299	7,823	9,449	13,251	18,660	28,234	36,247	49,120	91,319
Colombia	2,037	7,210	10,746	15,427	24,284	39,981	68,361	95,599	124,582
Ecuador	374	1,400	1,849	3,471	5,704	8,841	20,745	25,510	30,362
Mexico	13,955	20,890	28,385	50,640	89,334	176,044	333,588	399,002	561,380
Peru	1,557	5,671	7,657	10,960	19,052	31,890	46,174	41,072	60,942
Venez.	707	3,847	5,180	12,648	26,269	47,002	70,416	74,934	92,148
Lat Am	34,994	93,501	128,081	209,752	352,425	615,851	1,132,571	1,295,707	1,737,425
US	206,992	508,914	615,837	964,366	1,355,705	2,041,381	2,802,226	3,843,908	5,311,854

SOURCE: See data appendix for sources and methodology.

TABLE 2-82
HOFMAN SERIES: LATIN AMERICA AND U.S. GDPPERCENTAGE GROWTH, 1900-2000

	1900-1910	1930-40	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1900-50	1950-2000	1900-2000
Argentina	102%	21%	45%	34.0%	63.2%	38.6%	10.8%	49.6%	560.9%	304.4%	2572.4%
Bolivia	30%	30%	26%	4%	71%	47%	2%	44%	261%	281%	1276%
Brazil	57%	65%	77%	92%	71%	131%	17%	21%	922%	969%	10822%
Chile	43%	21%	40%	41%	51%	28%	36%	86%	302%	589%	2668%
Colombia	51%	49%	44%	57%	65%	71%	40%	30%	657%	708%	6015%
Ecuador	61%	32%	88%	64%	55%	135%	23%	19%	828%	775%	8021%
Mexico	37%	36%	78%	76%	97%	89%	20%	41%	263%	1009%	3923%
Peru	62%	35%	43%	74%	67%	45%	-11%	48%	604%	456%	3814%
Ven.	19%	35%	144%	108%	79%	50%	6%	23%	1690%	629%	12941%
Lat Am	55%	37%	64%	68%	75%	84%	14%	34%	499%	728%	4865%
US	47%	21%	57%	41%	51%	37%	37%	38%	366%	451%	2466%

SOURCE: Calculated from table 2-81

Table 2-83
HOFMAN SERIES: LATIN AMERICA AND U.S. AVERAGE ANNUAL COMPOUND GROWTH RATES, 1900-2000

	1900-1910	1930-40	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1900-50	1950-2000	1900-2000
Argentina	7.3%	2.0%	3.8%	3.0%	5.0%	3.3%	-1.1%	4.1%	3.8%	2.8%	3.3%
Bolivia	2.7%	2.7%	2.3%	0.4%	5.5%	3.9%	0.2%	3.7%	2.6%	2.7%	2.7%
Brazil	4.6%	5.1%	5.9%	6.7%	5.5%	8.7%	1.6%	1.9%	4.8%	4.9%	4.8%
Chile	3.7%	1.9%	3.4%	3.5%	4.2%	2.5%	3.1%	6.4%	2.8%	3.9%	3.4%
Colombia	4.2%	4.1%	3.7%	4.6%	5.1%	5.5%	3.4%	2.7%	4.1%	4.3%	4.2%
Ecuador	4.9%	2.8%	6.5%	5.1%	4.5%	8.9%	2.1%	1.8%	4.6%	4.4%	4.5%
Mexico	3.2%	3.1%	6.0%	5.8%	7.0%	6.6%	1.8%	3.5%	2.6%	4.9%	3.8%
Peru	5.0%	3.0%	3.7%	5.7%	5.3%	3.8%	-1.2%	4.0%	4.0%	3.5%	3.7%
Ven.	1.7%	3.0%	9.3%	7.6%	6.0%	4.1%	0.6%	2.1%	5.9%	4.1%	5.0%
Lat Am	4.5%	3.2%	5.1%	5.3%	5.7%	6.3%	1.4%	3.0%	3.6%	4.3%	4.0%
US	4.0%	1.9%	4.6%	3.5%	4.2%	3.2%	3.2%	3.3%	3.1%	3.5%	3.3%

SOURCE: Calculated from table 2-81.

As the above tables show, for the entire 1900-2000 period, Latin America (as measured by these 9 countries) outpaced the U.S. in GDP growth. Latin America grew at an average rate of 4%, compared to the U.S. rate of growth of 3.3%. Both Latin America and the U.S. improved their growth rates in general as the century progressed: Latin America improved from 3.6% in the 1900-1950 period, to 4.3% in the 1950-2000 period, while the U.S. increased from 3.1% in the 1900-1950 period, to 3.5% in the 1950-2000 period.

Table 2-84
HOFMAN SERIES: LATIN AMERICA GDP AS A PERCENT OF U.S. GDP, 1900-2000
(U.S. = 100)

	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
Argentina	3.4%	4.7%	4.3%	5.2%	5.2%	4.8%	4.6%	5.0%	5.1%	3.3%	3.6%
Bolivia	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%
Brazil	2.6%	2.7%	3.1%	3.7%	5.0%	5.6%	7.7%	8.7%	14.6%	12.4%	10.9%
Chile	1.6%	1.6%	1.3%	1.5%	1.5%	1.4%	1.4%	1.4%	1.3%	1.3%	1.7%
Colombia	1.0%	1.0%	1.2%	1.4%	1.7%	1.6%	1.8%	2.0%	2.4%	2.5%	2.3%
Ecuador	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%	0.7%	0.7%	0.6%
Mexico	6.7%	6.3%	5.2%	4.1%	4.6%	5.3%	6.6%	8.6%	11.9%	10.4%	10.6%
Peru	0.8%	0.8%	0.9%	1.1%	1.2%	1.1%	1.4%	1.6%	1.6%	1.1%	1.1%
Ven.	0.3%	0.3%	0.3%	0.8%	0.8%	1.3%	1.9%	2.3%	2.5%	1.9%	1.7%
Lat Am	16.9%	17.8%	16.8%	18.4%	20.8%	21.8%	26.0%	30.2%	40.4%	33.7%	32.7%

SOURCE: Calculated from table 2-81.

Based on the stronger relative growth, Latin America narrowed the GDP gap with the United States. As the table above shows, Latin America nearly doubled its relative GDP position, increasing from 17% of U.S. GDP in 1900 to 33% of U.S. GDP in 2000.

GDP/C ANALYSIS

The GDP/C series continues the analysis of the Hofman series, converting it to GDP/C using his population figures. The following tables present the GDP/C data, percentage growth, and average annual compound growth for the series.

Table 2-85
HOFMAN SERIES: LATIN AMERICA AND U.S.GDP/C, 1900-2000
(U.S. 1980 dollars)

	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
Argentina	1,508	2,089	1,898	2,231	2,274	2,727	3,041	4,269	5,042	3,883	5,107
Bolivia	436	516	611	709	822	926	779	1,058	1,220	995	1,137
Brazil	294	374	449	554	737	1,012	1,430	1,848	3,370	3,216	3,386
Chile	1,109	1,407	1,383	1,790	1,855	2,179	2,453	2,973	3,252	3,750	6,003
Colombia	510	628	729	911	1,161	1,227	1,441	1,772	2,403	2,734	2,944
Ecuador	379	476	580	679	707	1,025	1,285	1,481	2,606	2,485	2,401
Mexico	1,026	1,273	1,371	1,216	1,392	1,826	2,418	3,479	4,937	4,794	5,677
Peru	411	600	756	1,055	1,210	1,436	1,918	2,417	2,665	1,888	2,349
Venez.	278	300	397	1,166	1,369	2,483	3,466	4,384	4,666	3,842	3,812
Lat. Am.	671	872	915	1,065	1,213	1,544	1,959	2,603	3,747	3,497	3,991
U.S.	2,710	3,288	3,678	4,115	4,643	6,333	7,504	9,955	12,305	15,368	18,814

SOURCE: See data appendix for sources and methodology.

Table 2-86
HOFMAN SERIES: LATIN AMERICA AND U.S.GDP/C PERCENTAGE GROWTH, 1900-2000

	1900-1910	1920-30	1930-40	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1900-50	1950-2000	1900-2000
Argentina	39%	18%	2%	20%	12%	40%	18%	-23%	32%	81%	87%	239%
Bolivia	18%	16%	16%	13%	-16%	36%	15%	-18%	14%	112%	23%	161%
Brazil	27%	23%	33%	37%	41%	29%	82%	-5%	5%	244%	235%	1051%
Chile	27%	29%	4%	17%	13%	21%	9%	15%	60%	96%	176%	441%
Colombia	23%	25%	27%	6%	17%	23%	36%	14%	8%	141%	140%	478%
Ecuador	26%	17%	4%	45%	25%	15%	76%	-5%	-3%	170%	134%	534%
Mexico	24%	-11%	14%	31%	32%	44%	42%	-3%	18%	78%	211%	454%
Peru	46%	39%	15%	19%	34%	26%	10%	-29%	24%	250%	64%	472%
Ven.	8%	194%	17%	81%	40%	26%	6%	-18%	-1%	793%	54%	1272%
Lat Am	30%	16%	14%	27%	27%	33%	44%	-7%	14%	130%	158%	495%
US	21%	12%	13%	36%	18%	33%	24%	25%	22%	134%	197%	594%

SOURCE: Calculated from table 2-85.

Table 2-87
HOFMAN SERIES: LATIN AMERICA AND U.S. GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1900-2000

	1900-1910	1930-40	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	1900-50	1950-2000	1900-2000
Argentina	3.3%	0.2%	1.8%	1.1%	3.5%	1.7%	-2.6%	2.8%	1.2%	1.3%	1.2%
Bolivia	1.7%	1.5%	1.2%	-1.7%	3.1%	1.4%	-2.0%	1.3%	1.5%	0.4%	1.0%
Brazil	2.4%	2.9%	3.2%	3.5%	2.6%	6.2%	-0.5%	0.5%	2.5%	2.4%	2.5%
Chile	2.4%	0.4%	1.6%	1.2%	1.9%	0.9%	1.4%	4.8%	1.4%	2.0%	1.7%
Colombia	2.1%	2.5%	0.6%	1.6%	2.1%	3.1%	1.3%	0.7%	1.8%	1.8%	1.8%
Ecuador	2.3%	0.4%	3.8%	2.3%	1.4%	5.8%	-0.5%	-.3%	2.0%	1.7%	1.9%
Mexico	2.2%	1.4%	2.8%	2.8%	3.7%	3.6%	-0.3%	1.7%	1.2%	2.3%	1.7%
Peru	3.9%	1.4%	1.7%	2.9%	2.3%	1.0%	-3.4%	2.2%	2.5%	1.0%	1.8%
Venez.	0.8%	1.6%	6.1%	3.4%	2.4%	0.6%	-1.9%	-.1%	4.5%	0.9%	2.7%
Lat Am	2.7%	1.3%	2.4%	2.4%	2.9%	3.7%	-0.7%	1.3%	1.7%	1.9%	1.8%
US	2.0%	1.2%	3.2%	1.7%	2.9%	2.1%	2.2%	2.0%	1.7%	2.2%	2.0%

SOURCE: Calculated from table 2-85.

For the entire 1900-2000 period, Latin America slightly underperforms the U.S. in GDP/C growth, growing at 1.8% compared to the U.S. rate of 2.0%. However, from 1900 through1950, Latin America matches the U.S. GDP/C growth rate of 1.7%. It is only during the 1950-2000 period that Latin America falls behind in terms of GDP/C growth, averaging just 1.9% compared to the U.S. 2.2%. The relative decline of the 1950 through 2000 period is actually only a product of the 1980 through 2000 period. Prior to 1980, Latin America matches or exceeds the U.S. GDP/C growth rate for each decade (the 1950s, 60s, and 70s). Therefore, Latin America does slightly fall behind in GDP/C terms, but it is really only the last two decades that produce this widening gap.

Table 2-88
HOFMAN SERIES: LATIN AMERICA AS A PERCENT OF U.S.GDP/C, 1900-2000
(U.S. = 100)

	1900	1920	1930	1940	1950	1960	1970	1980	1990	2000
Argentina	55.6%	51.6%	54.2%	49.0%	43.1%	40.5%	42.9%	41.0%	25.3%	27.1%
Bolivia	16.1%	16.6%	17.2%	17.7%	14.6%	10.4%	10.6%	9.9%	6.5%	6.0%
Brazil	10.9%	12.2%	13.5%	15.9%	16.0%	19.1%	18.6%	27.4%	20.9%	18.0%
Chile	40.9%	37.6%	43.5%	40.0%	34.4%	32.7%	29.9%	26.4%	24.4%	31.9%
Colombia	18.8%	19.8%	22.1%	25.0%	19.4%	19.2%	17.8%	19.5%	17.8%	15.6%
Ecuador	14.0%	15.8%	16.5%	15.2%	16.2%	17.1%	14.9%	21.2%	16.2%	12.8%
Mexico	37.9%	37.3%	29.6%	30.0%	28.8%	32.2%	34.9%	40.1%	31.2%	30.2%
Peru	15.2%	20.6%	25.6%	26.1%	22.7%	25.6%	24.3%	21.7%	12.3%	12.5%
Ven.	10.3%	10.8%	28.3%	29.5%	39.2%	46.2%	44.0%	37.9%	25.0%	20.3%
Lat Am	24.8%	24.9%	25.9%	26.1%	24.4%	26.1%	26.2%	30.4%	22.8%	21.2%
US	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

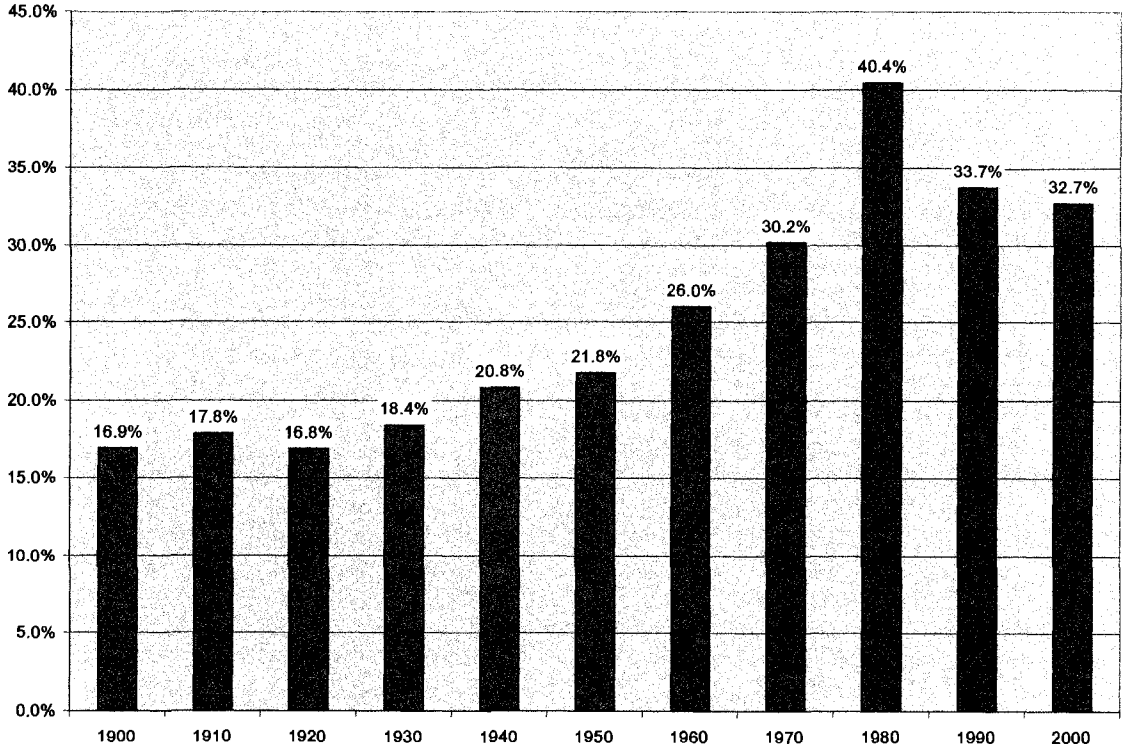
From 1900 through 1980, the GDP/C gap narrows between Latin America and the United States. Latin America improves from 24.8% of U.S. GDP/C in 1900 to 30.4% in 1980. 24.8% of U.S. GDP/C in 1900 to 21.2% in 2000. However, as previously mentioned, during the last two decades of the century, Latin America faces a sharp decline, ending in 2000 at 21.2% of U.S. GDP/C. Therefore, for the entire century the GDP/C gap widens between Latin America and the United States.

SUMMARY/CONCLUSION

GDP

The Hofman series shows a clear narrowing gap in terms of GDP over the last century, with Latin America strongly outpacing the U.S. Latin America grows at 4% compared to the U.S rate of growth of 3.3%, leading to a decrease in the relative gap. The following chart shows the relative position of Latin America compared to the U.S. over the 20th century.

Chart 2-11
HOFMAN SERIES: LATIN AMERICA GDP AS A PERCENT OF U.S. GDP (U.S. = 100)

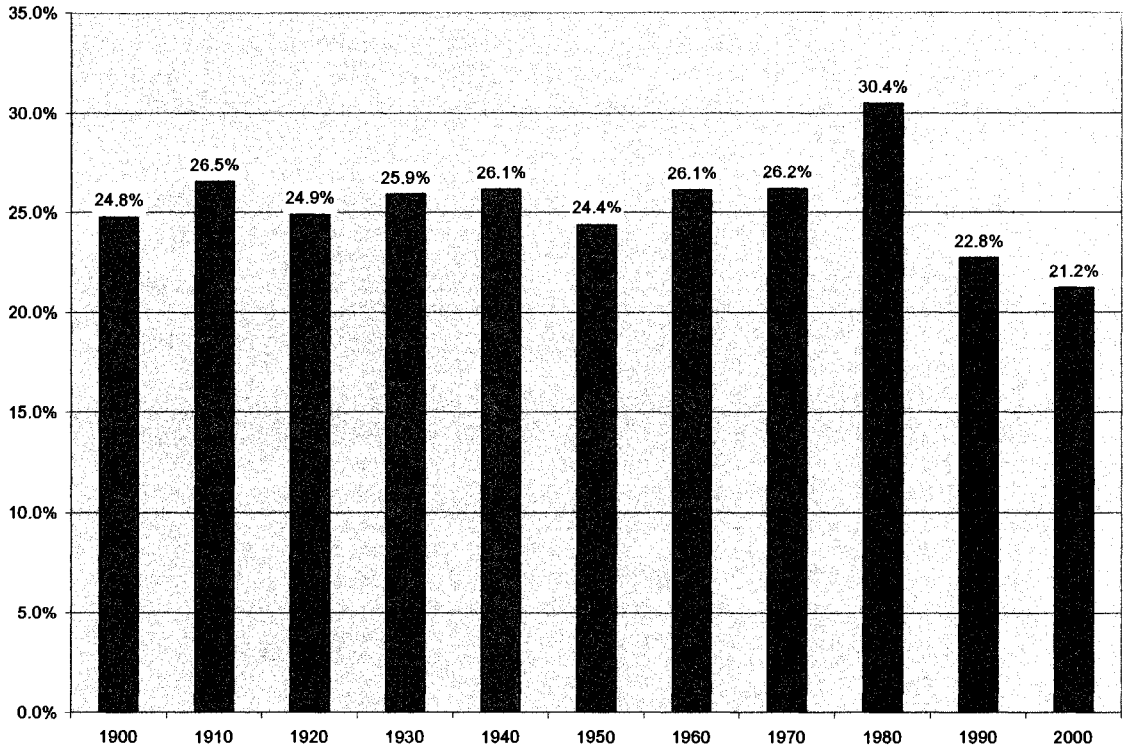


SOURCE: Table 2-84.

GDP/C

In GDP/C terms, the Latin America underperforms the U.S. growing at 1.8% compared to the U.S. rate of 2.0%. Therefore, the gap between Latin America and the U.S. widens slightly over the 1900-2000. The following graph summarizes the relative trend of Latin American and U.S. GDP/C performance for the century.

Chart 2-12
LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C



SOURCE: Table 2-88.

Section 6: UN Series

GDP ANALYSIS

The following series is derived from the United Nation's statistical sources. Details on the sources and methodology are provided in the data appendix. The series is in constant 1990 dollars, utilizing dollar exchange rates.

Although the series only begins in 1970, it does include most of the world's countries. This series therefore will allow us to analyze the performance of Latin America not only in relation to the U.S., but also other world regions. The global comparison includes 95 countries, representing over 90% of the world population for the 1970 through 2005 period. For practical reasons, the tables only present aggregated data for the world regions. The data appendix provides details on the countries included in each world region.

Table 2-89
UN SERIES: WORLD REGIONAL GDP SERIES, 1970-2005
(Millions of 1990 U.S. dollars)

	1970	1980	1985	1990	1995	2000	2005
North America	**3,333,891**	**4,626,243**	**5,410,887**	**6,339,935**	**7,140,789**	**8,745,558**	**9,854,594**
United States	3,037,076	4,184,681	4,905,249	5,757,200	6,506,166	7,968,520	8,973,072
Latin America	**547,843**	**971,709**	**1,014,264**	**1,101,234**	**1,292,865**	**1,507,127**	**1,697,849**
Argentina	122,812	158,046	143,041	141,353	188,226	213,758	235,887
Bolivia	3,269	4,793	4,351	4,868	5,950	7,047	8,175
Brazil	166,253	375,219	399,608	438,256	509,336	568,704	633,727
Chile	19,538	25,121	24,196	33,507	50,820	62,293	76,614
Colombia	19,967	34,140	38,153	47,743	59,249	62,016	73,536
Costa Rica	3,302	5,716	5,797	7,254	9,466	12,041	14,718
Cuba	13,449	20,570	30,995	30,683	21,282	26,635	34,173
Dominican Republic	2,799	5,570	6,125	7,074	9,015	13,266	15,696
Ecuador	3,898	9,147	10,165	11,248	13,298	13,937	17,919
El Salvador	3,497	4,807	4,376	4,801	6,479	7,531	8,391
Guatemala	3,607	6,251	5,908	6,820	8,410	10,208	11,872
Haiti	1,650	2,624	2,502	2,614	2,126	2,359	2,295
Honduras	1,418	2,400	2,613	3,049	3,628	4,213	5,022
Mexico	115,910	219,640	241,769	262,710	283,416	369,622	404,859
Nicaragua	3,948	4,125	4,258	3,598	3,931	5,022	5,840
Panama	2,801	4,786	5,723	6,077	7,940	9,957	12,263
Paraguay	1,558	3,658	4,077	4,904	5,909	5,853	6,641
Peru	22,737	32,918	32,259	29,281	38,457	43,493	53,338
Uruguay	5,932	7,986	6,967	8,366	10,217	11,341	11,871
Venezuela	29,498	44,192	41,381	47,028	55,710	57,831	65,012
East Asia	**1,472,901**	**2,331,105**	**2,831,596**	**3,686,382**	**4,358,118**	**4,979,659**	**5,979,107**
S.East Asia, Aust., Pacific	**295,214**	**449,610**	**533,938**	**668,928**	**866,634**	**994,061**	**1,213,598**
South Asia	**181,078**	**246,938**	**320,321**	**428,644**	**547,630**	**710,623**	**977,788**
Western Europe	**3,540,249**	**4,794,210**	**5,201,591**	**6,137,133**	**6,668,901**	**7,610,515**	**8,160,681**
Eastern Europe/CIS/Central Asia	**387,541**	**629,018**	**754,083**	**884,007**	**602,382**	**661,684**	**872,353**
North Africa/Middle East	**207,123**	**379,867**	**421,063**	**491,676**	**565,339**	**676,512**	**844,032**
Sub-Sahran Africa	**140,140**	**195,604**	**200,739**	**237,274**	**254,506**	**301,587**	**387,297**
World	**10,105,980**	**14,624,304**	**16,688,482**	**19,975,213**	**22,297,164**	**26,187,326**	**29,987,299**

Table 2-90
UN SERIES: LATIN AMERICA, U.S., AND WORLD REGIONS GDP PERCENTAGE GROWTH, 1970-2005

	1970-75	1980-85	1985-90	1990-95	1995-2000	2000-2005	1970-2005
United States	**14.9%**	**17.2%**	**17.4%**	**13.0%**	**22.5%**	**12.6%**	**195.5%**
Latin America	**36.8%**	**4.4%**	**8.6%**	**17.4%**	**16.6%**	**12.7%**	**209.9%**
Brazil	63.1%	6.5%	9.7%	16.2%	11.7%	11.4%	281.2%
Mexico	37.3%	10.1%	8.7%	7.9%	30.4%	9.5%	249.3%
East Asia	**26.1%**	**21.5%**	**30.2%**	**18.2%**	**14.3%**	**20.1%**	**305.9%**
S.East Asia, Aust., Pacific	**23.5%**	**18.8%**	**25.3%**	**29.6%**	**14.7%**	**22.1%**	**311.1%**
South Asia	**14.2%**	**29.7%**	**33.8%**	**27.8%**	**29.8%**	**37.6%**	**440.0%**
Western Europe	**16.1%**	**8.5%**	**18.0%**	**8.7%**	**14.1%**	**7.2%**	**130.5%**
Eastern Europe/CIS/Central Asia	**28.8%**	**19.9%**	**17.2%**	**-31.9%**	**9.8%**	**31.8%**	**125.1%**
North Africa/Middle East	**55.0%**	**10.8%**	**16.8%**	**15.0%**	**19.7%**	**24.8%**	**307.5%**
Sub-Sahran Africa	**22.4%**	**2.6%**	**18.2%**	**7.3%**	**18.5%**	**28.4%**	**176.4%**
World	**20.1%**	**14.1%**	**19.7%**	**11.6%**	**17.4%**	**14.5%**	**196.7%**

SOURCE: Calculated from table 2-89.

Table 2-91
UN SERIES: LATIN AMERICA, U.S., AND WORLD REGIONS GDP AVERAGE ANNUAL COMPOUND GROWTH, 1970-2005

	1970-75	1980-85	1985-90	1990-95	1995-2000	2000-2005	1970-2005
United States	2.8%	3.2%	3.3%	2.5%	4.1%	2.4%	3.1%
Latin America	**6.5%**	**0.9%**	**1.7%**	**3.3%**	**3.1%**	**2.4%**	**3.3%**
Brazil	10.3%	1.3%	1.9%	3.1%	2.2%	2.2%	3.9%
Mexico	6.5%	1.9%	1.7%	1.5%	5.5%	1.8%	3.6%
East Asia	**4.8%**	**4.0%**	**5.4%**	**3.4%**	**2.7%**	**3.7%**	**4.1%**
S.East Asia, Aust., Pacific	**4.3%**	**3.5%**	**4.6%**	**5.3%**	**2.8%**	**4.1%**	**4.1%**
South Asia	**2.7%**	**5.3%**	**6.0%**	**5.0%**	**5.3%**	**6.6%**	**4.9%**
Western Europe	**3.0%**	**1.6%**	**3.4%**	**1.7%**	**2.7%**	**1.4%**	**2.4%**
Eastern Europe/CIS/Central Asia	**5.2%**	**3.7%**	**3.2%**	**-7.4%**	**1.9%**	**5.7%**	**2.3%**
North Africa/Middle East	**9.2%**	**2.1%**	**3.1%**	**2.8%**	**3.7%**	**4.5%**	**4.1%**
Sub-Sahran Africa	**4.1%**	**0.5%**	**3.4%**	**1.4%**	**3.5%**	**5.1%**	**2.9%**
World	**3.7%**	**2.7%**	**3.7%**	**2.2%**	**3.3%**	**2.7%**	**3.2%**

SOURCE: Calculated from table 2-89.

Latin America and the U.S. and World Average

For the entire 1970-2005 period, Latin America outpaced the U.S., growing at an average rate of 3.3% for the 35 year period, compared to the U.S. growth rate of 3.1%. Latin America also outpaced the world average in GDP growth, which averaged 3.2% compared to Latin America's 3.3%

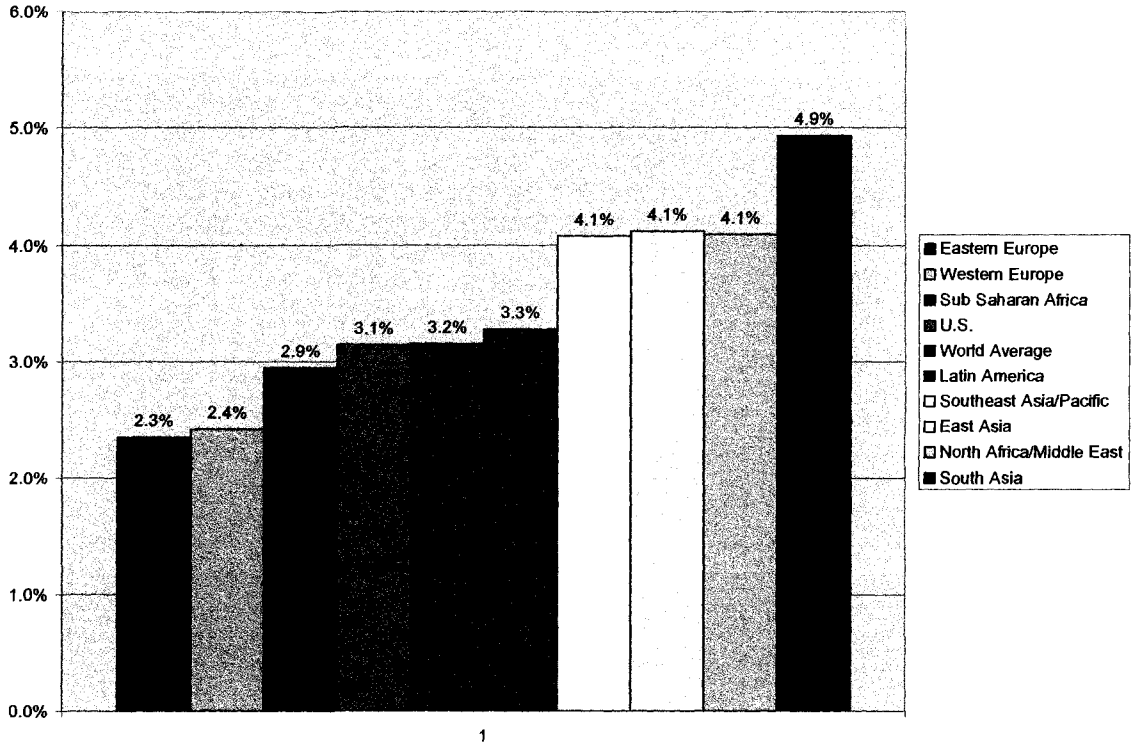
Latin America and other world regions

For the entire 35 year period, South Asia grew the fastest at 4.9%, followed by East Asia, North Africa/Middle East, and South East Asia all of which grew at 4.1%. Latin America is next with its 3.3% growth followed by the U.S. at 3.1%, Sub-Saharan Africa at 2.9%, Western Europe at 2.4%, and finally Eastern Europe at 2.3%. It therefore ranks 5th out of the nine world regions in this period.

Thus Latin America sits exactly in the middle in terms of world regional economic growth, with four regions ahead of it and four regions behind it. Therefore, it is no surprise that its average rate of growth is so close to the world average (though just ahead of it) as the following chart shows.

In terms of GDP ranking, Latin America begins 1970 as the number four region in GDP ranking-following the U.S., Western Europe, East Asia-and maintains that spot in 2005

Chart 2-13
GDP AVERAGE ANNUAL COMPOUND GROWTH
1970-2005



SOURCE: Calculated from table 2-89.

Table 2-92
U.N. SERIES: WORLD REGIONAL GDP AS A PERCENT OF U.S. GDP, 1970-2005
(U.S. = 100)

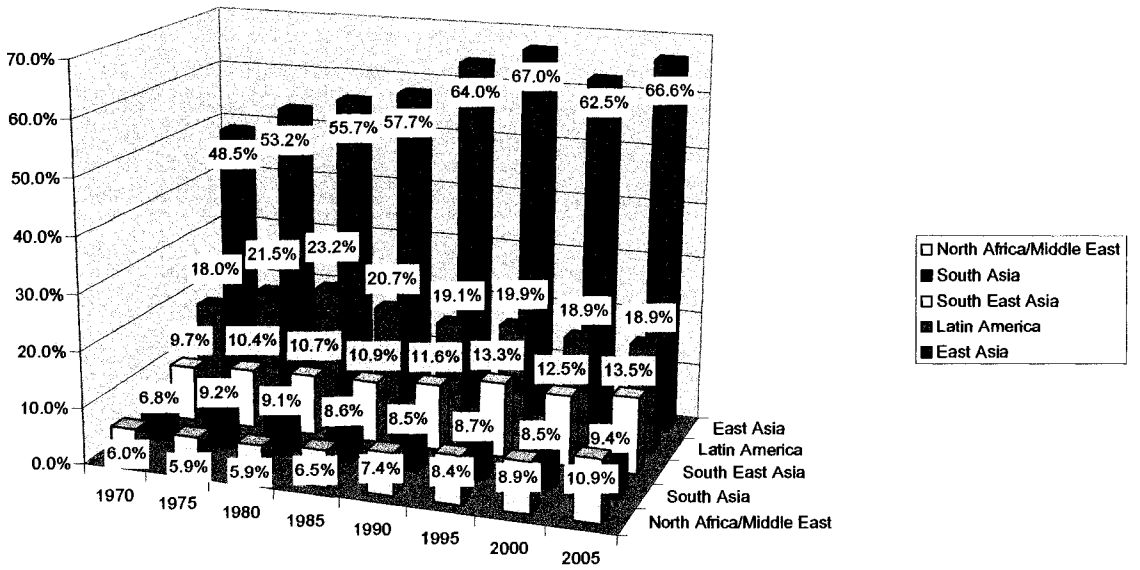
	1970	1980	1985	1990	1995	2000	2005
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Latin America	**18.0%**	**23.2%**	**20.7%**	**19.1%**	**19.9%**	**18.9%**	**18.9%**
Brazil	5.5%	9.0%	8.1%	7.6%	7.8%	7.1%	7.1%
Mexico	3.8%	5.2%	4.9%	4.6%	4.4%	4.6%	4.5%
East Asia	**48.5%**	**55.7%**	**57.7%**	**64.0%**	**67.0%**	**62.5%**	**66.6%**
S.East Asia, Aust., Pacific	**9.7%**	**10.7%**	**10.9%**	**11.6%**	**13.3%**	**12.5%**	**13.5%**
South Asia	**6.0%**	**5.9%**	**6.5%**	**7.4%**	**8.4%**	**8.9%**	**10.9%**
Western Europe	**116.6%**	**114.6%**	**106.0%**	**106.6%**	**102.5%**	**95.5%**	**90.9%**
Eastern Europe/CIS/Central Asia	**12.8%**	**15.0%**	**15.4%**	**15.4%**	**9.3%**	**8.3%**	**9.7%**
North Africa/Middle East	**6.8%**	**9.1%**	**8.6%**	**8.5%**	**8.7%**	**8.5%**	**9.4%**
Sub-Sahran Africa	**4.6%**	**4.7%**	**4.1%**	**4.1%**	**3.9%**	**3.8%**	**4.3%**

Given its higher GDP growth, Latin America narrows the GDP gap with the U.S., increasing from 18% to 18.9% of U.S. GDP over the 1970 through 2005 period. The other world regions that gained ground on the U.S. in terms of GDP were South Asia, East Asia, South-east Asia, and North Africa/Middle East. Just as Latin America was 5th in GDP growth for the period, it posted the 5th strongest relative increase with the United

States. There were three regions that suffered a widening GDP gap with the United States: Sub-Saharan Africa, Western Europe, and Eastern Europe.

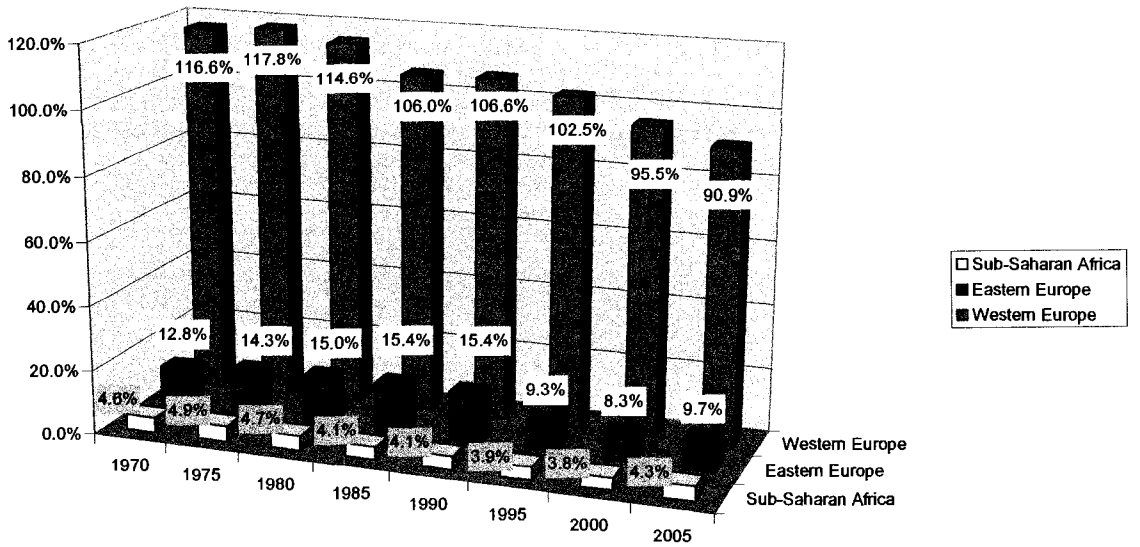
The following charts summarize the performance of the five regions that narrowed the GDP gap with the United States (East Asia, South East Asia, Latin America, North Africa/Middle East, and South Asia), and the five regions that lost relative ground to the U.S. in terms of GDP (Western Europe, Eastern Europe, and Sub-Saharan Africa).

Chart 2-14
GDP AS A PERCENT OF THE U.S. FOR FIVE REGIONS THAT GAINED RELATIVE GROUND ON THE U.S., 1970-2005
(U.S. = 100)



SOURCE: Table 2-92.

Chart 2-15
GDP AS A PERCENT OF THE U.S. FOR THREE REGIONS THAT LOST RELATIVE GROUND TO THE U.S., 1970-2005
(U.S. = 100)



SOURCE: Table 2-92.

GDP/C ANALYSIS

The following section presents the U.N. GDP/C series, percentage growth, and average annual compound growth rates. Population sources and methodology are provided in the data appendix.

Table 2-93
UN SERIES: WORLD REGIONAL GDP/C, 1970-2005
(U.S. 1990 dollars)

	1970	1980	1985	1990	1995	2000	2005
North America	**14,381**	**18,111**	**20,122**	**22,340**	**23,839**	**27,716**	**29,672**
United States	14,455	18,122	20,181	22,480	24,075	27,974	29,926
Latin America	**1,964**	**2,740**	**2,573**	**2,540**	**2,736**	**2,948**	**3,111**
Argentina	5,125	5,626	4,720	4,339	5,403	5,794	6,088
Bolivia	776	895	730	730	795	847	890
Brazil	1,732	3,085	2,936	2,931	3,152	3,265	3,392
Chile	2,042	2,248	1,999	2,542	3,530	4,042	4,702
Colombia	887	1,204	1,209	1,369	1,549	1,488	1,636
Costa Rica	1,813	2,435	2,149	2,358	2,724	3,065	3,401
Cuba	1,544	2,094	3,073	2,893	1,947	2,391	3,035
Dominican Republic	609	939	927	970	1,125	1,517	1,657
Ecuador	653	1,149	1,117	1,095	1,167	1,133	1,372
El Salvador	972	1,048	918	940	1,150	1,216	1,258
Guatemala	666	891	745	766	841	909	934
Haiti	350	461	392	368	271	275	247
Honduras	527	661	618	623	651	680	735
Mexico	2,228	3,168	3,147	3,127	3,087	3,706	3,883
Nicaragua	1,648	1,267	1,146	869	843	983	1,069
Panama	1,860	2,456	2,630	2,521	2,974	3,375	3,794
Paraguay	627	1,144	1,101	1,154	1,231	1,094	1,125
Peru	1,723	1,900	1,652	1,346	1,612	1,695	1,956
Uruguay	2,113	2,741	2,315	2,693	3,175	3,418	3,569
Venezuela	2,751	2,928	2,390	2,383	2,523	2,370	2,433
East Asia	**1,523**	**2,020**	**2,305**	**2,802**	**3,148**	**3,449**	**4,016**
S.East Asia, Aust., Pacific	**1,120**	**1,360**	**1,458**	**1,660**	**1,973**	**2,097**	**2,386**
South Asia	**258**	**278**	**320**	**382**	**439**	**518**	**655**
Western Europe	**11,746**	**15,273**	**16,429**	**19,081**	**20,329**	**22,886**	**23,926**
Eastern Europe/CIS/Central Asia	**1,390**	**2,081**	**2,404**	**2,724**	**1,844**	**2,048**	**2,732**
North Africa/Middle East	**1,465**	**2,046**	**1,939**	**1,984**	**2,059**	**2,262**	**2,611**
Sub-Sahran Africa	**722**	**764**	**677**	**694**	**639**	**668**	**759**
World	**3,008**	**3,621**	**3,792**	**4,167**	**4,312**	**4,740**	**5,116**

Table 2-94
U.N. SERIES: GDP PERCENTAGE GROWTH, 1970-2005

	1970-75	1980-85	1985-90	1990-95	1995-2000	2000-2005	1970-2005
North America	**10.3%**	**11.1%**	**11.0%**	**6.7%**	**16.3%**	**7.1%**	**106.3%**
Canada	16.4%	8.6%	7.5%	3.0%	16.9%	7.9%	99.9%
United States	9.7%	11.4%	11.4%	7.1%	16.2%	7.0%	107.0%
Latin America	**20.9%**	**-6.1%**	**-1.3%**	**7.7%**	**7.7%**	**5.5%**	**58.4%**
Brazil	44.8%	-4.8%	-0.2%	7.5%	3.6%	3.9%	95.8%
Mexico	17.7%	-0.7%	-0.6%	-1.3%	20.1%	4.8%	74.3%
East Asia	**13.5%**	**14.1%**	**21.6%**	**12.4%**	**9.5%**	**16.4%**	**163.7%**
S.East Asia, Aust., Pacific	**9.8%**	**7.2%**	**13.9%**	**18.9%**	**6.3%**	**13.7%**	**113.0%**
South Asia	**1.9%**	**15.1%**	**19.2%**	**14.9%**	**17.9%**	**26.6%**	**154.5%**
Western Europe	**13.2%**	**7.6%**	**16.1%**	**6.5%**	**12.6%**	**4.5%**	**103.7%**
Eastern Europe/CIS/Central Asia	**23.6%**	**15.5%**	**13.3%**	**-32.3%**	**11.0%**	**33.4%**	**96.5%**
North Africa/Middle East	**35.8%**	**-5.2%**	**2.3%**	**3.8%**	**9.8%**	**15.4%**	**78.2%**
Sub-Sahran Africa	**6.5%**	**-11.4%**	**2.5%**	**-7.8%**	**4.4%**	**13.7%**	**5.1%**
World	**9.0%**	**4.7%**	**9.9%**	**3.5%**	**9.9%**	**7.9%**	**70.1%**

SOURCE: Calculated from table 2-93.

Table 2-95
U.N. SERIES: GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1970-2005

	1970-75	1980-85	1985-90	1990-95	1995-2000	2000-2005	1970-2005
North America	**2.0%**	**2.1%**	**2.1%**	**1.3%**	**3.1%**	**1.4%**	**2.1%**
Canada	3.1%	1.7%	1.5%	0.6%	3.2%	1.5%	2.0%
United States	1.9%	2.2%	2.2%	1.4%	3.0%	1.4%	2.1%
Latin America	**3.9%**	**-1.2%**	**-0.3%**	**1.5%**	**1.5%**	**1.1%**	**1.3%**
Brazil	7.7%	-1.0%	0.0%	1.5%	0.7%	0.8%	1.9%
Mexico	3.3%	-0.1%	-0.1%	-0.3%	3.7%	0.9%	1.6%
East Asia	**2.6%**	**2.7%**	**4.0%**	**2.4%**	**1.8%**	**3.1%**	**2.8%**
S.East Asia, Aust., Pacific	**1.9%**	**1.4%**	**2.6%**	**3.5%**	**1.2%**	**2.6%**	**2.2%**
South Asia	**0.4%**	**2.8%**	**3.6%**	**2.8%**	**3.4%**	**4.8%**	**2.7%**
Western Europe	**2.5%**	**1.5%**	**3.0%**	**1.3%**	**2.4%**	**0.9%**	**2.1%**
Eastern Europe/CIS/Central Asia	**4.3%**	**2.9%**	**2.5%**	**-7.5%**	**2.1%**	**5.9%**	**1.9%**
North Africa/Middle East	**6.3%**	**-1.1%**	**0.5%**	**0.7%**	**1.9%**	**2.9%**	**1.7%**
Sub-Sahran Africa	**1.3%**	**-2.4%**	**0.5%**	**-1.6%**	**0.9%**	**2.6%**	**0.1%**
World	**1.7%**	**0.9%**	**1.9%**	**0.7%**	**1.9%**	**1.5%**	**1.5%**

SOURCE: Calculated from table 2-93.

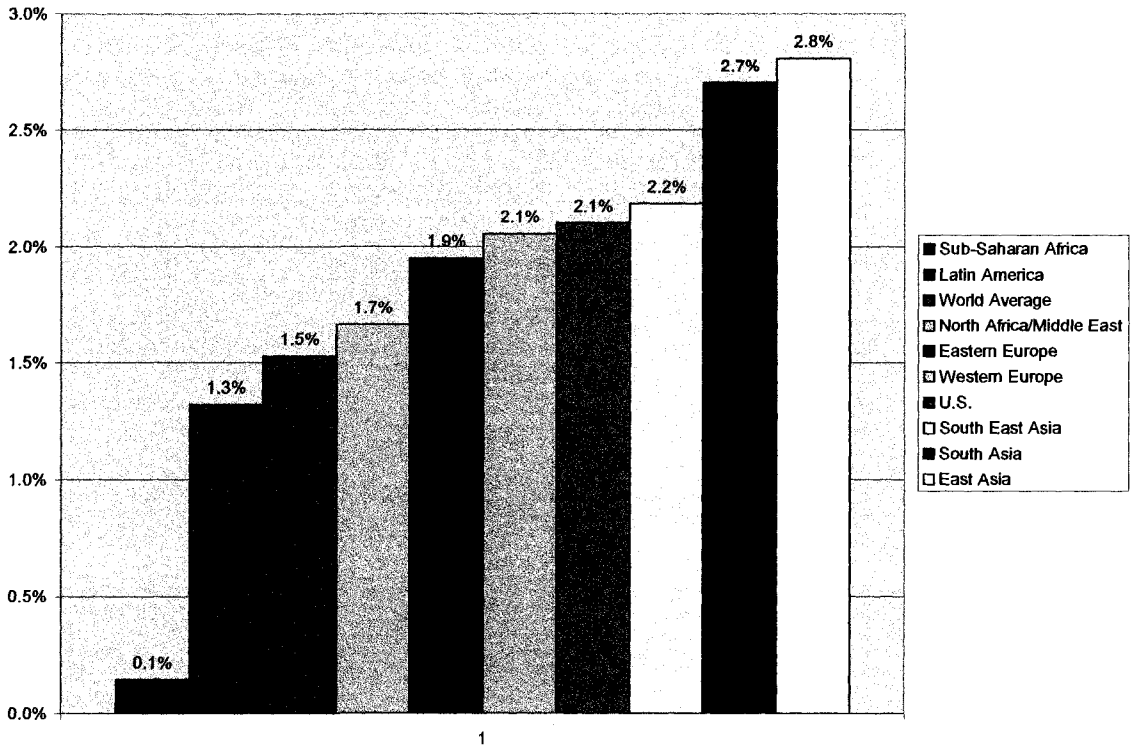
Latin America's GDP/C performance in the 1970-2005 period was very weak. Growing at only 1.3% it underperformed the U.S. which grew at 2.1%, and also the world average of 1.5%. In fact, among the nine world regions, Latin America was second to last. The only region that trailed Latin America in GDP/C growth was Sub-Saharan Africa which only managed .1% GDP/C growth.

Although the overall picture is very weak, the real problems begin the 1980. In the 1970-75 period, Latin America's GDP/C grows at 3.9% only trailing North Africa/Middle East and Eastern Europe; for the 1975-1980 period it grew at 2.9%, again third best, trailing only Eastern Europe and East Asia.

Because of its weak GDP/C performance, Latin America lost relative ground to the U.S., declining from 13.6% of U.S. GDP/C in 1970 to 10.4% in 2005. Though by a smaller margin, North Africa/Middle East, Western Europe, and Eastern Europe all lose relative ground to the U.S (as did the world average). Only three regions gain ground on the U.S. in GDP/C: East Asia, South Asia, and South East Asia.

Chart 2-16

GDP/C AVERAGE ANNUAL GROWTH RATES 1970-2005



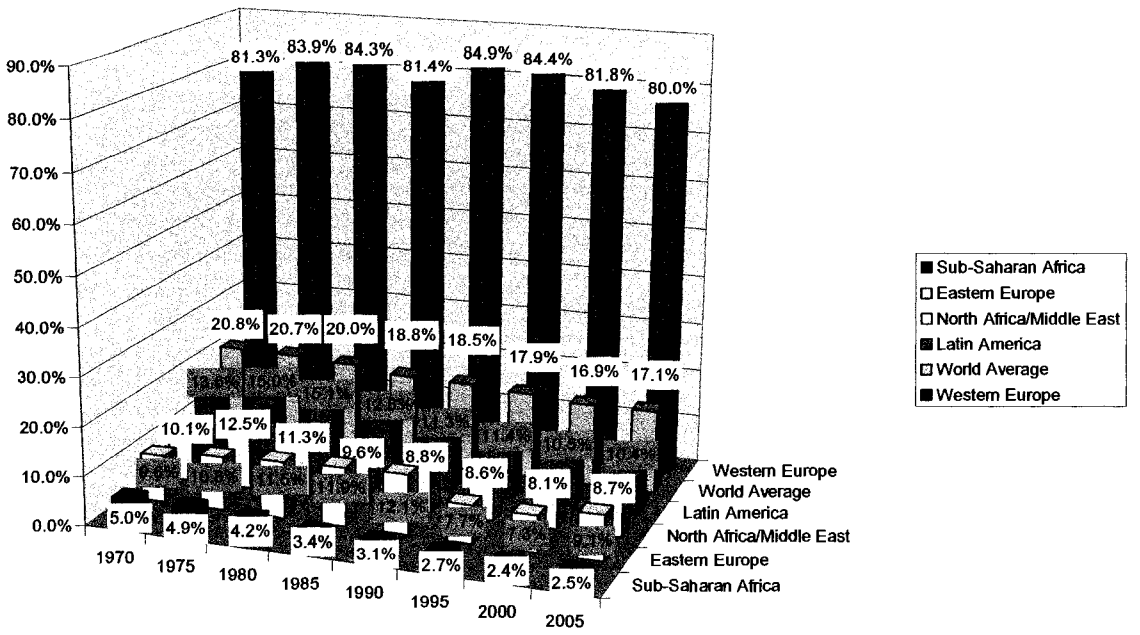
SOURCE: Table 2-95.

Table 2-96
U.N. SERIES: WORLD REGIONAL GDP/C AS A PERCENT OF U.S. GDP/C, 1970-2005
(U.S. = 100)

	1970	1980	1985	1990	1995	2000	2005
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Latin America	**13.6%**	**15.1%**	**12.8%**	**11.3%**	**11.4%**	**10.5%**	**10.4%**
Brazil	12.0%	17.0%	14.5%	13.0%	13.1%	11.7%	11.3%
Mexico	15.4%	17.5%	15.6%	13.9%	12.8%	13.2%	13.0%
East Asia	**10.5%**	**11.1%**	**11.4%**	**12.5%**	**13.1%**	**12.3%**	**13.4%**
S.East Asia, Aust., Pacific	**7.7%**	**7.5%**	**7.2%**	**7.4%**	**8.2%**	**7.5%**	**8.0%**
South Asia	**1.8%**	**1.5%**	**1.6%**	**1.7%**	**1.8%**	**1.8%**	**2.2%**
Western Europe	**81.3%**	**84.3%**	**81.4%**	**84.9%**	**84.4%**	**81.8%**	**80.0%**
Eastern Europe/CIS/Central Asia	**9.6%**	**11.5%**	**11.9%**	**12.1%**	**7.7%**	**7.3%**	**9.1%**
North Africa/Middle East	**10.1%**	**11.3%**	**9.6%**	**8.8%**	**8.6%**	**8.1%**	**8.7%**
Sub-Sahran Africa	**5.0%**	**4.2%**	**3.4%**	**3.1%**	**2.7%**	**2.4%**	**2.5%**
World	**20.8%**	**20.0%**	**18.8%**	**18.5%**	**17.9%**	**16.9%**	**17.1%**

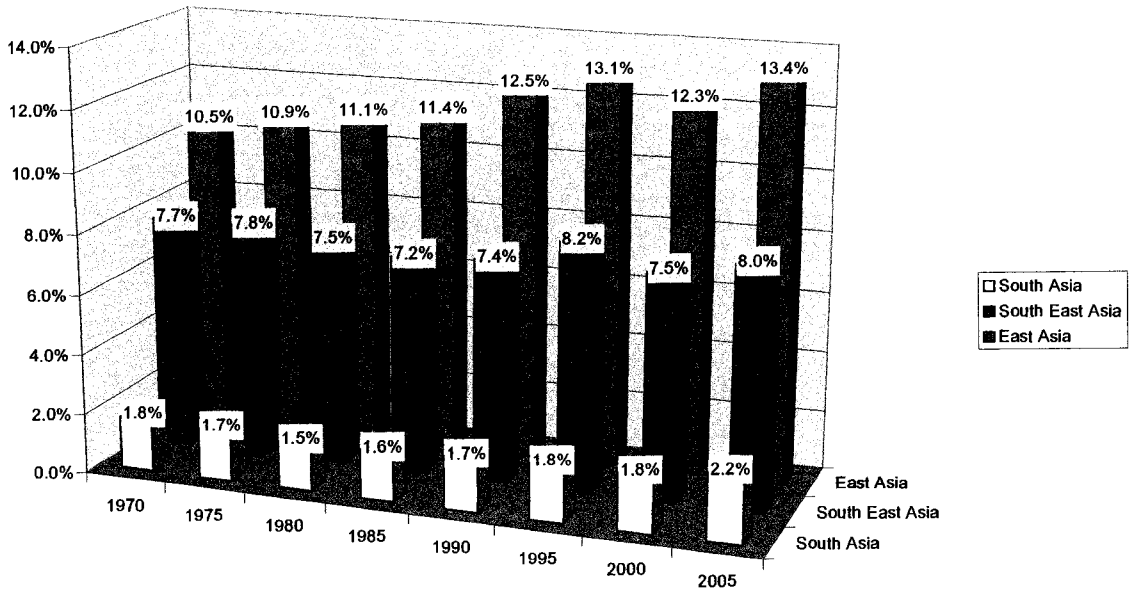
SOURCE: Calculated from table 2-93.

Chart 2-17
U.N. SERIES: 5 REGIONS AND WORLD AVERAGE THAT LOST RELATIVE GROUND TO THE U.S., 1970-2005
(U.S. = 100)



SOURCE: Table 2-96.

Chart 2-18
U.N. SERIES: THREE REGIONS THAT GAINED RELATIVE GROUND ON THE U.S. IN GDP/C, 1970-2005
(U.S. = 100)



SOURCE: Table 2-96.

Although Latin America lost relative ground to the U.S. in GDP/C terms, and underperformed all but one world region-it still has maintained a high GDP/C ranking relative to other regions. It began 1970 as the third highest GDP/C average among the world regions, trailing only the U.S. and Western Europe. By 2005, it had dropped to fourth place, trailing the U.S., Western Europe, and East Asia.

SUMMARY/CONCLUSION

GDP

Latin America outperforms the U.S. and world average for the 1970-2005 period, increasing from 18% to 18.9% of U.S. GDP. Therefore the GDP gap between Latin America and the U.S. narrows.

Among the world regions, Latin America posts the 5th best GDP growth record among the nine world regions (the U.S. is number 6).

GDP/C

Latin America underperforms the U.S. and all world regions except Sub-Saharan Africa for the 1970-2005 period. It drops from 13.6% of U.S. GDP/C to 10.4%. However, Latin America is not alone in its underperformance, as 4 other world regions

lose relative ground to the U.S in the same period. Only the three regions of Asia (East Asia, South Asia, and South East Asia) gain relative ground on the U.S.

Section 7: Angus Maddison Series

GDP ANALYSIS

The following series uses the most recent data updates from Angus Maddison's series in *The World Economy: Historical Statistics* which is available from his webpage.[1] The Maddison GDP series uses 1990 for its base year and PPP methodology. Maddison's work is one of the broadest GDP series in terms of long-term historical data and number of countries.

The following tables present the GDP series for Latin America and major world regions, as well as the corresponding percentage growth, and average annual compound growth. A separate series of tables provides GDP data for the individual countries of Latin America.

For information on the countries included in the world regions, and more information on the sources and methodology, please refer to the data appendix.

[1] Angus Maddison, *The World Economy: Historical Statistics* (Paris, OECD, 2003). Maddison's webpage provides an update to this series "World Population, GDP and Per Capita GDP, 1-2003 AD", http://www.ggdc.net/maddison/

Table 2-97
MADDISON SERIES: WORLD GDP, 1820-2003
(1990 U.S. dollars)

	1820	1870	1900	1950	1990	2000	2003
United States	12,548	98,374	312,499	1,455,916	5,803,200	8,019,378	8,430,760
Latin Am. 8	11,172	22,065	60,720	354,755	1,961,787	2,702,535	2,743,378
Total Lat. Am.	14,921	27,311	71,911	415,328	2,239,815	3,064,216	3,132,145
Western Europe	159,851	367,466	675,788	1,396,078	6,032,764	7,539,382	7,857,394
Eastern Europe	24,906	50,163	102,084	185,023	662,604	717,190	786,408
Former USSR	37,678	83,646	154,049	510,243	1,987,995	1,287,576	1,552,231
East Asia	397,207	403,170	500,686	885,111	7,709,413	12,378,593	15,081,355
West Asia	15,270	22,468		106,283	932,968	1,347,284	1,473,739
Total Asia	412,477	425,638	556,845	991,393	8,642,381	13,725,876	16,555,094
Africa	31,161	45,234	66,136	203,131	904,898	1,175,890	1,322,087
World Total	694,493	1,110,952	1,973,682	5,336,686	27,136,041	36,703,863	40,913,386

SOURCE: See data appendix for sources and methodology.

Table 2-98
MADDISON SERIES: LATIN AMERICA GDP, 1820-2003
(1990 U.S. dollars)

	1820	1870	1900	1950	1990	2000	2003
Latin America							
Argentina		2,354	12,932	85,524	212,518	320,364	296,991
Bolivia				5,309	14,446	20,991	22,473
Brazil	2,912	6,985	12,201	89,342	743,765	975,444	1,012,733
Chile	535	2509	6,492	22,352	84,038	156,245	171,514
Colombia			3,891	24,955	159,042	202,230	217,791
Costa Rica				1,702	14,370	22,908	25,388
Cuba				11,837	31,087	26,896	28,948
Dominican Republic				2,416	17,503	30,600	32,496
Ecuador				6,278	40,267	40,059	44,702
El Salvador				2,888	10,805	16,626	17,600
Guatemala				6,190	29,050	43,533	46,512
Haiti				3,254	6,323	5,817	5,752
Honduras				1,880	8,898	12,134	13,234
Mexico	5,000	6,214	18,585	67,368	516,692	724,371	740,226
Nicaragua				1,774	5,297	7,500	7,952
Panama				1,710	10,688	16,400	17,590
Paraguay				2,338	13,923	16,835	17,827
Peru			2,502	17,613	64,979	99,573	108,829
Uruguay		748	2,030	10,224	20,105	26,203	23,012
Venezuela	330	941	2,087	37,377	160,648	198,105	172,282

SOURCE: See data appendix for sources and methodology.

Table 2-99
MADDISON SERIES: WORLD REGIONAL GDP PERCENTAGE GROWTH, 1820-2003

	1820-1870	1870-1900	1900-1913	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	2000-03
United States	684%	218%	66%	57%	41%	51%	37%	37%	38%	5%
Latin America 8	98%	175%	69%	64%	67%	68%	74%	14%	38%	2%
Total Latin America	83%	163%	68%	65%	64%	67%	72%	14%	37%	2%
Western Europe	130%	84%	34%	5%	61%	60%	35%	24%	25%	4%
Western Offshoots	3051%	175%	66%	44%	47%	62%	36%	35%	41%	11%
East Europe	101%	104%	32%	0%	65%	53%	45%	-2%	8%	10%
Former USSR	122%	84%	51%	21%	65%	60%	26%	16%	-35%	21%
East Asia	2%	30%	22%	-10%	74%	82%	61%	72%	61%	22%
West Asia	47%			-10%	85%	111%	83%	23%	44%	9%
Total Asia	3%	31%	22%	-10%	75%	85%	64%	65%	59%	21%
Africa	45%	46%	20%	29%	48%	63%	48%	25%	30%	12%
World Total	60%	78%	38%	19%	58%	63%	46%	35%	35%	11%

SOURCE: Calculated from table 2-97.

Table 2-100
MADDISON SERIES: GDP PERCENTAGE GROWTH SUMMARY TABLE, 1820-2003

	1820-1900	1900-1950	1950-2000	1900-2000	1820-2003
United States	2390%	366%	451%	2466%	67088%
Brazil	319%	632%	992%	7895%	34678%
Mexico	272%	262%	975%	3798%	14705%
Latin America 8	444%	484%	662%	4351%	24456%
Latin America Total	382%	478%	638%	4161%	20892%
Western Europe	323%	107%	440%	1016%	4815%
Western Offshoots	8577%	319%	513%	2469%	248212%
East Europe	310%	81%	288%	603%	3058%
Former USSR	309%	231%	152%	736%	4020%
East Asia	32%	69%	1299%	2269%	3697%
West Asia	124%	211%	1168%	3838%	9551%
Total Asia	35%	78%	1285%	2365%	3914%
Africa	112%	207%	479%	1678%	4143%
World Total	184%	170%	588%	1760%	5791%

SOURCE: Calculated from table 2-97.

Table 2-101
MADDISON SERIES: WORLD REGIONAL GDP AVERAGE ANNUAL COMPOUND GROWTH, 1820-2003

	1820-1870	1870-1900	1900-1913	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	2000-03
United States	4.2%	3.9%	4.0%	4.6%	3.5%	4.2%	3.2%	3.2%	3.3%	1.7%
Latin America										
Brazil	1.8%	1.9%	3.5%	5.7%	6.5%	5.7%	8.1%	1.5%	2.7%	1.3%
Mexico	0.4%	3.7%	2.6%	6.0%	6.1%	6.5%	6.6%	1.8%	3.4%	0.7%
Latin America 8	1.4%	3.4%	4.1%	5.1%	5.2%	5.3%	5.7%	1.3%	3.3%	0.5%
Latin America Total	1.2%	3.3%	4.1%	5.2%	5.1%	5.3%	5.6%	1.3%	3.2%	0.7%
Western Europe	1.7%	2.1%	2.2%	0.4%	4.9%	4.8%	3.0%	2.2%	2.3%	1.4%
East Europe	1.4%	2.4%	2.2%	0.0%	5.1%	4.3%	3.8%	-0.2%	0.8%	3.1%
Former USSR	1.6%	2.1%	3.2%	2.0%	5.2%	4.8%	2.4%	1.5%	-4.3%	6.4%
East Asia	0.0%	0.9%	1.6%	-1.1%	5.7%	6.2%	4.9%	5.6%	4.8%	6.8%
West Asia	0.8%	1.4%	1.3%	-1.1%	6.3%	7.7%	6.2%	2.1%	3.7%	3.0%
Total Asia	0.1%	0.9%	1.6%	-1.1%	5.7%	6.3%	5.0%	5.1%	4.7%	6.4%
Africa	0.7%	1.3%	1.4%	2.6%	4.0%	5.0%	4.0%	2.2%	2.7%	4.0%
World Total	0.9%	1.9%	2.5%	1.7%	4.7%	5.0%	3.8%	3.1%	3.1%	3.7%

SOURCE: Calculated from table 2-97.

Table 2-102
MADDISON SERIES: AVERAGE ANNUAL COMPOUND GROWTH SUMMARY TABLE

	1820-1900	1900-1950	1950-2000	1900-2000	1820-2003
United States	4.1%	3.1%	3.5%	3.3%	3.6%
Latin America					
Brazil	1.8%	4.1%	4.9%	4.5%	3.2%
Mexico	1.7%	2.6%	4.9%	3.7%	2.8%
LA 8	2.1%	3.6%	4.1%	3.9%	3.1%
LA TOTAL	2.0%	3.6%	4.1%	3.8%	3.0%
Western Europe	1.8%	1.5%	3.4%	2.4%	2.2%
East Europe	1.8%	1.2%	2.7%	2.0%	1.9%
Former USSR	1.8%	2.4%	1.9%	2.1%	2.1%
East Asia	0.3%	1.1%	5.4%	3.2%	2.0%
West Asia	1.0%	2.3%	5.2%	3.7%	2.5%
Total Asia	0.4%	1.2%	5.4%	3.3%	2.0%
Africa	0.9%	2.3%	3.6%	2.9%	2.1%
World Total	1.3%	2.0%	3.9%	3.0%	2.3%

SOURCE: Calculated from table 2-97.

Latin America 1820-2003

For the entire 1820-2003 period, the U.S. averaged the greatest growth percentage at 3.6% followed by Latin America at 3.0%. Both the U.S. and Latin America performed well above the world average of 2.3%. Therefore, although the U.S. outperformed Latin America, Latin America in turn, outperformed the rest of the world in GDP growth.

The following sections break the 1820-2003 time period down into two parts: the first section looks at the 19th century (1820-1900), and the second section at the 20th century.

Latin America and the world in the 19th century

During the 1820-1900 period, the U.S. is the global leader in GDP growth averaging 4.1%, followed by Latin America at 2.0%. Meanwhile, Western Europe, Eastern Europe, and the former USSR all grew at 1.8%, above the world average of 1.3% GDP growth. Trailing the world GDP growth rate for the 1820-1900 period are West Asia at 1.0%, Africa at .9%, and East Asia at .3% (combined Asia total is .4%).

Therefore for the 19th century (1820-1900 period), the GDP gap between the U.S. and Latin America does widen substantially. However, this same trend applies even more

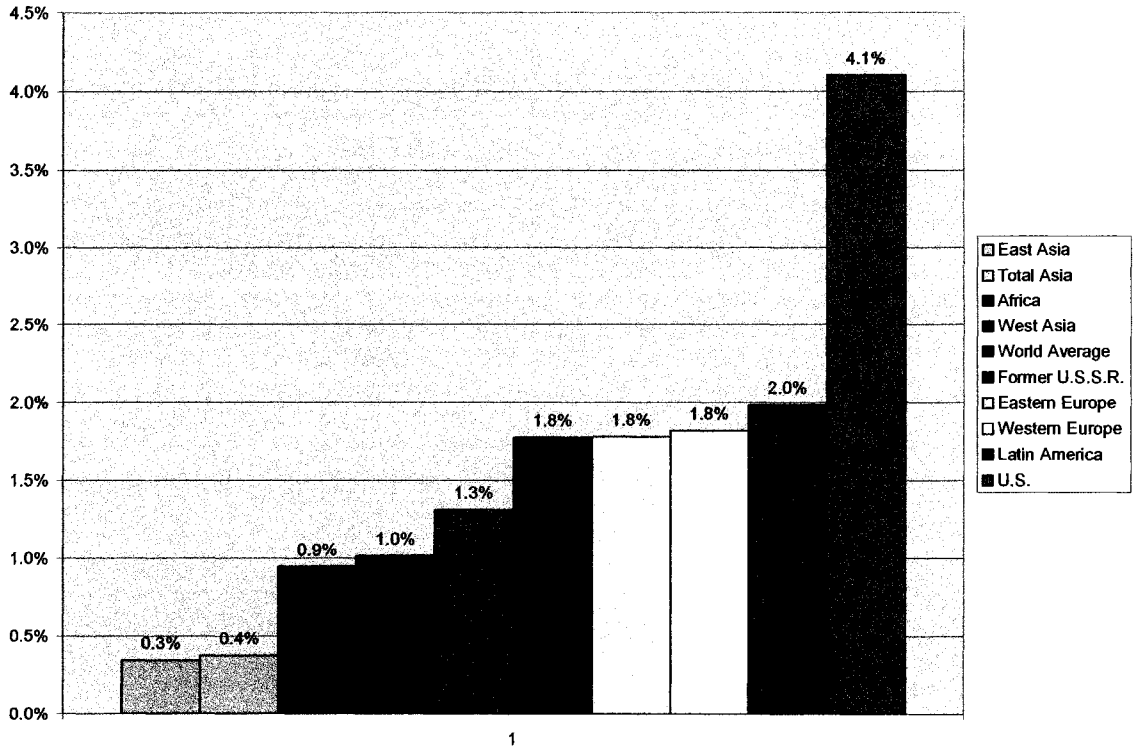
so to the rest of the world. Although Latin America is outperformed by the U.S. in the 19th century, it in turn outperforms the rest of the world in GDP growth.

A closer examination of this period reveals further insights. During the 1820-1870 period, the U.S. grows at 4.2%, followed by Western Europe at 1.7%, the former U.S.S.R. at 1.6%, and Eastern Europe at 1.4%, and then Latin America at 1.2%, still above the world average of .9% GDP growth. Understandably the 1820 through 1870 period is a difficult one for Latin America, with much of the region still suffering from the economic and social destruction of the wars of independence and its ensuing political chaos. Yet in spite of these obstacles, Latin America still manages to grow its GDP above the world average, and higher than all of Asia and Africa.

The picture is very different for the 1870-1900 period, as Latin America has recovered and is once again ranks second only to the U.S. in GDP growth, growing at 3.3%, compared to the U.S. 3.9%.

Therefore, the 19th century is one in which the U.S. widens the GDP gap with every major region in the world. Latin America, in spite of the difficulties of the 1820-1870 period, is still able to in turn outperform every other region (besides the U.S.) in GDP growth during the 1820-1900 period. The following chart summarizes the performance of major world regions during this period.

Chart 2-19
MADDISON SERIES: WORLD REGIONAL GDP GROWTH, 1820-1900



SOURCE: Table 2-103.

Latin America and the world in the 20th century

In the 20th century, Latin America replaces the U.S. as the leader in economic growth. Overall for the 20th century, Latin America grows at a rate of 3.8%, followed by West Asia at 3.7%, the U.S. at 3.3% East Asia at 3.2, (and Total for Asia 3.3%). All of

these regions fared above the world average of 3.0%. Therefore, in the 20th century Latin America outperforms every major world region in GDP growth.

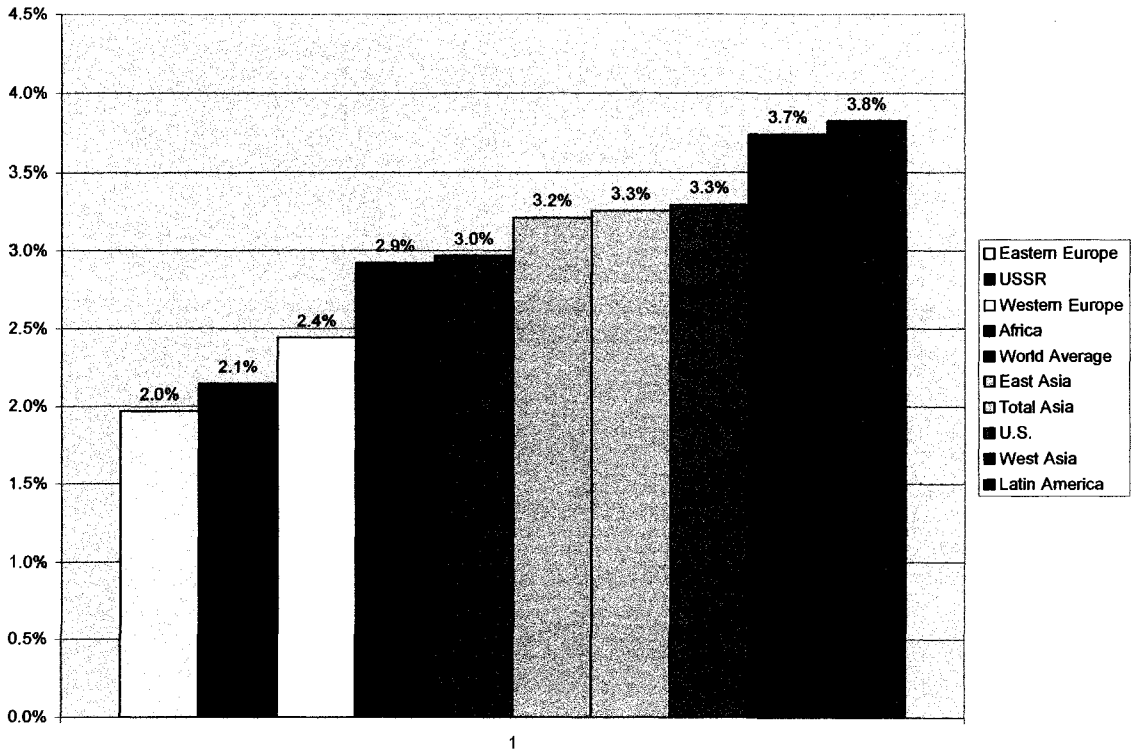
Breaking the period down, for the 1900-1950 period, Latin America maintains the number one growth rate of 3.6% followed by the U.S. at 3.1%, then the former U.S.S.R. at 2.4%, West Asia at 2.3%, and Africa at 2.3%. Meanwhile, East Asia ranked at the bottom in GDP growth at 1.1%-their high overall ranking for the 20th century clearly a product of the second half of the century.

For the 1950-2000 period, East Asia is the top GDP growth region, growing at 5.4% (as does Total Asia), followed by West Asia at 5.2%, and Latin America at 4.1%. All of these regions grew above the world average, which more than doubled from the 1900-1950 growth rate of 2.0% to 4.1% in the 1950-2000 period. For the first time in this analysis, the U.S. actually trailed the world growth average, growing at 3.5%.

Therefore, while Latin America outperforms every region in GDP growth in the 20th century, as the century progresses, it is surpassed in growth by Asia. However, the stronger performance of Asia in the second half of the century is offset by its very weak performance in the first half of the century. Thus, Latin America overall is number one in GDP growth for the 20th century as the following chart summarizes.

Chart 2-20

GDP GROWTH 1900-2000



SOURCE: Table 2-103.

The following table shows the results of the differential growth rates, as some regions narrowed the GDP gap with the U.S., as did Latin America, while for others the GDP gap widened.

Table 2-103
MADDISON SERIES: WORLD REGIONAL GDP AS A PERCENT OF U.S. GDP, 1820-2003
(U.S. =100)

	1820	1900	1950	1960	1970	1980	1990	2000	2003
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Latin America									
Brazil	23.2%	3.9%	6.1%	8.2%	9.5%	15.1%	12.8%	12.2%	12.0%
LA 8	89.0%	19.4%	24.4%	28.9%	32.2%	40.7%	33.8%	33.7%	32.5%
LA TOTAL	118.9%	23.0%	28.5%	33.3%	37.0%	46.3%	38.6%	38.2%	37.2%
Western Europe	1274%	216.3%	95.9%	110.0%	116.5%	114.6%	104.0%	94.0%	93.2%
Eastern Europe	198.5%	32.7%	12.7%	14.9%	15.1%	16.0%	11.4%	8.9%	9.3%
Former USSR	300%	49.3%	35.0%	41.2%	43.9%	40.4%	34.3%	16.1%	18.4%
East Asia	3165%	167.2%	60.8%	75.0%	90.6%	106.1%	132.8%	154.4%	178.9%
West Asia	122%	10.9%	7.3%	9.6%	13.4%	17.9%	16.1%	16.8%	17.5%
Total Asia	3287%	178.2%	68.1%	84.6%	104.0%	124.0%	148.9%	171.2%	196.4%
Total Africa	248%	21.2%	14.0%	14.7%	15.9%	17.2%	15.6%	14.7%	15.7%

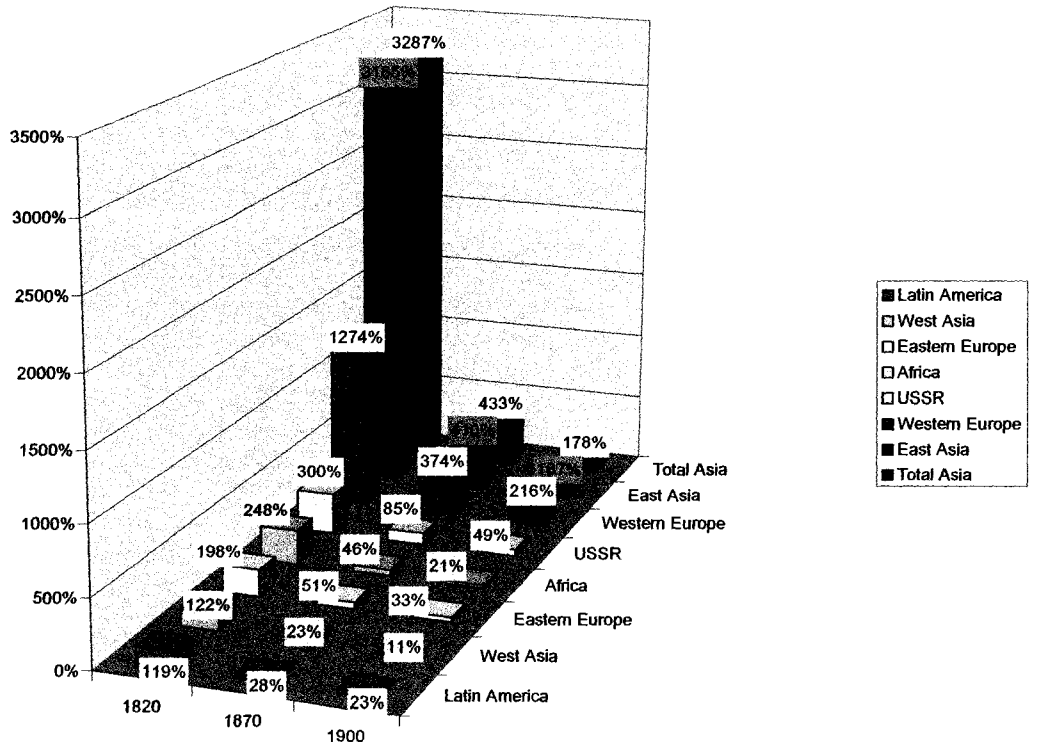
SOURCE: Calculated from table 2-97.

For the entire 1820-2003 period there is a widening gap between the U.S. and Latin America. However, as previously mentioned this is the case for every region for the world. Furthermore, Latin America in turn narrows the gap with every region ahead of it (except the U.S.) and widens the gap with every region behind it.

The primary cause for the widening gap was the high rate of growth experienced by the U.S. in the 19th century. Although Latin America clearly suffered economic obstacles to GDP growth, the fact that the U.S. outpaced every region in the world tells us that the widening gap of the 19th century had more to do with the U.S. moving ahead rather than other regions falling behind.

It is also worth pointing out that among the world regions in 1820, Latin America has the lowest relative GDP to the U.S., yet by 1900 has moved ahead of West Asia and Africa. The following chart summarizes the widening gap between the U.S. and major world regions during the 1820 through 1900 period.

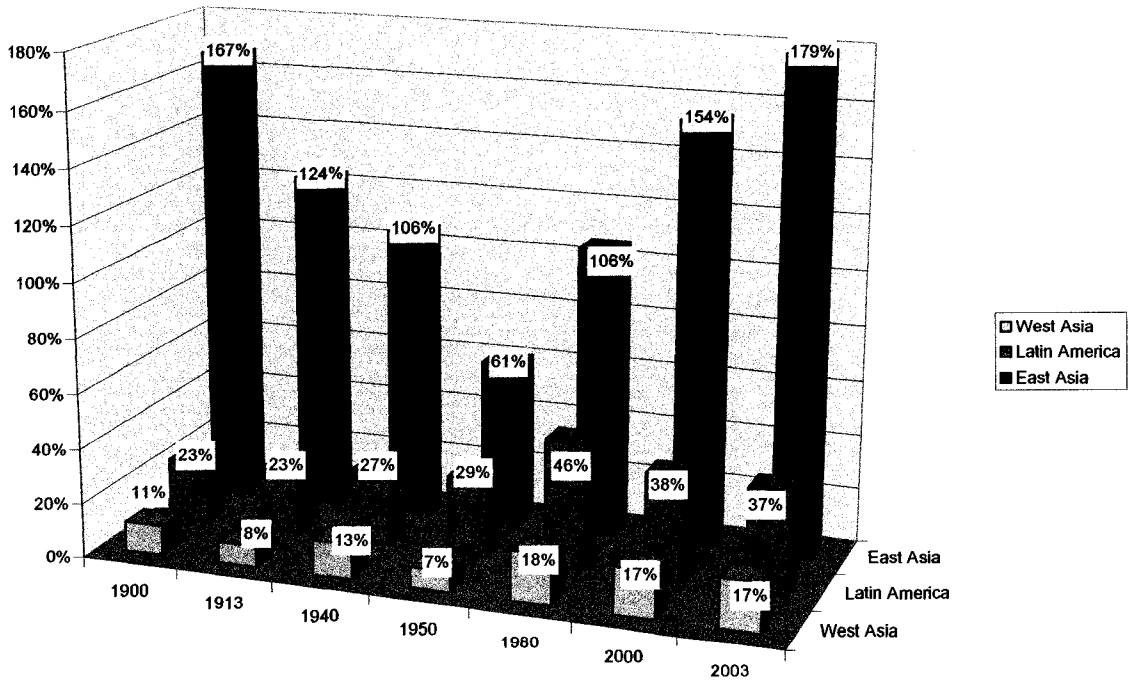
Chart 2-21
WORLD REGIONAL GDP AS A PERCENT OF U.S. GDP, 1820-1900
(U.S. =100)



SOURCE: Table 2-104.

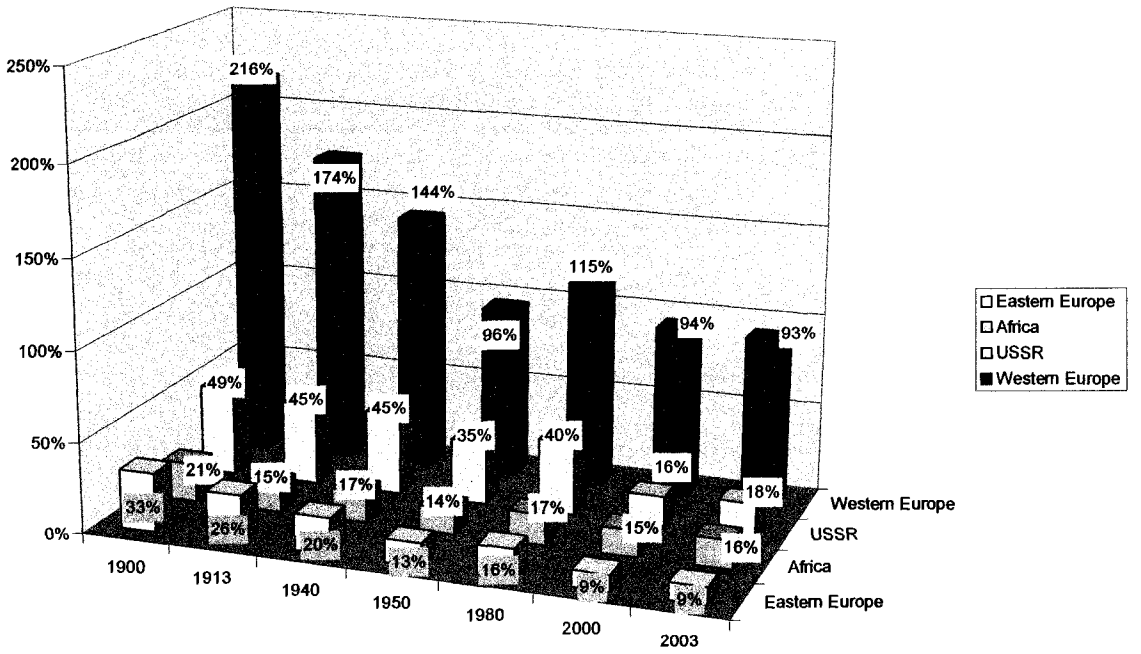
For the 1900-2003 period, the U.S. is no longer widening the gap with all of the world. Latin America and Asia (East Asia and West Asia) gain relative ground on the U.S., while the other four world regions lose relative ground as the following graphs show.

Chart 2-21
MADDISON SEREIS: THREE REGIONS THAT GAIN RELATIVE GROUND ON THE U.S., 1900-2003
(U.S. = 100)



SOURCE: Table 2-104.

Chart 2-22
MADDISON SERIES: FOUR REGIONS THAT DECLINE RELATIVE THE U.S.
1900-2003



SOURCE: Table 2-104.

GDP/C ANALYSIS

The following tables present the GDP/C for the Maddison series, along with the corresponding percentage growth rates, and average annual compound growth rates. Details on the sources and methodology are provided in the appendix.

Table 2-104
MADDISON SERIES: WORLD REGIONAL GDP/C, 1700-2003
(U.S. 1990 dollars)

	1700	1820	1870	1900	1950	2000	2003
United States	527	1,257	2,445	4,091	9,561	28,403	29,037
Latin America 8		712	742	1,206	2,696	6,424	6,278
Latin America total	527	691	676	1,113	2,503	5,893	5,786
Western Europe	997	1,960	1,202	2,892	4,578	19,264	19,912
East Europe	606	937	683	1,438	2,111	5,901	6,476
Former USSR	610	688	943	1,237	2,841	4,454	5,397
East Asia		580	549	637	669	3,675	4,329
West Asian		742	607	930	1,776	5,690	5,899
Total Asia	572	581	556	638	717	3,807	4,434
Total Africa	421	420	500	601	890	1,474	1,549
World Total	615	667	873	1,262	2,113	6,055	6,516

SOURCE: See data appendix for sources and methodology.

Table 2-105
MADDISON SERIES: LATIN AMERICA GDP/C, 1820-2003
(U.S. 1990 dollars)

	1820	1870	1900	1950	2000	2003
Latin America						
Argentina	0	1,311	2,756	4,987	8,544	7,666
Bolivia	0	0	0	1,919	2,575	2,617
Brazil	646	713	678	1,672	5,556	5,563
Chile	694	1,290	2,194	3,670	10,311	10,950
Colombia	0	0	973	2,153	5,096	5,228
Costa Rica	0	0	0	1,963	6,174	6,516
Cuba	0	0	0	2,046	2,416	2,569
Dominican Republic	0	0	0	1,027	3,649	3,700
Ecuador	0	0	0	1,863	3,203	3,419
El Salvador	0	0	0	1,489	2,716	2,720
Guatemala	0	0	0	2,085	4,097	4,060
Haiti	0	0	0	1,051	796	740
Honduras	0	0	0	1,313	1,912	1,934
Mexico	759	674	1,366	2,365	7,249	7,137
Nicaragua	0	0	0	1,616	1,521	1,514
Panama		0	0	1,916	5,676	5,787
Paraguay	0	0	0	1,584	3,014	2,953
Peru	0	0	686	2,308	3,833	4,007
Uruguay	0	2,181	2,219	4,659	7,883	6,805
Venezuela	460	569	821	7,462	8,415	6,988

SOURCE: See data appendix for sources and methodology.

Table 2-106
MADDISON SERIES: WORLD REGIONAL GDP/C PERCENTAGE GROWTH

	1700-1820	1820-1870	1870-1900	1913-40	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000
United States	139%	94%	67%	32%	36%	18%	33%	24%	25%	22%
Latin America										
Brazil		10%	-5%	54%	34%	40%	31%	70%	-5%	13%
Mexico		-11%	103%	7%	28%	33%	37%	46%	-4%	19%
Latin America 8		4%	63%	31%	27%	26%	27%	37%	-7%	18%
Latin America Total	31%	-2%	65%	29%	29%	25%	28%	36%	-7%	16%
Western Europe	21%	63%	48%	32%	1%	51%	48%	29%	21%	21%
East Europe	13%	37%	54%	16%	7%	45%	41%	34%	-6%	8%
Former USSR	13%	37%	31%	44%	33%	39%	41%	15%	7%	-35%
East Asia		-5%	16%	23%	-20%	43%	47%	31%	44%	39%
West Asia		22%		114%	-20%	40%	60%	35%	-10%	17%
Total Asia	2%	-4%	15%	29%	-20%	43%	49%	33%	37%	37%
Africa	0%	19%	20%	28%	9%	19%	28%	14%	-6%	2%
World Total	8%	31%	45%	29%	8%	31%	35%	21%	14%	17%

SOURCE: Calculated from table 2-105.

Table 2-107
MADDISON SERIES: SUMMARY GDP/C PERCENT GROWTH, 1820-2003

	1820-1900	1900-1950	1950-2000	1900-2000	1820-2003
United States	225%	134%	197%	594%	2210%
Latin America					
Brazil	5%	146%	232%	719%	761%
Mexico	80%	73%	207%	431%	840%
Latin America 8	69%	124%	138%	433%	782%
Latin America Total	61%	125%	135%	429%	737%
Western Europe	141%	58%	321%	566%	1557%
East Europe	110%	47%	180%	310%	848%
Former USSR	80%	130%	57%	260%	684%
Total East Asia	10%	5%	449%	477%	647%
West Asia	53%	91%	220%	512%	872%
Total Asia	10%	12%	431%	497%	664%
Total Africa	43%	48%	66%	145%	269%
World Total	89%	67%	187%	380%	877%

SOURCE: Calculated from table 2-105.

Table 2-108
MADDISON SERIES: WORLD REGIONAL GDP/C AVERAGE ANNUAL PERCENT GROWTH, 1820-2000

	1700-1820	1820-1870	1870-1900	1913-40	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000
United States	.73%	1.3%	1.7%	1.0%	3.2%	1.7%	2.9%	2.1%	2.2%	2.0%
Latin America										
Brazil		0.2%	-0.2%	1.6%	3.0%	3.4%	2.7%	5.5%	-0.5%	1.2%
Mexico		-0.2%	2.4%	0.2%	2.5%	2.9%	3.2%	3.9%	-0.4%	1.8%
Latin America 8		0.1%	1.6%	1.0%	2.4%	2.3%	2.4%	3.2%	-0.8%	1.6%
Latin America Total	0.23%	0.0%	1.7%	1.0%	2.6%	2.3%	2.5%	3.1%	-0.7%	1.5%
Western Europe	.16%	1.0%	1.3%	1.0%	0.1%	4.2%	4.0%	2.6%	1.9%	1.9%
Eastern Europe	0.1%	0.6%	1.4%	0.6%	0.7%	3.8%	3.5%	3.0%	-0.6%	0.8%
Former USSR	0.1%	0.6%	0.9%	1.4%	2.9%	3.3%	3.5%	1.4%	0.7%	-4.3%
East Asia	%	-0.1%	0.5%	0.8%	-2.2%	3.6%	3.9%	2.7%	3.7%	3.3%
West Asia	%	0.4%	0.8%	2.9%	-2.2%	3.4%	4.8%	3.0%	-1.0%	1.6%
Total Asia	0.01%	-0.1%	0.5%	0.9%	-2.2%	3.7%	4.1%	2.9%	3.2%	3.2%
Africa	0%	0.4%	0.6%	0.9%	0.9%	1.8%	2.5%	1.3%	-0.6%	0.2%
World Total	0.07	0.5%	1.2%	0.9%	0.7%	2.8%	3.0%	1.9%	1.3%	1.6%

SOURCE: Calculated from table 2-105.

Table 2-109
MADDISON SERIES: GDP/C AVERAGE ANNUAL COMPOUND GROWTH SUMMARY TABLE, 1820-2003

	1820-1900	1900-50	1950-2000	1900-2000	1820-2003	1700-2000
United States	1.5%	1.7%	2.2%	2.0%	1.73%	1.34%
Latin America						
Brazil	0.1%	1.8%	2.4%	2.1%	1.2%	
Mexico	0.7%	1.1%	2.3%	1.7%	1.2%	
LA 8	0.7%	1.6%	1.8%	1.7%	1.2%	
LA TOTAL	0.6%	1.6%	1.7%	1.7%	1.17%	.81%
Western Europe	1.1%	0.9%	2.9%	1.9%	1.55%	.99%
Eastern Europe	0.9%	0.8%	2.1%	1.4%	1.24%	.76
USSR	0.7%	1.7%	0.9%	1.3%	1.13%	.66
East Asia	0.1%	0.1%	3.5%	1.8%	1.10%	
West Asia	0.5%	1.3%	2.4%	1.8%	1.25%	
Total Asia	0.1%	0.2%	3.4%	1.8%	1.12%	.63%
Africa	0.5%	0.8%	1.0%	0.9%	0.72%	0.42%
World Total	0.8%	1.0%	2.1%	1.6%	1.25%	.77%

SOURCE: Calculated from table 2-105.

Latin America and World Regions 1700-2003

For the entire 1700 through 2000 period, the U.S is the fastest growing GDP/C country at 1.34%, followed by Western Europe at .99%, and then Latin America in the third spot at .81%. For the entire period, Latin America therefore trails the U.S. and the GDP/C gap widens between the two. However, Latin America outperforms the world average, and every world region except the United States and Western Europe.

The following sections break the 1700-2003 time period down into three parts: the first section looks at the 18th century (1700-1820), the second section at the 19th century (1820-1900), and the third section at the 20th century (1900-2000)

Latin America and World Regions in the 1700-1820 period

The GDP/C for each major world region from 1700 through 1820 and their corresponding average annual compound growth rates are summarized in the following tables.

Table 2-110
MADDISON SERIES: WORLD REGIONAL GDP/C, 1700-1820
(1990 U.S. dollars)

	1700	1820
United States	527	1257
Latin America	527	691
Western Europe	997	1202
Eastern Europe	606	683
Former USSR	610	688
Asia	572	581
Africa	421	420
World	615	667

SOURCE: See data appendix for Maddison Series sources and methodology.

Table 2-111
MADDISON SERIES: WORLD REGIONAL GDP/C AVERAGE ANNUAL GDP/C GROWTH, 1700-1820

United States	0.73%
Latin America	0.23%
Western Europe	0.16%
Eastern Europe	0.10%
Former USSR	0.10%
Asia	0.01%
Africa	0.00%
World	0.07%

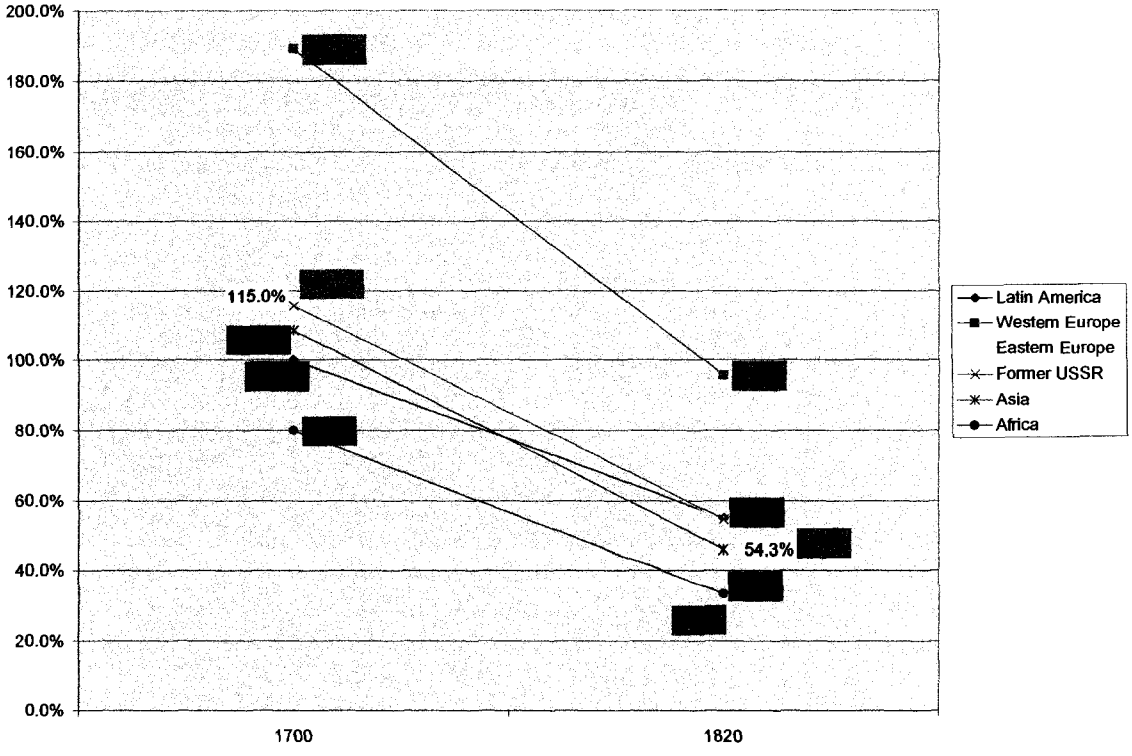
SOURCE: Calculated from table 2-111.

According to Maddison's data, both Latin America and the United States begin 1700 with an equal GDP/C. In comparison to world regions, they trail every region of the world (including the world average) except Africa. The world leader is Western Europe, with a GDP/C nearly two times that of the United States and Latin America.

In the ensuing 120 years, the United States excels as the world leader in GDP/C growth, growing at .73%. Based on this growth, the U.S. moves from the number five spot (tied with Latin America), to number one, overtaking Western Europe. Meanwhile, Latin America is the region with the second highest growth rate, at .23%, and moves into the number three spot in GDP/C, only trailing the United States and Western Europe.

Therefore, during the 1700-1820 period, the GDP/C gap between the United States and Latin America widens. However, the GDP/C gap between the U.S. and every other world region widens to an even greater extent. The following chart demonstrates the widening gap between the United States and the world.

Chart 2-24
MADDISON SERIES: WORLD REGIONAL GDP/C AS A PERCENT OF U.S. GDP/C, 1700-1820
(U.S. = 100)



SOURCE: Calculated from table 2-111.

A more meaningful comparison for Latin America is therefore the world average and other world regions. From 1700-1820, Latin America grows at about three times the world average (Latin America .23%, world average .07%). Due to this higher growth, Latin America's GDP/C moves ahead of the world average, starting at only 86% of the world average GDP/C in 1700, and increasing to 104% in 1820.

Relative to other world regions Latin America also fared well. Indeed, aside from the United States, it outpaced every world region. In the process, Latin America moved from 2nd to last in GDP/C rankings in 1700 (tied with the U.S) to the number three spot, trailing only the U.S. and Western Europe.

Latin America and World Regions in the 19th century (1820-1900)

The following tables summarize the GDP/C and GDP/C average annual growth for Latin America and the United States during the 1820 through 1900 period.

Table 2-112
MADDISON SERIES: WORLD REGIONAL GDP/C, 1820-1900
(U.S. 1990 dollars)

	1820	1900
United States	1257	4091
Latin America	691	1113
Western Europe	1202	2892
Eastern Europe	683	1438
Former USSR	688	1237
Asia	581	638
Africa	420	601
World	667	1262

SOURCE: See data appendix for Maddison sources and methodology.

Table 2-113
MADDISON SERIES: WORLD REGIONAL GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1820-1900

	1820-1900
United States	1.49%
Latin America	0.60%
Western Europe	1.10%
Eastern Europe	0.93%
Former USSR	0.74%
Asia	0.12%
Africa	0.45%
World	0.80%

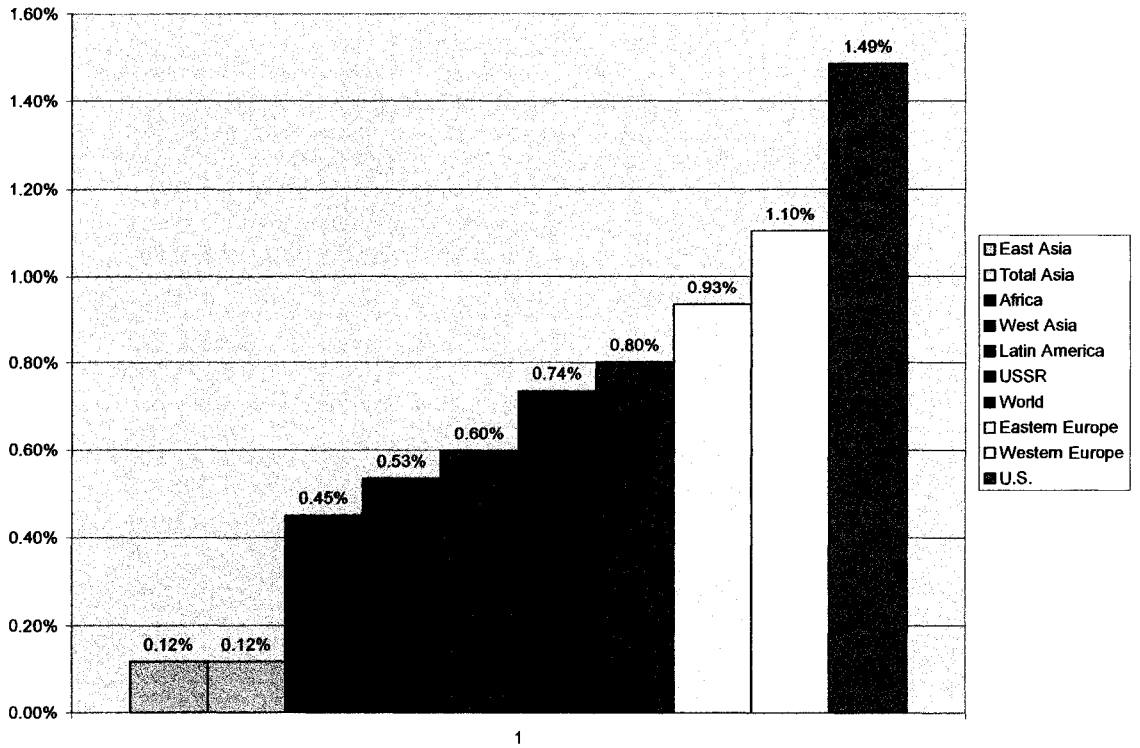
SOURCE: Calculated from table 2-113.

The United States and Latin America begin 1820 as the number one and number three ranked regions in GDP/C respectively. In the ensuing 80 years, the United States continues its strong growth, leading the world at an average rate of 1.5%. It therefore maintains the number one spot in 1900 for GDP/C.

Compared to the U.S., Latin America greatly underperforms, growing at only .6% from 1820 through 1900. Yet this comparison is rendered less significant, as once again, the U.S. outperforms every world region.

Again a more appropriate comparison for Latin America is to the world average and other world regions Latin America's GDP/C growth (.6%) fares poorly in this comparison underperforming Western Europe (1.1%), Eastern Europe (.9%), the world average (.8%), and the former USSR (.7%). However, Latin America does outpace the growth of the largest world regions: Africa (.5%) and Asia (.1%). Based on this weaker relative growth, Latin America falls from the number three spot in GDP/C in 1820, to number five in 1900 ahead of Asia and Africa. The following chart summarizes the GDP/C growth performance of the major world regions.

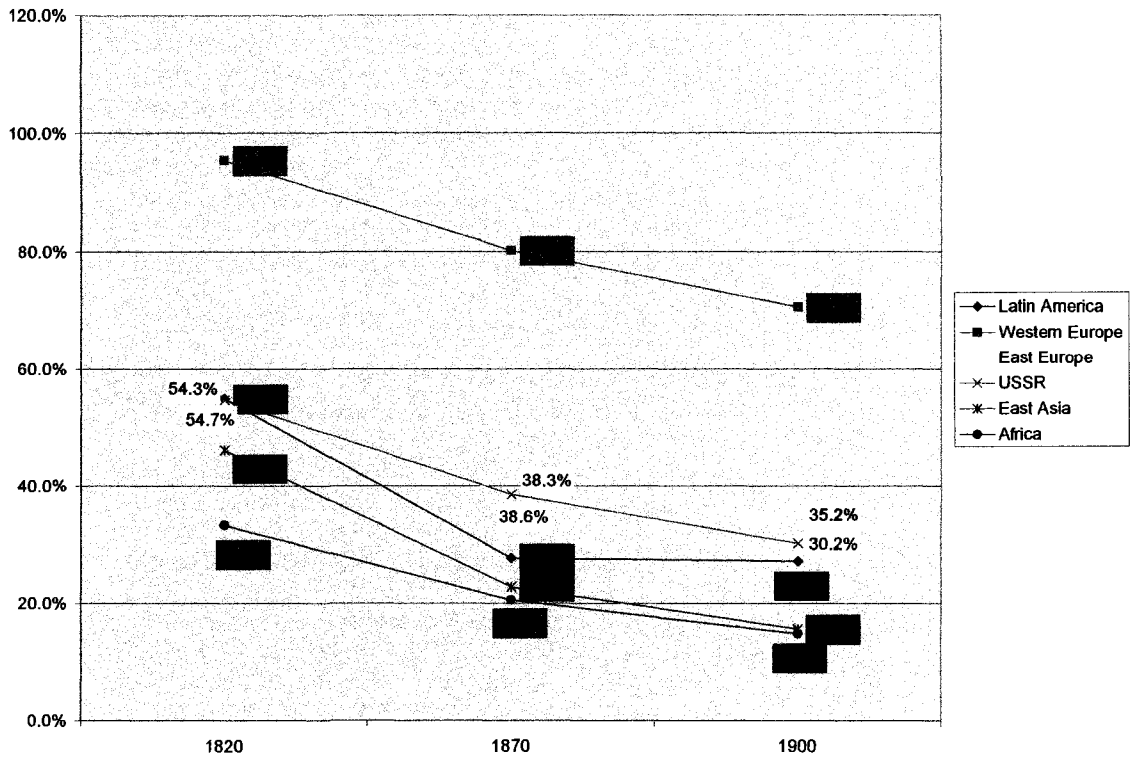
Chart 2-25
MADDISON SERIES: WORLD REGIONAL GDP/C AVERAGE ANNUAL GROWTH
1820-1900



SOURCE: Table 2-114.

Therefore, while every world region falls behind the U.S. in the 1820 through 1900 period, Latin America loses more relative ground than Europe (West and East) and the former U.S.S.R., but less than Asia and Africa. The following chart summarizes this performance.

Chart 2-26
MADDISON SERIES: WORLD REGIONAL GDP/C AS A PERCENT OF U.S. GDP/C,
1820-1900
(U.S. = 100)



SOURCE: Calculated from table 2-113.

The relative underperformance of Latin America in this period is in reality only due to the 1820 through 1870 period. During these fifty years, Latin America averages 0% in GDP/C growth, second to last ahead of only Asia at -.1%. However in the 1870 through

1900 period, Latin America jumps to the second spot in GDP/C growth at 1.68% GDP/C growth, trailing only the U.S. at 1.73%.

Therefore, Latin America underperforms every region except Asia between 1820 and 1870. However, it in turn, outperforms every region except the U.S. from 1870 through 1900. The net result of these two periods is the relative decline from 1820 through 1900 with the U.S., Europe (West and East), and the former U.S.S.R.; and a relative improvement over Asia and Africa.

Therefore, for the 19th century, Latin America's relative decline to the U.S. was primarily due to the 1820-1870 period. However, although Latin America faced serious economic and political obstacles in the 1820-1870 period, its relative decline still had as much or even more to do with the U.S. moving ahead than Latin America falling behind. Indeed every region in the world lost relative ground to the United States in the 1820-1900 period.

Latin America and world regions in the 20th century

The following tables summarize the GDP/C data and average annual compound growth rates for Latin America and world regions from 1900 through 2000.

Table 2-114
MADDISON SERIES: WORLD REGIONAL GDP/C, 1900-2000
(U.S. 1990 dollars)

	1900	2000
United States	4091	28403
Latin America	1113	5893
Western Europe	2892	19264
Eastern Europe	1438	5901
Former USSR	1237	4454
Asia	638	3807
Africa	601	1474
World	1262	6055

SOURCE: See data appendix for Maddison sources and methodology.

Table 2-115
MADDISON SERIES: WORLD REGIONAL GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1900-2000

	1900-2000
United States	1.96%
Latin America	1.68%
Western Europe	1.91%
Eastern Europe	1.42%
Former USSR	1.29%
Asia	1.80%
Africa	0.90%
World	1.58%

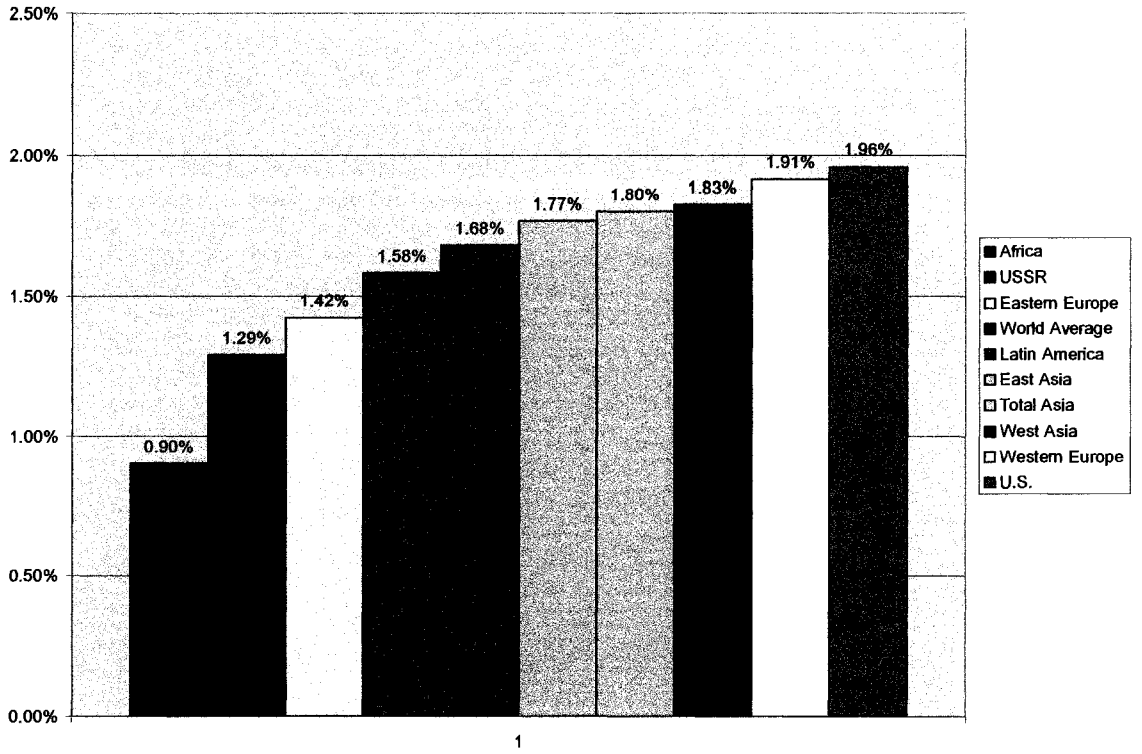
SOURCE: Calculated from table 2-115.

The United States and Latin America begin 1900 as the number one and number five regions in GDP/C respectively. The United States again outpaces all regions for the century, growing at 2%, and maintaining the number one GDP/C spot in 2000. Meanwhile, Latin America grows at 1.7%, trailing the U.S. (2%), Western Europe (1.9%), and Asia (1.8%), but ahead of the world average (1.6%), Eastern Europe (1.4%), the former USSR (1.3%), and Africa (.9%). Latin America therefore moves up one spot to number four in terms of GDP/C rankings. Actually, Latin America almost ties Eastern Europe for the number three spot, trailing it by only 8 dollars.

The following chart summarizes the performance of major world regions.

Chart 2-27

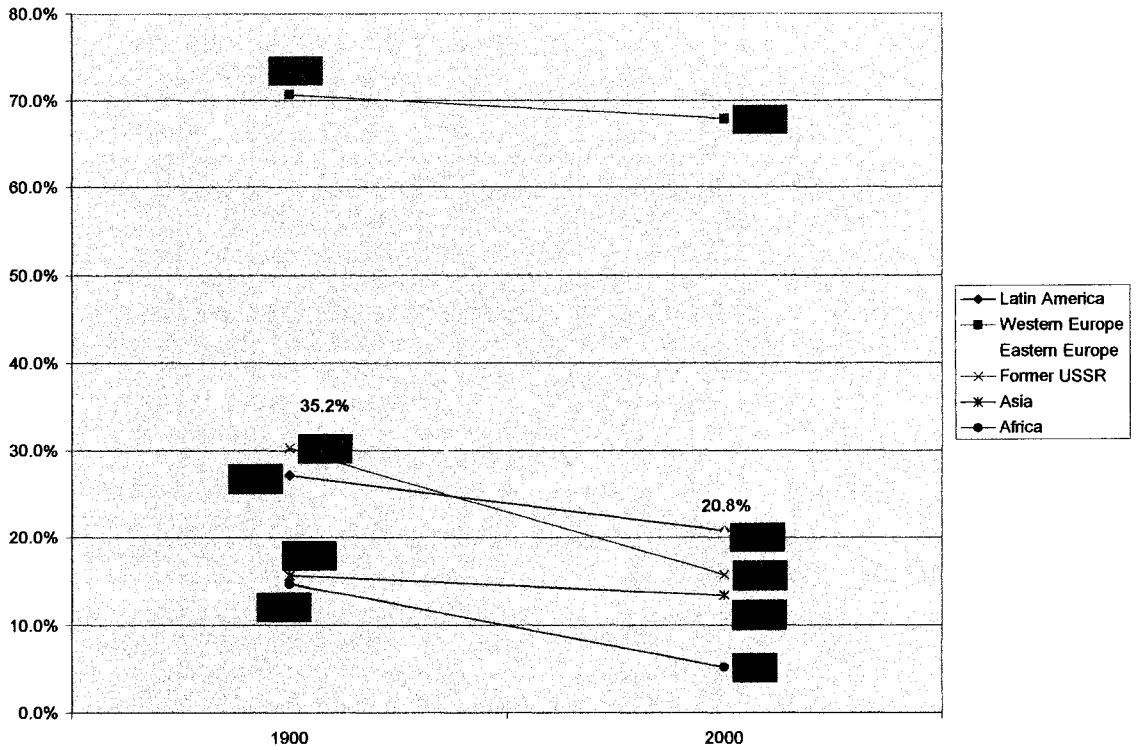
MADDISON SERIES: WORLD REGIONAL GDP/C AVERAGE ANNUAL COMPOUND GROWTH, 1900-2000



SOURCE: Table 2-115.

Again, based on these growth differentials, the GDP/C gap widens between the U.S. and every other world region as the following chart shows.

Chart 2-28
MADDISON SERIES: WORLD REGIONAL GDP/C AS A PERCENT OF U.S. GDP/C, 1900-2000
(U.S. = 100)



SOURCE: Calculated from table 2-115.

Once again the more appropriate comparison for Latin America is the world average and other world regions. While Latin America's GDP/C is beneath the world average in 1900 and 2000, it outpaces world GDP/C growth in the 20th century (Latin America 1.7%, world 1.6%) and therefore narrows the GDP/C gap. In 1900 Latin America's GDP/C was 88% of the world average, by 2000 it had come close to equaling the world average at 97% of world GDP/C.

In comparison to other world regions, Latin America also fared well. It outpaced every region except the U.S., Western Europe, and Asia. Although Asia outperforms Latin America, Latin America's GDP/C still is 155% the times of Asia's GDP/C in 2000. Therefore, in 2000, while Latin America has lost relative ground to the GDP/C leaders (U.S. and Western Europe), it ranks just behind them in GDP/C (in a virtual tie for third place with Eastern Europe), and has outpaced every other region in GDP/C growth except for Asia.

The 20th century can be further broken down into three distinct periods for Latin America: 1900-1950, 1950-1980, and 1980-2000.

Breaking the century down further provides additional insights into this overall performance. For 1900-1950, the U.S. ranks number one in GDP/C growth at 1.71%, followed by the USSR at 1.68%, and Latin America at 1.63%. East Asia (and total Asia), which will take off later in the century, actually rank last for the 1900-1950 period-with East Asia growing at only .10% (and total Asia at .23%). Therefore, during the 1900-

1950 period, Latin America, along with every world region loses relative ground to the U.S.

Again the more appropriate benchmark for Latin America would be the world average and other world regions. From 1900 through 1950 Latin America strongly outperforms the world average, growing at 1.63% compared to the world GDP/C growth rate of 1.04%. In comparison to other world regions, Latin America outperforms every region except the U.S. and the U.S.S.R.

The 1950-2000 interval marks the first time the U.S. is not first in terms of GDP/C growth: East Asia is number one at 3.47%, followed by Western Europe (2.92%), West Asia (2.36%), the U.S. (2.2%), the world average (2.13%), Eastern Europe (2.08%), Latin America (1.73%), Africa (1.01%), and the USSR (.90%). This is therefore the first period in which all of the world is not losing relative ground to the United States: Asia (both East and West) and Western Europe gain relative ground on the United States.

From 1950 through 2000, Latin America trails not only the United States, but also the world average. Latin America therefore loses ground to every major world region except Africa and the U.S.S.R.

However, in the case of Latin America, it is useful to divide this period into two: 1950 through 1980, and 1980 through 2000. During the 1950 through 1980 period, several regions outpace the United States in GDP/C growth: Western Europe (3.6%), Asia (3.5%), Eastern Europe (3.4%), the former USSR (2.8%), Latin America and the

world average (both at 2.6%), then the U.S. (2.2%), and Africa (1.8%). Therefore Latin America, and every world region except Africa, gain relative ground on the United States from 1950 through 1980.

During this period, Latin America exactly matches the world average GDP/C growth of 2.6%. In comparison to other world regions, it trails Europe (west and east), Asia, and the former U.S.S.R., but ranks ahead of the U.S. and Africa.

However, from 1980 thorough 2000, while the U.S. continues its GDP/C growth at 2.1%, Latin America's GDP/C growth declines sharply to just .4%. From 1980 through 2000, Asia is the top performer (3.2%), followed by the U.S. (2.1%), Western Europe (1.9%), the world average (1.5%), Latin America (.4%), Eastern Europe (.1%), Africa (-.2%), and the former USSR (-1.8%). Thus, it is only during the 1980 through 2000 period that Latin America falls behind the United States (from 1950 through 1980 it grew faster than the U.S.).

In the 1980 through 2000 period, Latin America also trails the world average. Therefore, Latin America matches the world from 1950 through 1980, but falls behind from 1980 through 2000. In comparison to other regions for the 1980 through 2000 period, Latin America ranks behind Asia, the U.S., and Western Europe, but ahead of Eastern Europe, Africa, and the former U.S.S.R.

Combining all these distinct periods (1900-1950, 1950-1980, and 1980-2000) gives us the overall results for the 20th century: U.S. (2%), Western Europe (1.9%), Asia

(1.8%), Latin America (1.7%), World (1.6%), Eastern Europe (1.4%), USSR (1.3%), and Africa (.9%).

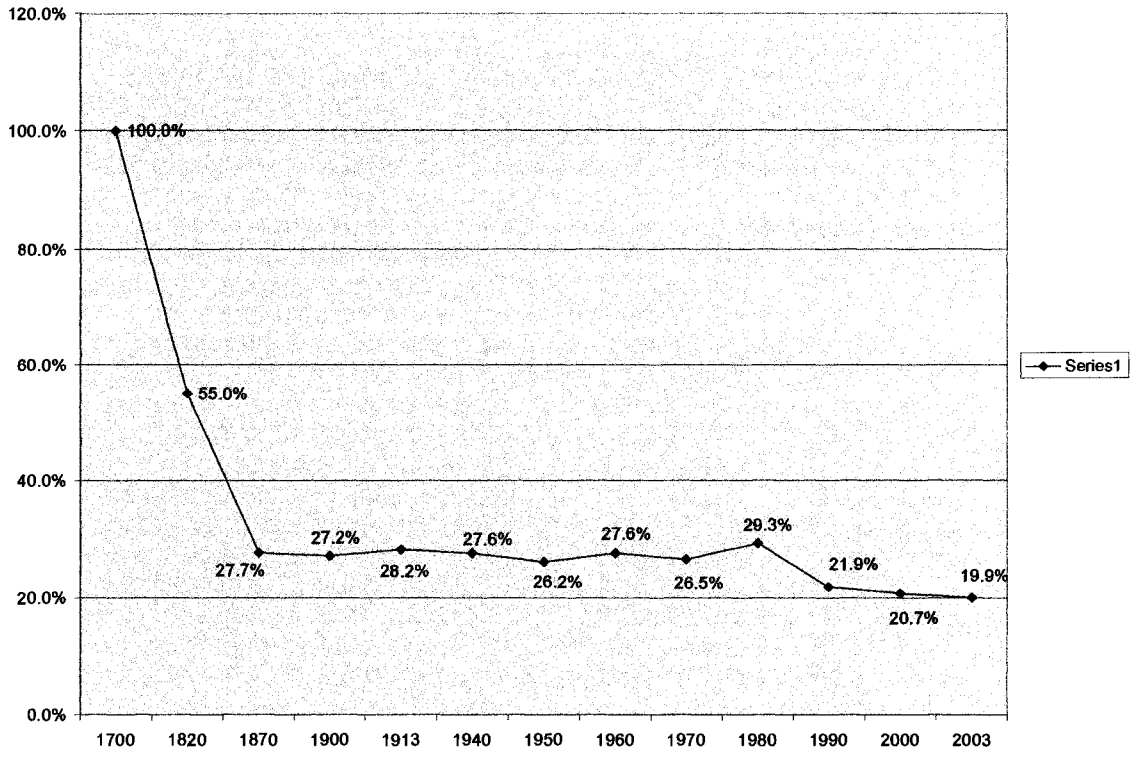
Overview

From 1700 through the post-1950 period, every major world region was falling behind the United States, many regions more so than Latin America. While the U.S. is therefore not the ideal benchmark for Latin America, the three primary periods in which the GDP/C gap widened between Latin America and the U.S. were the 1700 through 1820 period, 1820 through1870 period, and the 1980 through 2000 period.

In spite of the overall decline, from 1870 through 1980 Latin America matches, and even slightly exceeds the U.S GDP/C growth rate. Again, it is important to stress that the sole cause of the "falling behind" is not just Latin America's domestic economic and political obstacles, but also the tremendous efficiency of the U.S. The following table summarizes this performance.

Chart 2-27
MADDISON SERIES: LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C

1700-2003



SOURCE: Calculated from table 2-105.

However, though Latin America falls behind the U.S., it outperforms the world average, and most world regions for every period except for 1820-1870 and 1980-2000.

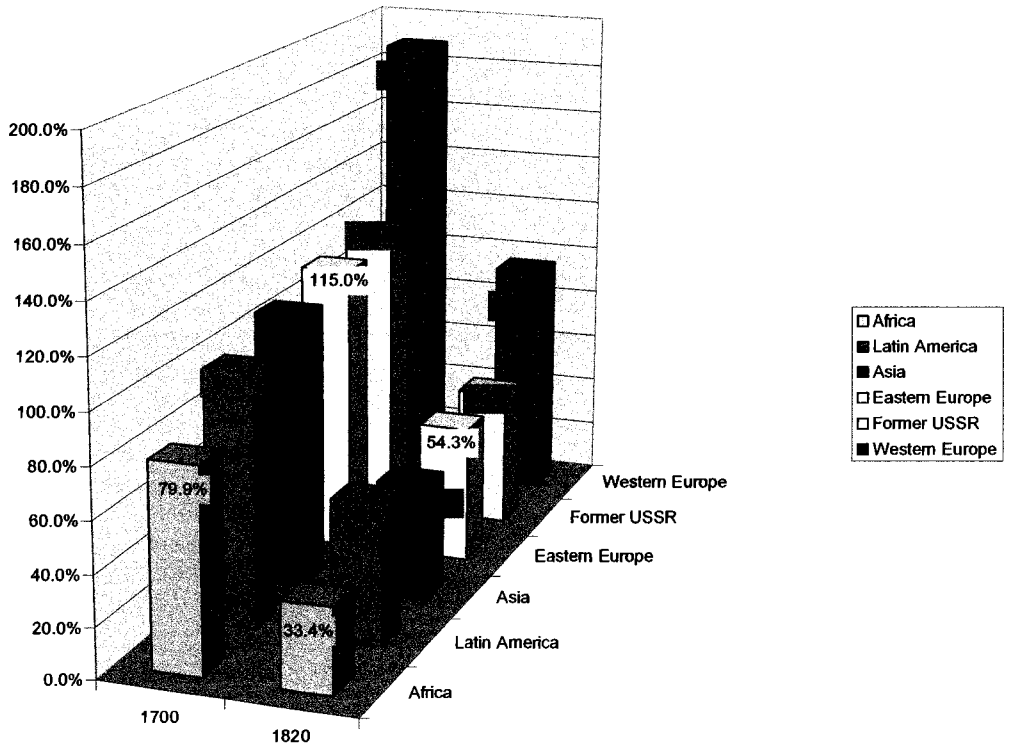
The following table summarizes world regional GDP/C performance relative to the United States for the entire 1700-2003 period. The following charts, also show world regional GDP/C as a percent of U.S. GDP/C, broken down into the 1700-1820 period, 1820-1900 period, and 1900-2000 period.

Table 2-116
MADDISON SERIES: WORLD REGIONAL GDP/C AS A PERCENT OF U.S. GDP/C, 1700-2003
(U.S. = 100)

	1700	1820	1900	1950	1970	1980	1990	2000	2003
United States	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Latin America		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Brazil		51.4%	16.6%	17.5%	20.3%	28.0%	21.2%	19.6%	19.2%
Mexico		60.4%	33.4%	24.7%	28.7%	34.0%	26.2%	25.5%	24.6%
Latin America 8		56.6%	29.5%	28.2%	28.7%	31.7%	23.6%	22.6%	21.6%
Latin America Total	100%	55.0%	27.2%	26.2%	26.5%	29.3%	21.9%	20.7%	19.9%
Western Europe	189%	95.6%	70.7%	47.9%	67.8%	71.0%	68.8%	67.8%	68.6%
East Europe	115%	54.3%	35.2%	22.1%	28.7%	31.1%	23.4%	20.8%	22.3%
Former USSR	116%	54.7%	30.2%	29.7%	37.1%	34.6%	29.7%	15.7%	18.6%
East Asia		46.1%	15.6%	7.0%	9.3%	9.9%	11.4%	12.9%	14.9%
West Asia		48.3%	22.7%	18.6%	26.6%	29.0%	21.0%	20.0%	20.3%
Total Asia	109%	46.2%	15.6%	7.5%	10.2%	10.9%	12.0%	13.4%	15.3%
Africa	80%	33.4%	14.7%	9.3%	9.0%	8.3%	6.2%	5.2%	5.3%
World Total	117%	53.0%	30.9%	22.1%	24.9%	24.3%	22.3%	21.3%	22.4%

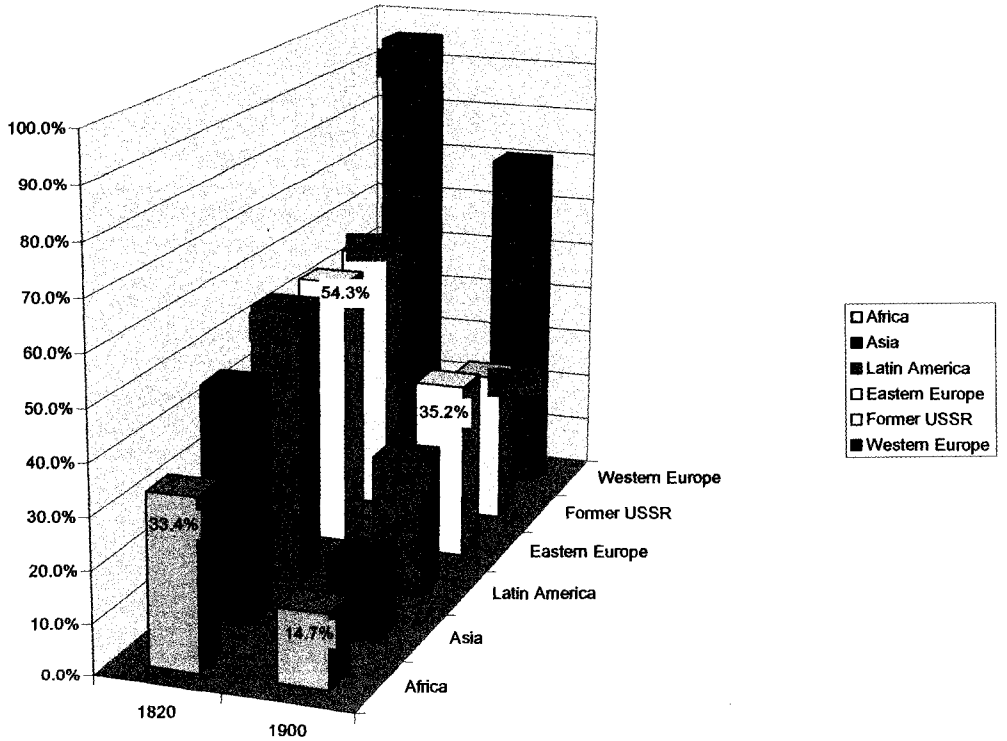
SOURCE: Table 2-105.

Chart 2-30
MADDISON SERIES: WORLD REGIONAL GDP/C AS A PERCENT OF U.S. GDP/C, 1700-1820
(U.S. = 100)



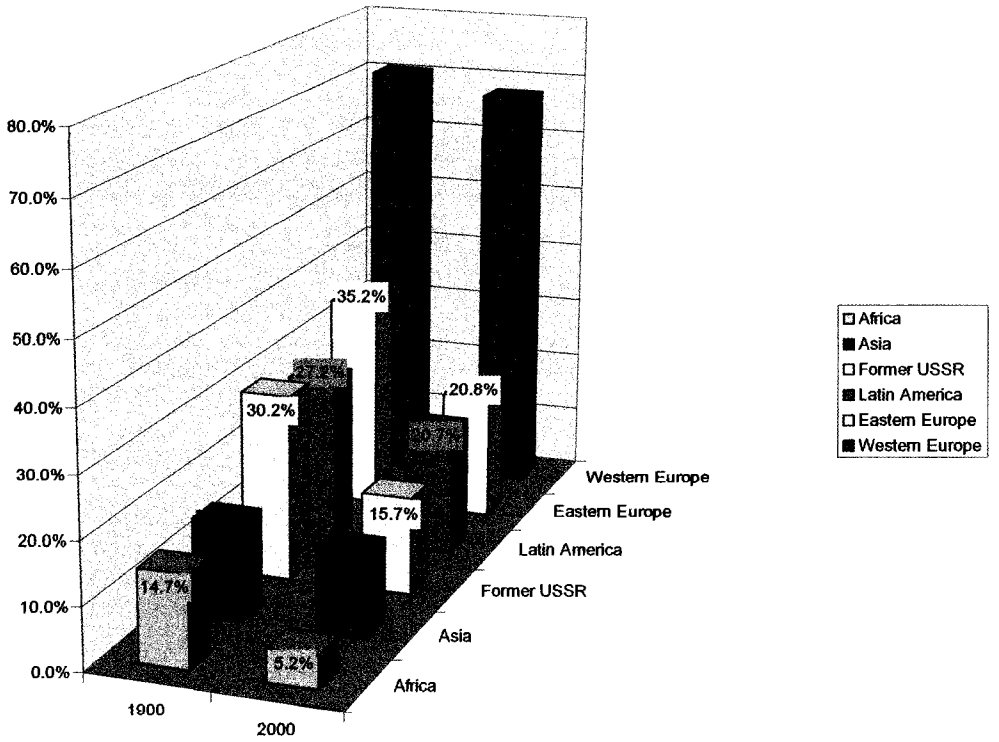
SOURCE: Calculated from table 2-105.

Chart 2-31
MADDISON SERIES: WORLD REGIONAL GDP/C AS A PERCENT OF U.S. GDP/C, 1820-1900
(U.S. = 100)



SOURCE: Table 2-105.

Chart 2-32
MADDISON SERIES: WORLD REGIONAL GDP/C AS A PERCENT OF U.S. GDP/C, 1900-2000
(U.S. = 100)



SOURCE: Table 2-105.

For the 1700 through 1820 period, every region declines relative to the United States. However, Latin America outperforms the world average and every other region except for the United States.

For the 1820 through 1900 period, every region again faces a relative decline compared to the United States. Latin America loses relative ground mostly due to the 1820 through 1870 period. From 1870 through 1900 Latin America maintains almost the same relative position to the U.S., while other world regions continue their relative decline. For the entire 1820 through 1900 period, Latin America also trails the world average (.8% world average, .6% Latin America).

During the 20th century, every world region again experienced a GDP/C decline relative the United States. As previously noted, Latin America actually gains relative ground on the U.S. during the 1900-1980 period, increasing from 27.2% of the U.S. GDP/C to 29.3%. Only West Asia, the USSR, and Western Europe managed to maintain or improve their position during these 80 years. Yet, due to its post 1980 performance, Latin America declines relative to the U.S., decreasing to 20.7% of U.S. GDP/C in 2000.

Using the more practical comparison of the world average and world regions, Latin America fares much better: Latin America underperforms the U.S., Western Europe, West and East Asia in the 20th century (mostly due to the 1980-2000 period), but outperforms the world average, the former USSR, Eastern Europe, and Africa.

In absolute terms Latin America's GDP/C levels are high relative to other world regions. Latin America begins 1900 as the region with the 5th highest GDP/C and ends 2000 as the region with the fourth highest GDP/C at $5,893 (almost tied with Eastern Europe for the number four spot, which is just 8 dollars ahead of it at $5,901). Although much attention has been paid to the huge success of East Asia, its average GDP/C is still more than $2,000 less than Latin America's in 2000 (at 3,675).

Summary/Conclusion

Overall, the GDP/C gap between the U.S. and Latin America widens in the 18th, 19th, and 20th centuries. However, from 1870 through 1980, Latin America maintains a fairly stable relative position to the U.S. of about 27%, actually improving its relative position to 29% in 1980. Again, the key periods in the widening gap are the 1700 through 1820 period, the 1820 through 1870 period, and 1980 through 2000 period.

Compared to the world average, Latin America improves its relative position from 1700 through 1820, and 1870 through 2000. The only relative decline was during the 1820 through 1870 period: in 1700, Latin America trailed the world GDP/C at only 86% of world GDP/C, in 1820 Latin America's GDP/C was ahead of the world average, (103.5% of world GDP/C), but by 1870 Latin America's GDP/C had declined to less than the world average (77%). Since then, Latin America has been gaining relative ground, and by 2000 its GDP/C nearly had matched the world average, at 97% of the world

GDP/C. Therefore, the GDP/C gap with the world average has been narrowing since 1870, and has actually narrowed overall for the entire 1700 through 2000 period.

In comparison to other world regions during the 18th century (1700 through 1820), Latin America outperforms every region except for the United States. During the 19th century, Latin America underperforms the United States, Europe (east and west), the former U.S.S.R., but outperforms Asia and Africa. Therefore, the 19th century is one of relative decline to all of Europe, the former U.S.S.R. (and the United States), but a relative gain when compared to Asia and Africa.

During the 20th century, Latin America outperforms Eastern Europe, the former U.S.S.R, and Africa, while underperforming all of Asia, Western Europe, and the United States. From 1900 through 1950, Latin America outperforms every region except the U.S. and former U.S.S.R. However, in the 1950 through 2000 period (primarily due to the 1980-2000 period), it trails every region except for the former U.S.S.R. and Africa. Thus, for the entire 20th century, Latin America improves its relative position to Eastern Europe, the former U.S.S.R., and Africa, while facing a decline in relative position to the U.S., Western Europe, and Asia (the decline primarily a product of the last 20 years the 20th century).

Section 8: Conclusion

The need for multiple series in GDP analysis

As the preceding analysis has shown (sections 2 through 6), depending on the data source, base year chosen for conversion, and exchange rate selection, answering the "simple" question of what the economic development trend has been for Latin America yields varying results.

The selection of PPP or DER changes the GDP numbers, with the PPP series yielding (often) dramatically higher results. In addition, the selection of base years can cause an even larger variance in GDP data. Although this variation is evident when examining the totals for Latin America, the differences become clearer when looking at individual countries.

To demonstrate this point, the following table shows the results for four individual countries compared to U.S. in GDP/C for 1950, using different base years and both DER and PPP exchange rates. The wide range of answers that each series gives to the same question underscores the importance of not relying on just one statistical source.

Table 2-117
GDP/C RELATIVE TO THE U.S. 1950

	Mexico/US GDP/C	Venezuela/US GDP/C	Brazil/US GDP/C	Argentina/US GDP/C
CEPAL (70) DER	10.7	18.9	6.6	20.5
OXLAD (70)	15.5	21	7.3	25.5
Hofman (80)	29	39	15.9	43
Maddison (90)	24.7	78	17.5	52.1

SOURCE: Calculated from tables 2-7, 2-66, 2-85, and 2-106.

SUMMARY OF RESULTS

The following analysis will focus on comparing the various GDP/C series presented in this chapter (as opposed to the GDP series) since average income per person is the most important measure of economic development. The summary is divided into two parts: A. Latin America, the United States, and World Regions from 1700 through 2000 utilizing the Maddison series, and B. Latin America and the U.S. in the 20th century utilizing multiple series.

A. Latin America, the United States, and World Regions (Maddison Series)

1. Latin America/United States
Did Latin America fall behind? Did the U.S. move ahead?

Yes.

When?
In three phases:

1. During the 1700-1820 period, an economic gap as measured by GDP/C was created: Latin America's GDP/C fell from 100% of U.S. GDP/C to 55%. However, an even larger gap was produced between the U.S. and the rest of the world during this period.

2. During the 1820-1870 period a combination of strong U.S. GDP/C growth, and relatively weaker Latin American growth led to a widening gap. Latin America declines from 55% of the U.S. GDP/C number to 27.7%. Latin America maintains its position at 27% (with fluctuations between 26-28%) for the next century. Then during the 1970s it gains relative ground to 29.3% of U.S. GDP/C.

3. During the 1980-2000 period, Latin America's GDP/C declines during the 1980s to 21.9%, with a slight further decline in the 1990s to 20.7%.

B. Latin America and the World Average and World Regions
How did Latin America compare fared to the world?

From 1700-1820, Latin America grows at about three times the world average (Latin America .23%, world average .07). Due to this higher growth, Latin America's GDP/C

moves ahead of the world average, starting at only 86% of the world average GDP/C in 1700, and increasing to 104% in 1820. Latin America also fares well against other world regions, outperforming every region except the U.S. and moving from 2nd to last in GDP/C rankings to third.

From 1820 through 1900 Latin America underperforms every region except Asia and Africa (notably the two largest regions). In reality, Latin America only underperforms during the 1820-1870 period, with 0 GDP/C growth, ahead of only Asia. For the 1870 through 1900 period, it grows ahead of every region except the U.S. and U.S.S.R. In the process, overall it falls from the number three spot to the number five spot.

During the 20th century Latin America outperforms every region (and the world average) except the U.S., Western Europe, and Asia. In the process it moves up to the fourth spot in GDP/C rankings, just 8 shorts of equaling Eastern Europe for the number three spot.

Therefore, for the entire 1700-2000 period, Latin America fares favorably compared to the world average and other world regions. Only during the 1820-1870 period does it trail the world average and most world regions. In every other period (1700-1820, 1870-1900, 1900-2000) it outperforms the world average and most of the major world regions and gains relative ground.

In summary, there is a widening gap between Latin America and the United States, which is a product of the 1700-1820, 1820-1870, and 1980-2000 period. However, the gap remained essentially constant from 1870 through 1980. The only recent widening of the gap was primarily due to the poor performance of the 1980s.

Because the rest of the world also faced a widening gap with the U.S. for the entire 1700-2000 period, a more appropriate comparison for Latin America is the world average and other world regions. Based on this comparison, Latin America outperforms and gains relative ground on the world average and most world regions in every period except for the 1820 through 1870 period. Therefore, in comparison to the world average and other world regions, Latin America has outperformed in terms of GDP/C.

B. Latin America in the 20th century (multiple series)

The following summary utilizes the five series for which data points are available for each decade of the 20th century. They include Thorp's 1970 PPP series, the Oxlad 1970 DER and PPP series, the Hofman 1980 PPP series, and Maddison's 1990 PPP series. These five series gives us a sample that includes both DER and PPP series, along with three different base years for comparison purposes.

Although these series do not represent the full Latin America 20, as the analysis in each chapter points out, a comparison to the full Latin America 20 shows them to be good proxies. Each series includes the following six countries: Argentina, Brazil, Chile,

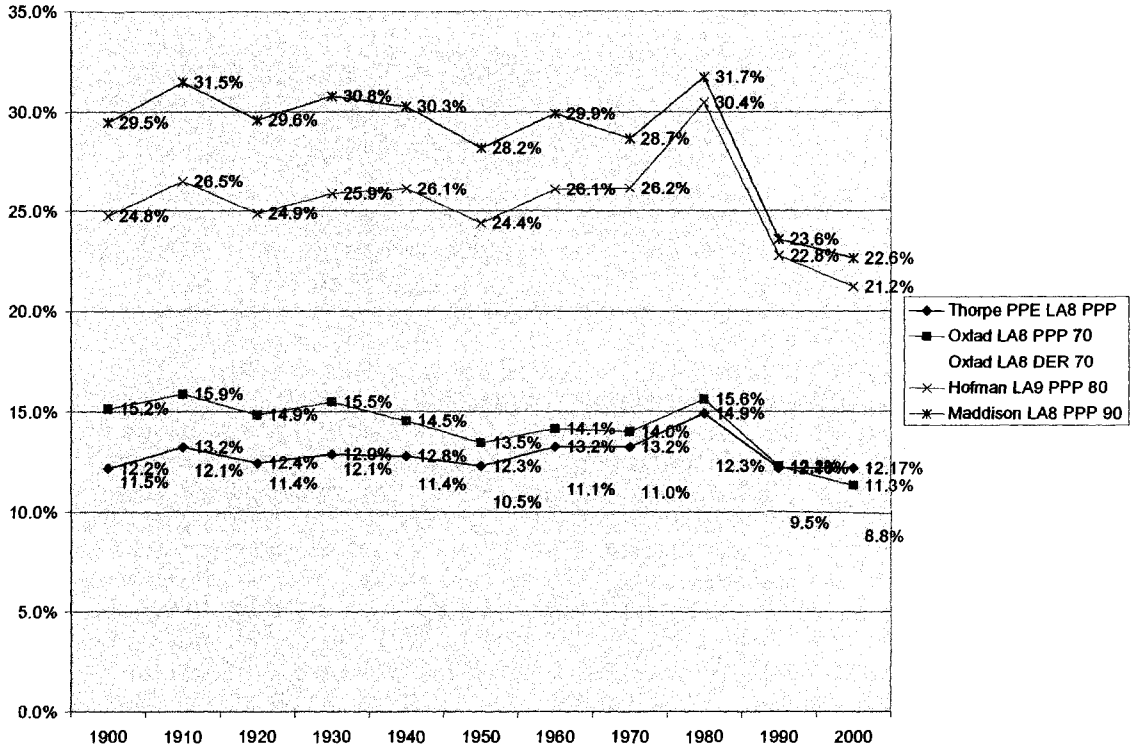
Colombia, Mexico and Venezuela. In addition to these six, each series includes 2 to 3 additional countries. The following table summarizes the countries in each series.

Table 2-118
SUMMARY TABLE: COUNTRIES INCLUDED IN SUMMARY SERIES

	Thorpe PPE 9	Oxlad 8 PPP	Oxlad 9 DER	Hofman 9	Maddison 8
Argentina	X	X	X	X	X
Brazil	X	X	X	X	X
Chile	X	X	X	X	X
Colombia	X	X	X	X	X
Mexico	X	X	X	X	X
Venezuela	X	X	X	X	X
Ecuador	X	X	X	X	
Peru	X		X	X	X
Uruguay		X	X		X
Bolivia				X	
Cuba	X				

The following chart summarizes each Latin American series as a percent of U.S. GDP/C for the 20th century. As the chart reveals, there is a wide variance in the numbers as presented by each series. In 1900 Latin America begins somewhere between 11% and 30% of U.S. GDP/C, and then ends in 2000 at somewhere between 8.8% and 22.6% of U.S. GDP/C.

Chart 2-33
SUMMARY SERIES: GDP/C AS A PERCENT OF U.S.
1900-2000



Although the percent numbers vary greatly, they all demonstrate the same general trend. From 1900-1980 Latin America mostly maintains its relative GDP/C position with the U.S. From 1980-1990 there is a sharp drop in relative GDP/C due to the lost decade. During the 1990s, there is a slight deterioration in GDP/C terms relative the U.S.

Which Series is correct?

The good news is that if we are only interested in the overall trend, we don't have to choose a particular series. Although there are large differences, each series shows the same general trend.

Yet, in this wide range of answers, which one is the closest reflection of reality? Is Latin America 8.8% of U.S. GDP/C or 22.6%? The data results to our query on the widening gap have produced quite a large gap themselves. All of the 1970 series (both DER and PPP) are lower than the 1980 series of Hofman, which in turn is lower than the Maddison series. Are these differences due to base year selection, data sources, or PPP exchange rates in 1970 as compared to 1980 and 1990, or a combination of all of these factors? A separate study would be needed to thoroughly answer these questions.

It could well be that none of these series are measuring the gap correctly. As an alternative (though perhaps unorthodox method), I propose that current dollar series be utilized to measure the gap. The logic of this method is that in any given year in our historical analysis, any given Latin American country would have compared its GDP to another countries' GDP using that year's base prices, which were logically the ones most relevant for the comparison year. Why not do the same for a long term historical series? Although such a current dollar series would make growth rate comparisons meaningless (because of the inclusion of price changes in the index), it would provide the most meaningful relative comparison-a relative comparison using both production and prices for a given year.

A current dollar series therefore would remove the many distortions that come with choosing a base year for a historical series. Furthermore, although there would be fluctuations, the exchange rate (be it DER or PPP) would also be truer in the longer term, as it is changed for each year of comparison.

The following tables provide a current dollar GDP/C series for Latin America using dollar exchange rates.

Table 2-119
IMF SERIES: LATIN AMERICA AND UNITED STATES GDP/C, 1950-2000
(CURRENT DOLLARS)

COUNTRYNAME	1950	1960	1970	1980	1990	2000
ARGENTINA	291	587	991	7,440	4,339	7,707
BOLIVIA	283	112	247	936	730	1,010
BRAZIL	275	234	441	1,943	3,113	3,461
CHILE	545	532	912	2,467	2,301	4,879
COLOMBIA	319	239	319	1,174	1,368	1,989
COSTA RICA	267	382	541	2,058	1,856	4,059
DOMINICAN REPUBLIC	122	192	329	1,216	1,030	2,491
ECUADOR	143	212	280	1,474	1,040	1,295
EL SALVADOR	218	217	286	778	939	2,091
GUATEMALA	205	252	351	1,124	860	1,727
HAITI		72	91	254	378	458
HONDURAS	164	177	279	719	626	938
MEXICO	171	338	702	2,862	3,117	5,803
NICARAGUA	0	141	236	460	638	794
PANAMA	299	369	675	1,955	2,413	3,939
PARAGUAY	195	152	253	1,429	1,248	1,412
PERU	133	197	471	1,201	1,332	2,047
URUGUAY		474	863	3,488	2,997	6,011
VENEZUELA	618	1,011	1,096	3,924	2,463	4,798
LATIN AMERICA	255	323	557	2,465	2,591	3,885
UNITED STATES	1,862	2,828	4,943	12,080	22,709	34,548

SOURCE: See data appendix for sources and methodology.

Table 2-120
IMF SERIES: LATIN AMERICA GDP AS A PERCENT OF U.S. GDP/C, 1950-2000
(CURRENT DOLLARS)

	1950	1960	1970	1980	1990	2000
Argentina	15.6%	20.7%	20.0%	61.6%	19.1%	22.3%
Bolivia	15.2%	4.0%	5.0%	7.7%	3.2%	2.9%
Brazil	14.8%	8.3%	8.9%	16.1%	13.7%	10.0%
Chile	29.3%	18.8%	18.4%	20.4%	10.1%	14.1%
Colombia	17.1%	8.5%	6.5%	9.7%	6.0%	5.8%
Costa R.	14.3%	13.5%	10.9%	17.0%	8.2%	11.7%
D. Rep.	6.6%	6.8%	6.6%	10.1%	4.5%	7.2%
Ecuador	7.7%	7.5%	5.7%	12.2%	4.6%	3.7%
El Salv.	11.7%	7.7%	5.8%	6.4%	4.1%	6.1%
Guatemala	11.0%	8.9%	7.1%	9.3%	3.8%	5.0%
Haiti		2.5%	1.8%	2.1%	1.7%	1.3%
Honduras	8.8%	6.3%	5.6%	6.0%	2.8%	2.7%
Mexico	9.2%	11.9%	14.2%	23.7%	13.7%	16.8%
Nicaragua	0.0%	5.0%	4.8%	3.8%	2.8%	2.3%
Panama	16.0%	13.1%	13.7%	16.2%	10.6%	11.4%
Paraguay	10.5%	5.4%	5.1%	11.8%	5.5%	4.1%
Peru	7.1%	7.0%	9.5%	9.9%	5.9%	5.9%
Uruguay		16.8%	17.5%	28.9%	13.2%	17.4%
Venezuela	33.2%	35.8%	22.2%	32.5%	10.8%	13.9%
Latin Am.	13.7%	11.4%	11.3%	20.4%	11.4%	11.2%
U.S.	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-119.

Comparing this series to the dollar exchange rate series, the results are more positive using the current dollars. The 1970 CEPAL series begins 1950 at only 10.5% and declines to 8.8% in 2000. As the above current dollar series shows, for 1950 Latin America (using 1950 prices and exchange rates) stood at 13.7% of U.S. GDP/C, and by 2000 had declined to 11.2% of U.S. GDP/C (using 2000 prices and exchange rates). Therefore, if the current dollars do in fact represent a truer picture, the 1970 CEPAL DER series understates Latin America's performance.

What about the PPP series? The World Development Indicators database provides current dollar GDP with PPP exchange rates. However, the series is only available beginning in 1980. The following tables present this series and calculated the current dollar PPP GDP/C as a percent of U.S. GDP/C.

Comparing the results of the PPP current dollar series to the PPP series, Hofman's series matches very closely. If the above PPP series does better reflect the "PPP reality", then it seems that Hofman's series is perhaps the most accurate, while Maddison's tends to overstate and the Oxlad PPP series very much understates Latin America's picture.

Table 2-121
WORLD DEVELOPMENT INDICATORS: LATIN AMERICA AND U.S. GDP/C, 1980-2000
(CURRENT DOLLARS PPP)

	1980	1990	2000	2005
Argentina	6,402	7,166	12,095	14,286
Bolivia	1,367	1,678	2,387	2,820
Brazil	3,687	5,288	7,154	8,587
Chile	2,527	4,688	9,132	11,940
Colombia	2,602	4,546	5,974	7,346
Costa Rica	3,461	5,115	8,170	10,192
Dominican Rep.	2,256	3,505	6,395	7,854
Ecuador	1,840	2,641	3,230	4,342
El Salvador	2,253	2,939	4,597	5,255
Guatemala	2,132	2,771	4,048	4,568
Haiti	1,514	1,743	1,619	1,648
Honduras	1,590	2,239	2,872	3,430
Mexico	4,310	6,325	9,262	10,811
Nicaragua	2,228	2,275	3,131	3,911
Panama	2,633	3,686	6,048	7,644
Paraguay	2,463	3,611	4,165	4,819
Peru	2,803	3,114	4,724	6,042
Uruguay	4,040	5,714	8,871	10,419
Venezuela	3,756	4,704	5,759	6,717
Latin America	3,623	5,039	7,208	8,598
United States	12,186	23,064	34,599	41,890

SOURCE: See data appendix for sources and methodology.

Table 2-122
WORLD DEVELOPMENT INDICATORS: LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C, 1980-2000
(CURRENT DOLLARS PPP)

	1980	1990	2000	2005
Argentina	52.5%	31.1%	35.0%	34.1%
Bolivia	11.2%	7.3%	6.9%	6.7%
Brazil	30.3%	22.9%	20.7%	20.5%
Chile	20.7%	20.3%	26.4%	28.5%
Colombia	21.4%	19.7%	17.3%	17.5%
Costa Rica	28.4%	22.2%	23.6%	24.3%
Dominican Rep.	18.5%	15.2%	18.5%	18.7%
Ecuador	15.1%	11.4%	9.3%	10.4%
El Salvador	18.5%	12.7%	13.3%	12.5%
Guatemala	17.5%	12.0%	11.7%	10.9%
Haiti	12.4%	7.6%	4.7%	3.9%
Honduras	13.1%	9.7%	8.3%	8.2%
Mexico	35.4%	27.4%	26.8%	25.8%
Nicaragua	18.3%	9.9%	9.1%	9.3%
Panama	21.6%	16.0%	17.5%	18.2%
Paraguay	20.2%	15.7%	12.0%	11.5%
Peru	23.0%	13.5%	13.7%	14.4%
Uruguay	33.2%	24.8%	25.6%	24.9%
Venezuela	30.8%	20.4%	16.6%	16.0%
Latin America	29.7%	21.8%	20.8%	20.5%
United States	100.0%	100.0%	100.0%	100.0%

SOURCE: Calculated from table 2-121.

Conclusion

It is difficult, if not impossible to select which of these series best portray Latin America's economic reality. Nevertheless, the overall trend for Latin America is clear: it has posted strong absolute economic growth, and fared well relative the world average and world regions-outpacing the world average and most world regions in every period except the 1820 through 1870 period. Meanwhile, the economic gap between Latin America and the United States, which was produced in the period 18th and 19th centuries, in fact remained fairly constant from 1870 through 1980. There was a gap, but no widening gap to speak of until 1980. The dismal performance of the 1980s led to a further widening of the economic gap (for the first time in over 110 years). In spite of this recent relative underperformance, Latin America still ranks 4th among world regions in GDP/C (nearly tied for third with Eastern Europe), ahead of the former USSR, Asia, and Africa.

CHAPTER 3

SOCIAL DEVELOPMENT IN LATIN AMERICA AND WORLD REGIONS

"Wealth is evidently not the good we are seeking; for it is merely useful and for the sake of something else."-Aristotle[1]

Section 1: Introduction

There are many shortcomings in the use of GDP as a measure of well-being. In the first place, it expressly does not attempt to measure well-being-it is merely a measure of economic activity. As discussed in the previous chapter, collection and accuracy of data, selection of base year, and selection and accuracy of exchange rates all cloud the accuracy of long-term GDP series. This is not to dismiss the importance of GDP in attainment of well-being-it clearly has a strong link to the attainment of well-being, but is only the means rather than the end.

Perhaps the most obvious critique of GDP involves the issue of distribution. Although a country may achieve a high GDP/C, the measure tells us nothing of the

[1] Aristotle, *Nicomachean Ethics*.

distribution of this income. Income distribution varies tremendously around the world, and Latin America is notorious as the world region with the highest rates of inequality. Therefore international comparisons of averages of aggregates such as GDP/C can mask serious internal distributional issues making the comparisons less meaningful.

Another critique of GDP involves what is included in GDP-only market transactions, even if negative for society as a whole. The other side of this critique is what is left out of GDP, non-market transactions, is often a sizable and valuable part of any economy-such as childcare, homecare, and other home-production activities.

Although GDP has become the most common yardstick of measuring well-being, Simon Kuznets, who is most responsible for the development of our national income measures, was fully aware of the limitations of national income. In his a report to Congress in 1934 Kuznets said "the welfare of a national (can) scarcely be inferred from a measure of national income."[2] In 1947, Kuznets added that for purposes of international comparisons among countries at different levels of development "investigators interested in quantitative comparisons will have to take greater cognizance of the aspects of economic and social life that do not now enter national income measurement; and that national income concepts will have to be either modified or partly abandoned, in favor of more inclusive measures, less dependent upon the appraisals of the market system".[3]

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[2] Simon Kuznets, 1934. "National Income, 1929-1932". 73rd US Congress, 2d session, Senate document no. 124, page 7.
[3] Simon Kuznets "National Income and Industrial Structure", p 178.

Based on these and many other critiques, economists have tried to develop alternatives to GDP such as the Measure of Economic Welfare (MEW), or Genuine Progress Indicator (GPI).

As development specialists became more aware of the need for alternate measures to GDP, many began to look to directly measure the goals of development. If our goal is to measure the well-being of societies in terms of health and education of its members, why not directly measure these items? Although there is no universal consensus on what these goals are, the most commonly cited are indicators that deal with in one way or another the health and education levels of a population.

Although direct measurement of social indicators is an improvement over GDP/C in that it directly measures desired outcomes of development, the use of social indicators also has its limitations. First, as previously mentioned, how do we determine which indicators should be measured? Second, once these indicators are chosen, how reliable is the data (though the reliability of data is also an issue for GDP). Third, once the desired indicators are chosen and data is collected, how do we analyze the results? If we look at several indicators separately, how do we determine the overall picture? Which indicators should be weighted the most?

The most common approach in treating social indicators is to combine them into a single index. The advantage of GDP is that it uses the pricing system to unify disparate production (agricultural, industrial, and services). However, in the creation of a social index, there is no logical rationale for weighting different indicators. For example, how

much weight should literacy be given relative to life expectancy, or any other social indicator? There is no clear answer.

Therefore, as we saw in our GDP series, the use of only one social index could potentially misrepresent the social development trend. Social indexes vary tremendously in the selection and range of indicators included. In addition to the variation in indicators, each social index utilizes different weightings for their indicators. The resulting differences in measurement can be substantial.

Outline of the chapter

To examine the performance of Latin America in terms of social indicators, this chapter examines the three most prominent social indexes: the Social Opportunity Index, the Physical Quality of Life Index, and the Human Development Index. For each of these indexes, I present an explanation of the construction of the index, present a long-term historical data series for Latin America, compare Latin America's social performance to the United States (and in the case of the PQLI and HDI to the world average and other world regions), and finally analyze the real drivers of each index.

The analysis of these three different social indexes will help us to determine the state of social development in Latin America, and to compare its performance to the United States (and other world regions) to determine if there is a widening or narrowing of the social development gap.

Section 2: The Social Opportunity Index

In the early 1970s Dr. James Wilkie began to search for a method to measure the "social gap" between Latin America and the United States. The result was the first social index for measuring change in Latin America[1], the Social Indicator Profile (SIP), later renamed the Health, Education, and Communication Index. Indeed, the Health, Education, Communication Index (HEC) appears to be the first index designed to measure social change for any region of the world. The HEC was first published in 1974 by the UCLA Latin American Center in *Statistics and National Policy*[2]. In a section called "Understanding Statistical Images", Dr. Wilkie noted the following:

> Because basic research has not been undertaken, whole developmental thrusts in Latin America are based upon images such as the desperate need to close the so-called widening economic gap between Latin America and the United States. And when social statistics are put forth to show Latin America's widening social gap, all too often it is without testing those statistics to see if today's baseline data yield a historical trajectory that would support such a hypothesis.

Contradicting the prevailing images of the time, Dr. Wilkie went on to state, "rather than widening, the social gap between Latin America and the United States is indeed

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[1] The Poverty Index (also developed by Dr. Wilkie) was a predecessor of the HEC, however, it was solely applied to Mexico. *Mexican Revolution: Federal Expenditure and Social Change*

[2] James Wilkie, *Statistics and National Policy* (Los Angeles: UCLA Latin American Center, 1974).

narrowing." Presenting data for 12 social indicators (the index components are discussed below) for 20 Latin American countries and the United States for 1950, 1960, and 1970, Dr. Wilkie showed that the gap had actually decreased 25.9% during the 1950s, and 24.5% during the 1960s!

In 1977, Drs. Wilkie and Nilsson projected the HEC Index back to 1940 in an article published in *Quantitative Latin American Studies: Methods and Findings*[3]. The results of the new HEC series, spanning 30 years of data were also presented in 1979 at a University of Florida conference in a presentation entitled "North-South Social Equality in the Americas: The Myth of the Widening Gap, 1940-1970."[4]

During the 1980s, Dr. Wilkie began work on updating the index for 1980, which soon merged into an update project for the 1990 data. During these years the data was updated (though not published) thanks to contributions Dr. Olga Magdalena Lazín, Dr. James Plater, and Dr. Rodney Anderson.

In 2000, I joined the "team" and picked up the baton to continue the update through 2000. The resulting update of the Health, Education, and Communication Index was published in 2001 in SALA 37, with newly revised data for 1990 and data for "2000" (most of which was 1997/1998 as this was the most recent data available). The index was also renamed the Social Opportunity Index (SOI).

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[3] James Wilkie and Maj-Britt Nilsson, "Projecting the HEC (Health, Education, and Communication) Index for Latin America Back to 1940, Quantitative Latin American Studies, Methods and Findings (Los Angeles: UCLA Latin American Center Publications, University of California, 1977).
[4] "North-South Social Equaltiy in the Americas: The Mythg of the Widening Gap, 1940-1970", August 1979.

In the following sections I have updated the Social Opportunity Index through 2005. This new update includes revisions to previous data, new data for 2000, and new data for 2005. In addition, some revisions have been made to the index calculations and presentation to facilitate comprehension and to allow for easy comparison with other indices presented in this chapter. The Social Opportunity Index was originally constructed specifically to measure the Latin America-United States gap. Therefore, the ideal score as originally calculated was "0" which signified full equality with the United States (no gap). I modified the index to where the top score is now 100 to allow for comparisons to our other social indexes which also use 100 as a top score and because readers expect to see improvements reflected in an increase in total score.

The Social Opportunity Index Indicators

The SOI consists of 12 indicators in the areas of health, education, and communication as follows:

Health

1. Life Expectancy
2. Infant mortality rate
3. Persons per hospital bed
4. Persons per physician
5. Persons per dentists

Education

6. Literacy rate for population age 15 and over

7. Share of primary school-age population enrolled in primary school

8. Share of secondary school-age population enrolled in secondary school

9. Share of all students enrolled at tertiary level as a percent of tertiary school-age group

Communication

10. Newspaper circulation, copies per 1,000 persons.

11. Number of telephones per 100 persons

12. Number of persons per motor vehicle in use

There is no explicit weighting for the indicators: each one is 1/12 of the total index value. However, there is an implicit weighting given that the majority of the indicators are those in health (5), followed by education (4), and communication (3). In addition, although all indicators have the same weighting, there is also an implicit weighting in the amount of change required in each indicator to effect one unit of change in the HEC index. Dr. Denslow of the University of Florida Department of Economics made note of these implicit weightings in a paper which reviewed Wilkie's HEC index in 1979[5].

[5] David Denslow "A Note on Wilkie's Health-Education-Communication Index for Latin America", paper not published.

Another unique feature of the Social Opportunity Index is that it was designed specifically to answer the question of whether Latin America is falling behind the United States. Most social indices set a maximum and minimum value for each indicator, and a final index value is calculated for each country, typically one a scale of 0 to 1. From there comparisons can be made amongst countries based on their index score. However, the SOI has its comparison built into the final value. Each country of Latin America's indicator value is calculated as a percent of the United States value. For example, if a country has a value of 85 in Life Expectancy, that means its average life expectancy is 85% of the United States. Therefore, the total SOI numbers directly denote Latin America's performance in these 12 indicators relative to the United States.

Is Latin America falling behind in the SOI?

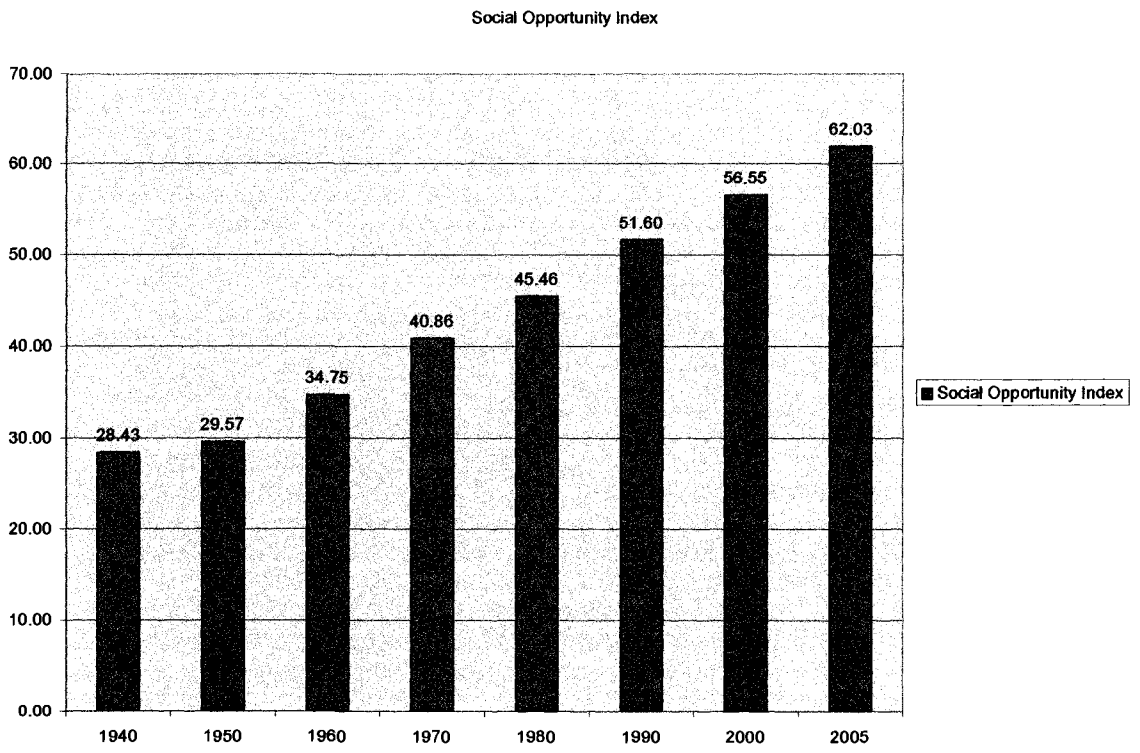
Latin America has narrowed the gap substantially as measured by the SOI. As the following table and graph show, Latin America began 1940 at only 28% of the "social level" of the United States. By 2000 it had doubled its relative position, achieving a value of 56% of the United States. The improvements have continued since 2000, with a further increase to 62% of the United States score by 2005.

Table 3-1
SOCIAL OPPORTUNITY INDEX, 1940-2005
(100=Latin American equality with the U.S.)

	1940	1950	1960	1970	1980	1990	2000	2005
Latin America	**28.43**	**29.57**	**34.75**	**40.86**	**45.46**	**51.60**	**56.55**	**62.03**
Argentina	53.19	53.99	61.15	69.71	65.09	72.65	80.10	84.17
Bolivia	16.79	19.01	22.67	31.01	34.06	37.00	46.78	48.87
Brazil	24.93	26.45	31.57	38.28	45.33	51.44	58.61	69.51
Chile	36.39	38.73	43.08	46.87	46.43	56.01	65.25	66.46
Colombia	22.36	26.77	29.42	35.85	37.15	43.96	52.27	57.34
Costa Rica	30.28	34.92	38.71	45.35	50.00	54.93	55.10	57.49
Cuba	40.20	39.26	45.58	46.42	60.90	79.48	92.45	99.34
Dominican Republic	19.28	21.90	26.02	32.32	33.41	40.39	57.52	59.68
Ecuador	19.29	23.87	28.78	33.37	44.26	50.75	50.92	52.21
El Salvador	19.86	19.44	23.76	28.63	29.89	38.04	49.66	52.67
Guatemala	15.62	17.51	19.29	24.20	26.37	29.45	34.39	37.24
Haiti	11.33	10.26	11.78	13.42	13.94	15.24	17.68	18.61
Honduras	16.70	16.79	20.27	26.66	29.44	33.19	37.59	38.68
Mexico	25.55	24.47	32.99	39.64	47.30	53.20	51.18	53.68
Nicaragua	19.07	20.14	24.26	29.88	31.22	32.63	35.76	39.40
Panama	32.68	32.87	35.95	40.97	47.03	53.50	56.15	58.01
Paraguay	24.77	30.83	34.06	38.41	39.06	38.22	41.70	43.02
Peru	22.19	23.95	30.03	39.30	42.02	45.87	46.52	47.87
Uruguay	54.99	58.73	59.02	63.87	71.53	85.13	92.91	92.66
Venezuela	24.38	29.17	35.77	44.03	47.45	54.57	63.39	65.73

SOURCE: See data appendix for calculations.

Chart 3-1
Social Opportunity Index, 1940-2005
(100=Latin America equality with the U.S.)



SOURCE: Table 3-1.

It is important to remember that, Latin America's real performance is even stronger than the above graph and tables reflect because a comparison to the United States is built into the index. For each decade the bar is "reset" so to speak, because the United States is also progressing in these social indicators. Therefore, the improvements shown in the SOI index are in addition to whatever progress the United States has made.

Overall, Latin America improved its position relative to the United States by 118% over the 1940-2005 period-an average annual compound rate of 1.21%. This is an average annualized improvement of 1.21% above whatever improvements the U.S. has made. If Latin America continues this pace, it will achieve full "social equality" with the United States as measured by the SOI in 2045! Over the last 5 years, Latin America has actually increased its average annual improvement to a rate of 1.87%, the highest rate during the 1940-2005 period. If this trend continues, parity will be reached even sooner.

The following tables give the percentage SOI increase, and average annual compound growth rate for Latin America as a whole and the individual countries:

Table 3-2
SOCIAL OPPORTUNITY INDEX (SOI) PERCENTAGE INCREASE, 1940-2005

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	2000-2005	1940-2005
Latin America	**4.0%**	**17.5%**	**17.6%**	**11.3%**	**13.5%**	**9.6%**	**9.7%**	**118.2%**
Argentina	1.5%	13.3%	14.0%	-6.6%	11.6%	10.3%	5.1%	58.2%
Bolivia	13.2%	19.3%	36.8%	9.8%	8.6%	26.4%	4.5%	191.1%
Brazil	6.1%	19.3%	21.2%	18.4%	13.5%	13.9%	18.6%	178.8%
Chile	6.4%	11.2%	8.8%	-0.9%	20.6%	16.5%	1.9%	82.6%
Colombia	19.7%	9.9%	21.9%	3.6%	18.3%	18.9%	9.7%	156.5%
Costa Rica	15.3%	10.9%	17.1%	10.3%	9.9%	0.3%	4.3%	89.9%
Cuba	-2.3%	16.1%	1.9%	31.2%	30.5%	16.3%	7.4%	147.1%
Dominican Republic	13.6%	18.8%	24.2%	3.4%	20.9%	42.4%	3.8%	209.6%
Ecuador	23.7%	20.5%	15.9%	32.6%	14.7%	0.3%	2.5%	170.6%
El Salvador	-2.1%	22.2%	20.5%	4.4%	27.3%	30.5%	6.1%	165.2%
Guatemala	12.1%	10.2%	25.4%	9.0%	11.7%	16.8%	8.3%	138.4%
Haiti	-9.4%	14.8%	14.0%	3.9%	9.3%	16.0%	5.3%	64.3%
Honduras	0.5%	20.7%	31.5%	10.5%	12.7%	13.2%	2.9%	131.7%
Mexico	-4.2%	34.8%	20.2%	19.3%	12.5%	-3.8%	4.9%	110.1%
Nicaragua	5.6%	20.5%	23.1%	4.5%	4.5%	9.6%	10.2%	106.6%
Panama	0.6%	9.4%	14.0%	14.8%	13.7%	5.0%	3.3%	77.5%
Paraguay	24.5%	10.5%	12.8%	1.7%	-2.2%	9.1%	3.2%	73.7%
Peru	8.0%	25.4%	30.9%	6.9%	9.2%	1.4%	2.9%	115.8%
Uruguay	6.8%	0.5%	8.2%	12.0%	19.0%	9.1%	-0.3%	68.5%
Venezuela	19.6%	22.6%	23.1%	7.8%	15.0%	16.1%	3.7%	169.6%

SOURCE: Calculated from Table 3-1.

Table 3-3
SOCIAL OPPORTUNITY INDEX AVERAGE ANNUAL COMPOUND GROWTH RATE, 1940-2005

	1940-50	1950-60	1960-70	1970-80	1980-90	1990-2000	2000-2005	1940-2005
Latin America	**0.40%**	**1.63%**	**1.63%**	**1.07%**	**1.27%**	**0.92%**	**1.87%**	**1.21%**
Argentina	0.15%	1.25%	1.32%	-0.68%	1.10%	0.98%	0.50%	0.71%
Bolivia	1.25%	1.78%	3.18%	0.94%	0.83%	2.37%	0.44%	1.66%
Brazil	0.59%	1.78%	1.95%	1.71%	1.27%	1.31%	1.72%	1.59%
Chile	0.63%	1.07%	0.85%	-0.09%	1.89%	1.54%	0.18%	0.93%
Colombia	1.82%	0.95%	2.00%	0.36%	1.70%	1.75%	0.93%	1.46%
Costa Rica	1.44%	1.04%	1.59%	0.98%	0.95%	0.03%	0.43%	0.99%
Cuba	-0.24%	1.50%	0.18%	2.75%	2.70%	1.52%	0.72%	1.40%
Dominican Republic	1.28%	1.74%	2.19%	0.33%	1.91%	3.60%	0.37%	1.75%
Ecuador	2.15%	1.89%	1.49%	2.87%	1.38%	0.03%	0.25%	1.54%
El Salvador	-0.21%	2.03%	1.88%	0.43%	2.44%	2.70%	0.59%	1.51%
Guatemala	1.15%	0.97%	2.29%	0.86%	1.11%	1.56%	0.80%	1.35%
Haiti	-0.98%	1.39%	1.32%	0.38%	0.90%	1.49%	0.52%	0.77%
Honduras	0.05%	1.90%	2.78%	1.00%	1.20%	1.25%	0.29%	1.30%
Mexico	-0.43%	3.03%	1.85%	1.78%	1.18%	-0.39%	0.48%	1.15%
Nicaragua	0.55%	1.88%	2.10%	0.44%	0.44%	0.92%	0.97%	1.12%
Panama	0.06%	0.90%	1.32%	1.39%	1.30%	0.49%	0.33%	0.89%
Paraguay	2.21%	1.00%	1.21%	0.17%	-0.22%	0.88%	0.31%	0.85%
Peru	0.77%	2.29%	2.73%	0.67%	0.88%	0.14%	0.29%	1.19%
Uruguay	0.66%	0.05%	0.79%	1.14%	1.76%	0.88%	-0.03%	0.81%
Venezuela	1.81%	2.06%	2.10%	0.75%	1.41%	1.51%	0.36%	1.54%

SOURCE: Calculated from Table 3-1.

Social Opportunity Index Health and Education (SOI-HE)

One possible critique of the SOI could be the inclusion of the three communication items: newspaper circulation (copies per 1,000 persons), telephones per 100 persons, and motor vehicles per person. Although these items are arguably of significance to "well-being", they reflect more of the social infrastructure of society whereas a "pure" social indicator some may argue ought to relate to the intrinsic well-being and capabilities of a person. I therefore have calculated a "pure" social version of the SOI which excludes the communication indicators. This resulting alternate version of the SOI therefore contains nine indicators: the 5 health and 4 education indicators.

Latin America's performance in the Health and Education version of the SOI (SOI-HE) is presented in the following table (3-4). In the SOI-HE, Latin America starts and finishes at a higher level than the full index: it begins in 1940 at 34.5% of the U.S. and increases to 74% of the United States value in 2000, compared to the lower starting and ending point of the full index at 28.4% and 62% respectively. The percent improvement for the SOI-HE is 115% compared to the 118% for the full SOI.

Table 3-4
SOI INDEX: HEALTH AND EDUCATION ONLY, 1940-2005

	1940	1950	1960	1970	1980	1990	2000	2005
SOI (health, education)	34.51	36.53	42.69	50.32	55.16	62.62	67.97	74.18
Social Opportunity Index	28.43	29.57	34.75	40.86	45.46	51.60	56.55	62.03

SOURCE: See data appendix for calculations.

Therefore, the SOI full index inclusion of the three communication items lowers the initial starting and ending spot for the index, but raises the relative improvement slightly. However, the difference between the full index performance of 118% and the SOI-HE of 115% is very small, which tells us that the inclusion of the communication items does not greatly affect (or distort) the health and education average of the index were they to be taken alone as is the case in the SOI-HE.

Another possible critique of the SOI is that some of the indicators are averages, meaning that it is possible for one member of society to have a large number of these items (or exclusive access), raising the average, without other members of society benefiting.

Because of the distributive distortions these indicators could mask, Dr. Wilkie created a separate index, the "All-Individual Index" which removed any item that was not

calculated for all individuals. The resulting index included only five indicators: life expectancy, infant mortality, literacy, primary enrolment, and secondary enrolment.

The following table shows the performance of this "All-Individual Index" (SOI-AI). The SOI-AI begins at a higher initial starting point than the regular SOI or SOI Health Education, at 43%-about 15 points higher than the other indices. It also finishes at a higher mark of 77%, also higher than the other two indices-it finishes 15 points ahead of the regular SOI (the same absolute margin as at their start), but only about 5 points ahead of the SOI Health Education in absolute terms. However, in percentage terms, the SOI-AI improves only 80%, much lower than either the SOI full index improvement of 118% or the SOI Health and Education improvement of 115%.

TABLE 3-5
SOI ALL INDIVIDUAL INDEX, 1940-2005

	1940	1950	1960	1970	1980	1990	2000	2005
Social Opportunity Index	28.43	29.57	34.75	40.86	45.46	51.60	56.55	62.03
SOI All Individual	42.91	45.28	50.06	59.54	61.34	64.44	74.11	77.11

SOURCE: See data appendix for calculations.

Therefore, while all three versions of the SOI show improvement for Latin America, there are some distinctions. The SOI-AI starts in 1940 at the highest level, followed by the SOI-HE, then the full SOI index; the same ranking order exists in 2005.

In terms of the size of the social gap, the SOI therefore shows the largest gap, followed by the SOI-HE, and then the SOI-AI showing the smallest gap.

However, in terms of improvement the rankings are reversed. The full SOI index which shows the largest starting and ending social gap improves the most, increasing 118%. The SOI-HE which shows the second largest starting gap improves just slightly less at 115%. Meanwhile, the SOI-AI which is the shows the smallest social gap (both in 1940 and 2005), improves the least, increasing only 80%.

Therefore, if one is mostly concerned about the absolute size of the social gap, the SOI-AI is the most "optimistic"-giving the smallest starting and ending social gap. However, this same index is the most "pessimistic" in terms of narrowing of the gap, improving only 80%. This is in direct contrast to the full SOI index which is the most "pessimistic" in terms of the size of the initial gap (starting with the lowest score), yet the most "optimistic" in terms of reducing the gap, improving 118%.

In spite of these distinctions, the most important fact is that all of the indexes show a narrowing of the social gap. Whether one chooses the full SOI (improving at 118%), or SOI-HE (improving at 115%), or the SOI-AI (improving at 80%), the social gap between Latin America and the U.S. is narrowing substantially.

The Social Opportunity Index "behind the scenes"

An important question to ask of any index is what is really being measured? In the case of the SOI, Latin America has improved from 28% to 62%. What is driving this performance?

A first step to answer this question is to break the index into its three theme areas (health, education, communication), along with their respective indicators and examine the performance in each of these areas. The following table gives an overview of the total index performance, along with the three core areas.

TABLE 3-6
SOI: HEALTH, EDUCATION, COMMUNICATION (12 COMPONENTS), 1940-2005
(100=Latin American equality with the U.S.)

	1940	1950	1960	1970	1980	1990	2000	2005
HEALTH	**37.88**	**40.29**	**46.78**	**49.93**	**54.40**	**65.89**	**65.83**	**73.83**
Life Expectancy	62.98	75.13	81.44	85.33	87.98	91.35	93.27	93.93
Infant Mortality	35.40	31.43	28.41	22.43	18.82	19.18	24.43	26.69
Doctors	34.77	30.92	55.48	59.44	59.88	75.51	69.16	79.03
Dentists	31.63	31.19	38.09	46.99	58.71	92.97	84.58	109.18
Beds	24.63	32.79	30.49	35.46	46.63	50.43	57.70	60.34
EDUCATION	**30.30**	**31.82**	**37.58**	**50.82**	**56.10**	**58.53**	**70.64**	**74.62**
Primary	54.71	50.84	62.91	92.25	90.02	89.83	97.26	100.32
Secondary	10.73	9.67	11.02	24.14	29.69	36.47	66.17	73.62
Tertiary	5.01	7.42	9.88	13.34	24.50	22.45	29.71	33.55
Literacy	50.75	59.35	66.49	73.54	80.18	85.36	89.42	91.00
COMMUNICATION	**10.17**	**8.70**	**10.93**	**12.47**	**16.36**	**18.53**	**22.31**	**25.56**
News	21.14	17.60	23.53	25.21	30.42	33.24	32.22	32.15
Phones	6.44	4.98	4.98	5.12	9.31	11.02	21.11	29.82
Motor Vehicles	2.93	3.51	4.28	7.07	9.33	11.33	13.59	14.72
SOI	**28.43**	**29.57**	**34.75**	**40.86**	**45.46**	**51.60**	**56.55**	**62.03**

SOURCE: See data appendix for calculations.

Table 3-7 gives the total change for each of the 12 indicators (its 2005 value minus its 1940 value) and its explicit weighting in the index (each indicator is 1/12). Multiplying these two numbers together gives us each indicator's contribution to the total index change of 33.6 (Total SOI Index value in 2005 minus total SOI index value in 1940).

Table 3-7
SOI: CONTRIBUTION OF EACH INDICATOR TO TOTAL SOI INDEX ABSOLUTE CHANGE, 1940-2005

(The absolute change of each individual indicator listed in Column 2 x its weighting in Column 3, gives the amount of change the indicator contributed to the overall SOI index change in Column 4)

1. Indicator	2. Absolute change	3. Weighting	4. Contribution to SOI total Index change
Health Index	**35.95**	**5/12**	**14.979164**
Life Expectancy	30.95	1/12	2.5791656
Infant Mortality	-8.71	1/12	-.725833
Doctors	44.26	1/12	3.6883318
Dentists	77.55	1/12	6.4624974
Beds	35.71	1/12	2.9758321
Education Index	**44.32**	**4/12**	**14.773318**
Primary	45.61	1/12	3.8008318
Secondary	62.89	1/12	5.2408312
Tertiary	28.54	1/12	2.3783323
Literacy	40.25	1/12	3.3541653
Communication Index	**15.39**	**3/12**	**3.8475**
News	11.01	1/12	.9174996
Phones	23.38	1/12	1.9483325
Motor Vehicles	11.79	1/12	.9824996
SOI	**33.6**	**12/12**	**33.6**

SOURCE: Calculated from Table 3-6.

As the above table shows, the total change for the SOI index was 33.6 points. This absolute improvement was produced mostly by the underlying change in health-contributing 14.98 points to the index change; education was the next largest contributor to the index change, contributing 14.77 points; finally the communication indicators produced 3.85 points of the total index change (see column 4 in table 3-7).

At a first glance, the contributions seem to make sense-health accounts for most of the change because there are five indicators (41 2/3% of the index), education second with 4 indicators (33 1/3% of the index), and communication last with three indicators (25% of the index). Of course, the number and weighting of the 12 individual indicators is only part of the equation for the total change in the SOI. The other key component is the percentage improvement for each indicator.

The following table (table 3-8) shows the percentage change for each of the 12 components of the SOI (column 2), and their percent contribution to the SOI total change (column 4). Although one would expect their percent contribution change to the SOI to be their own percent improvement times their explicit weighting this is not the case due to a weighting bias discussed below. Instead, column 4 is calculated by taking the individual indicator absolute change and dividing it by the total SOI index absolute change of 33.6.

Table 3-8
SOI INDIVIDUAL INDICATORS PERCENT CHANGE AND CONTRIBUTION TO TOTAL INDEX PERCENT CHANGE

1. Indicator	2. Percentage Change	3. Indicator index change	4. Contribution to percentage change in SOI (indicator index change in column 2 divided by 33.6)
Health Index	**94.92%**	**14.979164**	**44.58%**
Life Expectancy	49.28%	2.5791656	7.67%
Infant Mortality	-24.60%	-.725833	-2.16%
Doctors	127.33%	3.6883318	10.98%
Dentists	245.16%	6.4624974	19.23%
Beds	145.03%	2.9758321	8.86%
Education Index	**146.29%**	**14.773318**	**43.97%**
Primary	83.37%	3.8008318	11.31%
Secondary	586.12%	5.2408312	15.60%
Tertiary	570.23%	2.3783323	7.08%
Literacy	79.30%	3.3541653	9.98%
Communication Index	**151.40%**	**3.8475**	**11.45%**
News	52.11%	.9174996	2.73%
Phones	363.26%	1.9483325	5.80%
Motor Vehicles	402.18%	.9824996	2.92%
Social Opportunity Index	**118.22%**	**33.6**	**100%**

SOURCE: Calculated from Table 3-6.

So even though health only improved by 94.92% and is 41 2/3% of the index, it generated most of the change in the index (14.98), accounting for 45% of the change. Education has just a slighter weighting than education, representing 33 1/3 of the index, and posted a very strong improvement of 146%. However, even with this strong improvement it still accounted for less of the change in the index than health (44%). Finally, communication had the greatest overall improvement at 151 %, and a weighting of 25%, and ended up contributing only 11% to the total change.

As these numbers show, it is not just weighting of the indicators and percentage improvement of each indicator that moves the total index. If this were the case, the total SOI change would be 129% (taking the weighted average of percent improvement for each indicator) not 118% as the following table shows (table 3-9).

Table 3-9
SOI HYPOTHETICAL PERCENT CHANGE IF PERCENT IMPROVEMENT OF EACH INDICATOR WERE MULTIPLIED BY ITS EXPLICIT WEIGHTING (column 2 times column three gives hypothetical SOI improvement if individual indicator percent change and weighting were the only factors in the total SOI calculation)

1. Indicator	2.Percentage Change	3. Weighting	4. Hypothetical contribution to total percent change in SOI
Health Index	94.92%	44 2/3%	42.40%
Education Index	146.29%	33 1/3%	48.76%
Communication Index	151.4%	25%	37.85%
SOI	**118.22%**	100%	**129.01%**

SOURCE: Calculated from tables 3-7 and 3-8.

Starting base

So why is it that the explicit weighting and percentage improvement are not the primary instigators of change for the SOI? Because the real driver of change for the index is the total absolute improvement each indicator generates. The absolute improvement generated by each indicator is a product of the indicator improvement and its starting base. The higher the base number, the greater the absolute change an indicator will generate for a given percentage improvement.

Therefore, because health happens to start in 1940 at 38, education at 30, and communication at 10, health is implicitly weighted more because of its higher initial base (in addition to its explicit weighting of 5/12 of the index). Even if we were to weight all three areas equally in terms of number of indicators (say reducing health and education both to only 3 indicators), with its higher starting base, health would still have a larger weighting. A 10% change in health would result in an absolute change of about 4 (10% times 38 = 3.8), whereas the same percentage change for education and communication would only generate an absolute change of 3 (10% times 30 = 3), and 1 (10% times 10 = 1) respectively.

Removing the weighting bias

To show the effects of this weighting bias, the following table shows a hypothetical SOI in which all of the indicators are assigned the same starting base. This table arbitrarily places 50 as the starting point for each indicator, yet uses the same percentage improvements from the actual SOI analysis.

Table 3-10
SOI: INDICATORS BEGINNING WITH HYPOTHETICAL EQUAL BASES

1. Indicator	**2. Indicators with same base 1940**	**3. Percentage change of each indicator**	**4. Indicator number for 2005 (column 2 times 3)**	**5. Absolute change (column 4 minus 2)**	**6. Contribution to total absolute SOI change (column 5 times explicit weight)**
Health	50	94.92%	97.46	47.46	19.77
Education	50	146.29%	123.145	73.145	24.38
Communication	50	151.4%	125.7	75.7	18.925
Total SOI	**50**		**113.085**	**63.085**	**63**

SOURCE: Hypothetical calculations using equal starting bases of 50 times the actual percentage improvement of health, education, and communication from table 3-8.

With the equal starting bases, the total change for the SOI is altered. The percentage improvement of the SOI increases to 126% (63/50) from the previous 118.22% improvement (33.6/28.43). With equal starting bases, the percentage improvement of each indicator is now the sole criteria in the SOI index change (along with their explicit weightings). The percentage change for the SOI index of 126% is now simply the weighted average of the percentage improvement of each indicator:

$$(94.92\%*5/12+146.29\%*4/12+151.4\%*3/12)=126\%.$$

Unlike the actual index, the weighting bias of bases is removed.

What distortion is the unequal bases causing and why?

Overall the distortion is small. As mentioned above, the weighting bias actually reduces total SOI performance just slightly to 118% from 126%.

In the actual SOI index, Health (5 indicator average) had the highest weighting (because it had the highest starting base). Therefore, any given percent change in Health produced a larger absolute change for the SOI total index compared to the other indicators with lower bases. The next highest base was Education (4 indicator average), followed by Communication (3 indicator average). The last column of the following table shows the weighting bias in the actual SOI. However, looking at the first column of the table, one sees that the actual percentage change of the indicators is the reverse of their weighting: Communication has the strongest improvement-however it is weighted the least; Education has the second best improvement-yet it is weighted 2nd; finally, Health shows the smallest total increase, yet it is weighted the most. The effect of this unequal weighting is that the indicators with weaker performance have actually been weighted more, reducing the total SOI. Therefore, the hypothetical SOI (with equal bases) shows a stronger improvement 126% than the actual SOI of 118%.

Table 3-11
SOI INDICATOR PERCENT CHANGE, PERCENT CONTRIBUTION TO SOI INDEX WITHOUT WEIGHTING BIAS, ACTUAL PERCENT CONTRIBUTION TO SOI INDEX

1. Indicator	2. Percentage change of each indicator	3. Indicator percent contribution to total SOI change (removing weighting bias in hypothetical SOI)	4. Actual indicator percent contribution to SOI change	5. Weighting bias in SOI
Health	94.92%	31.3%	44.58%	1
Education	146.29%	38.7%	43.97%	2
Communication	151.4%	30%	11.45%	3

SOURCE: Percent change of indicator (column 2) is from table 3-10, indicator percent contribution to SOI change without weighting bias (column 3) is the number from column 6 in table 3-10 divided by 63, actual indicator percent contribution to SOI change (column 4) is from Table 3-8, weighting bias (column 5) range is from 1 (having most weight due to explicit and implicit weighting) to 3 (having lowest weight).

The above table shows the percentage contribution of each indicator in our hypothetical example (column 3) with the base-weighting bias removed, and the actual contribution in the SOI analysis with unequal bases (in column 4). In our hypothetical example the weight of Communication is increased from 11.45% to 30% because in the actual sample, Communication starts with the lowest initial base. Therefore, its strong percentage increase is diluted by its lower initial starting base in the actual SOI, but increased in the un-weighted hypothetical example. The percentage contributions of both Health and Education are lowered (in the hypothetical example) because their higher base

numbers are equalized with Communication (although Health is reduced much more than Education because it had the highest starting base). With equalized bases, their percentage contributions are reduced in the hypothetical example (but are more in the actual SOI due to their higher starting bases).

If we remove the weighting bias (as in the hypothetical example), the SOI change is exactly an average of the three indicators improvement with their explicit weightings. Total SOI change is 126%. However, in the actual SOI analysis (with unequal weightings), the total percentage change is not merely an average of the 12 individual indicators improvement. Again, this is because the differing starting bases weight each indicator differently-those with a higher starting base will have a greater effect on total SOI change than those with a smaller base for the same percentage indicator change. So although in theory, the SOI is 5/12 Health, 4/12 Education, 3/12 Communication, the weighting bias alters the surface weighting. The actual weighting of the SOI indicators is presented in the following table.

In spite of the weighting bias, the total index results are not grossly distorted. The difference between the actual analysis (with unequal bases) and our hypothetical example is not so large as to where one indicator is overduly influencing the index due to its higher starting base. Again, the total difference between the actual total SOI improvement of 118% and the un-weighted version 126% is relatively small.

Table 3-12
SOI INDEX: EXPLICIT/THEORETICAL WEIGHTING VS. IMPLICIT/ACTUAL WEIGHTINGOF 12 INDICATORS

Indicator	Theoretical Weighting	Actual Weighting
Health Index (5/12)	**41.66%**	**55.56%**
Life Expectancy	8.33%	18.46%
Infant Mortality	8.33%	10.38%
Doctors	8.33%	10.19%
Dentists	8.33%	9.27%
Beds	8.33%	7.22%
Education Index (4/12)	**33.33%**	**35.53%**
Primary	8.33%	16.04%
Secondary	8.33%	3.14%
Tertiary	8.33%	1.47%
Literacy	8.33%	14.88%
Communication Index	**25%**	**8.94%**
News	8.33%	6.20%
Phones	8.33%	1.89%
Motor Vehicles	8.33%	.86%
Social Opportunity Index	**100%**	**100%**

SOURCE: Theoretical weighting is just 1/12 for each indicator. Actual weighting is derived by using table 3-6 and taking each indicators absolute value in 1940 and dividing by the total absolute value of all 12 indicators (341.12)

So what was measured here?

The 118% improvement of the SOI was driven primarily by health and education, which accounted for 91% of the index change (55.5% for health, 35.5% for education, see table 3-12). Communication improvements accounted for the remaining 9% of the SOI change.

Summary/Conclusion

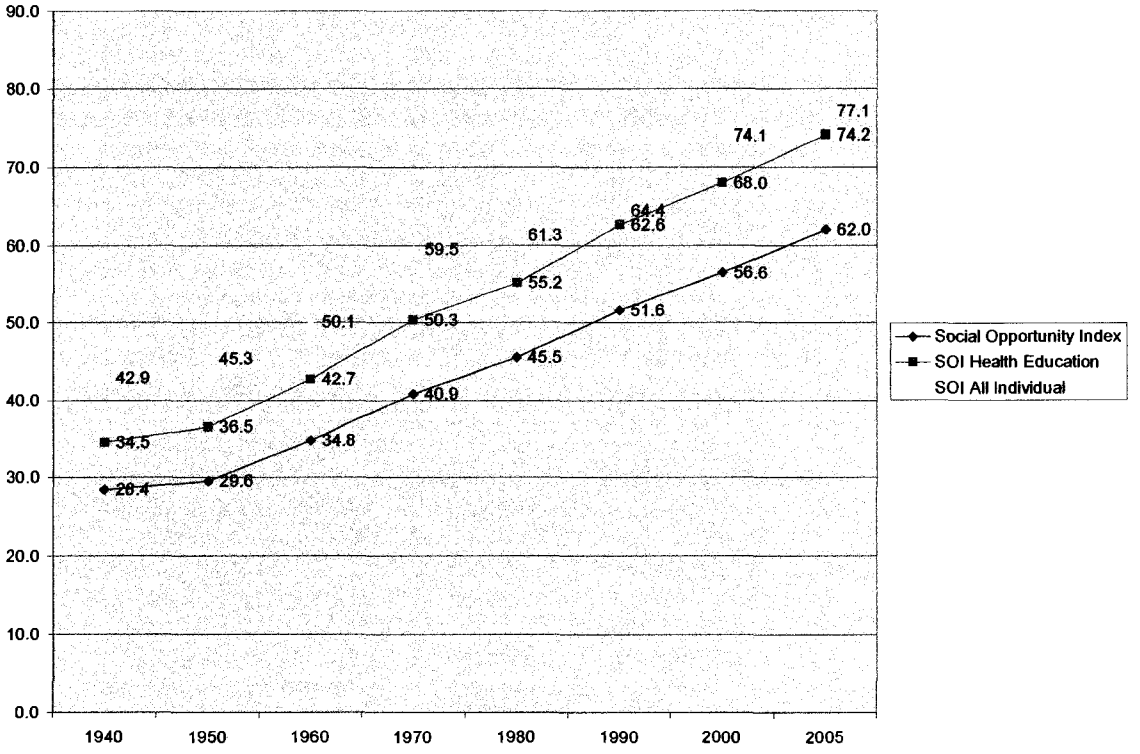
As measured by the SOI, the social gap between Latin America and the U.S. narrowed tremendously. Latin America began 1940 at only 28.43% of the U.S. social level, and by 2005 had more than doubled its relative position to 62.03% of the U.S. social level, an improvement of 118%.

For the Health and Education version of the SOI (SOI-HE), Latin America starts at 34.51% of the U.S. health and education level in 1940 and improves to 74.18% in 2005, an improvement of 115%.

If we look at the "All-Individual" version of the SOI, the improvement is from 42.91% of the U.S. value to 79.11% in 2005, an improvement of 80%.

Therefore, all versions of the SOI indicate the same trend: a narrowing social gap between Latin America and the U.S as the following chart demonstrates (chart 3-2).

Chart 3-2
SOI full index, SOI Health Education, SOI All Individual



SOURCE: Data from Tables 3-1, 3-4, and 3-5.

Section 3: The Physical Quality of Life Index

The Physical Quality of Life Index (PQLI) is a social index developed by Dr. Morris at the Overseas Development Council (ODC). It was first presented in a preliminary form at a conference in 1977 entitled *The United States and World Development: Agenda 1977*. However, the PQLI was not fully developed and published until 1979 in a work entitled *Measuring the Conditions of the World's Poor, The Physical Quality of Life Index*[1].

In a 1996 op-ed piece published by Brown University, Dr. Morris summarizes the beginnings of the PQLI and its findings:

> If we want to measure the changing condition of the world's poor, we need a better measure of what is happening to them. The measure must tell us not how much has been spent but how effectively lives have improved. While there are many other things we might want to know, infant mortality, life expectancy at age one and basic literacy are central to well-being of the poorest of the poor.

[1] Morris David Morris, *Measuring the Conditions of the World's Poor, The Physical Quality of Life Index* (New York: Pergamon Press, 1979).

In the mid-1970s, encouraged by James Grant, who subsequently became UNICEF's head, I developed the Physical Quality of Life Index. The PQLI summarizes infant mortality, life expectancy at age one and basic literacy on a zero to 100 scale. The index enables researchers to rank countries, not by incomes but by changes in real life chances. A major finding in the initial study was the lack of congruence between GNP per capita and the PQLI. Industrialized countries tended to rank high in the index, but other countries with high incomes, especially the very richest Mideast oil producers, had PQLIs in the low 30s. Some very poor countries like Sri Lanka (PQLI of 82) and the Indian state of Kerala (PQLI of 68) performed well despite very low monetary incomes.

Additional research between 1960 and 1990 expands and confirms these fascinating findings that run counter to conventional wisdom. For instance:

* In 1960, the average PQLI for all the 127 countries (weighted by population) was 50.1. By 1990, the world average PQLI had risen in 71.7. This rise represents real improvement in well-being. Each baby has only one life to be saved. The rich cannot capture all the gains in life expectancy. Literacy rises only when more children go to school. This 30-year gain took place while population increased by 76 percent. This improvement offers a useful corrective for those who are utterly panicked by rapid population growth.

* In 1960, 53 percent of the world's population lived in countries with PQLI averages of less than 50. By 1990, only 11 percent lived in countries with averages of less than 50. This means that the number of people in the under-50 PQLI group fell from 1.7 billion to 584 million during that 30-year period.

* Between 1960 and 1985, the PQLI values of the economically poorest countries, those with incomes under $450 per capita in constant 1980 dollars, rose from 31 to 64. This was faster improvement than occurred in the higher income classes.

* Sub-Saharan Africa includes three of the 20 regions into which I divide these 127 countries. These three regions combined had the world's worst PQLI performances in 1960 and in 1990. Yet between 1960 and 1990 the average PQLI of sub-Sahara Africa rose from 21 to 50. This is quite inconsistent with the political and economic indicators on which the doomsayers depend.[2]

[2] Morris David Morris, "Light in the Tunnel: The Changing Condition of the World's Poor", Brown University Op-Ed, available online at http://www.brown.edu/Administration/News_Bureau/Op-Eds/Morris.html .

The historical data series in Morris' book covers the years 1950 (circa), 1960 (circa) and early 1970s for 74 countries. A separate table gives PQLI rankings for 150 countries, but only for the period "early 1970s".[3]

In order to utilize the PQLI to analyze Latin America's social performance, I have completely reconstructed and updated the PQLI with new data for 1950 through 2005 (on a five year-intervals basis). In addition to compiling the data for the United States and Latin America, I have also compiled data for 9 world regions (74 countries) to contextualize Latin America's performance with that of other world regions. Although this world sample "only" contains 74 countries, the sample accounts for 90% or more of the world's population for all years in this analysis (1950-2005) and should therefore provide a fairly representative sample of the global trends in social development.

What is the PQLI Index?

The PQLI consists of only three indicators:

1. Life Expectancy at one
2. Infant Mortality
3. Literacy

[3] There was one update to the PQLI published in 1996: *Measuring the Changing Condition of the World's Poor: the Physical Quality of Life Index, 1960-1990*. Working paper 23/23. Providence: Brown University

For each indicator a maximum and minimum value is chosen to establish the range, and then the country data is converted into an index number. For example, is a country's life expectancy is 70, and the maximum and minimum values chosen for life expectancy (goalposts) are 85 and 25, the conversion to an index number is as follows:

(Individual Country Value-Minimum Value) / (Maximum Value- Minimum.Value)

$$(70-25) / (85-25) = .75$$

A full explanation for the computation and methodology for reconstructing the PQLI index is provided in the appendix.

Differences with SOI

The biggest difference between the PQLI and SOI is the number of indicators: the PQLI only has three indicators, whereas the SOI has 12 indicators. Because the SOI includes each of the three indicators used in the PQLI, in essence, the PQLI can be considered a sub-index of the SOI.

Because the PQLI only has three indicators, the index is very sensitive to the data reliability for each indicator. If just one of the indicators is unreliable, the entire index is affected. With 12 indicators, the SOI is a more diversified index, and would be less affected were one of the data indicator sources prove to be unreliable.

Another difference between the PQLI and SOI is that for the Social Opportunity Index, there is a "built in" comparison to the United States. The SOI indexing is based on the United States value for each of the 12 indicators: a score of 100 means a country is equal to the U.S. value for a given indicator, a score of 80 means that country is 80% of the U.S. value. However, for the PQLI, there is no "built in" comparison. Each country's PQLI score stands on its own. To make a comparison, one simply needs to compare the PQLI index score between countries.

The advantage of having a separate index number without a built in comparison is that comparisons can be made between any set of countries. Therefore, for the PQLI we can directly compare the performance of Latin America to other countries and regions (in addition to the United States). With the Social Opportunity Index, we could also compare Latin America to other countries and regions, but it would be an indirect comparison: each country or region would compare their SOI score, which in turn reflects their performance relative to the United States.

<u>What has been the social trend in Latin America as measured by the PQLI?</u>

As measured by the PQLI, Latin America has improved its social condition substantially from 1950 through 2005 as the following tables and graph reveal. Although it began 1950 with a PQLI of .537, it improved to .885 by 2005. This represents an absolute improvement .348, and a percentage improvement of 65%.

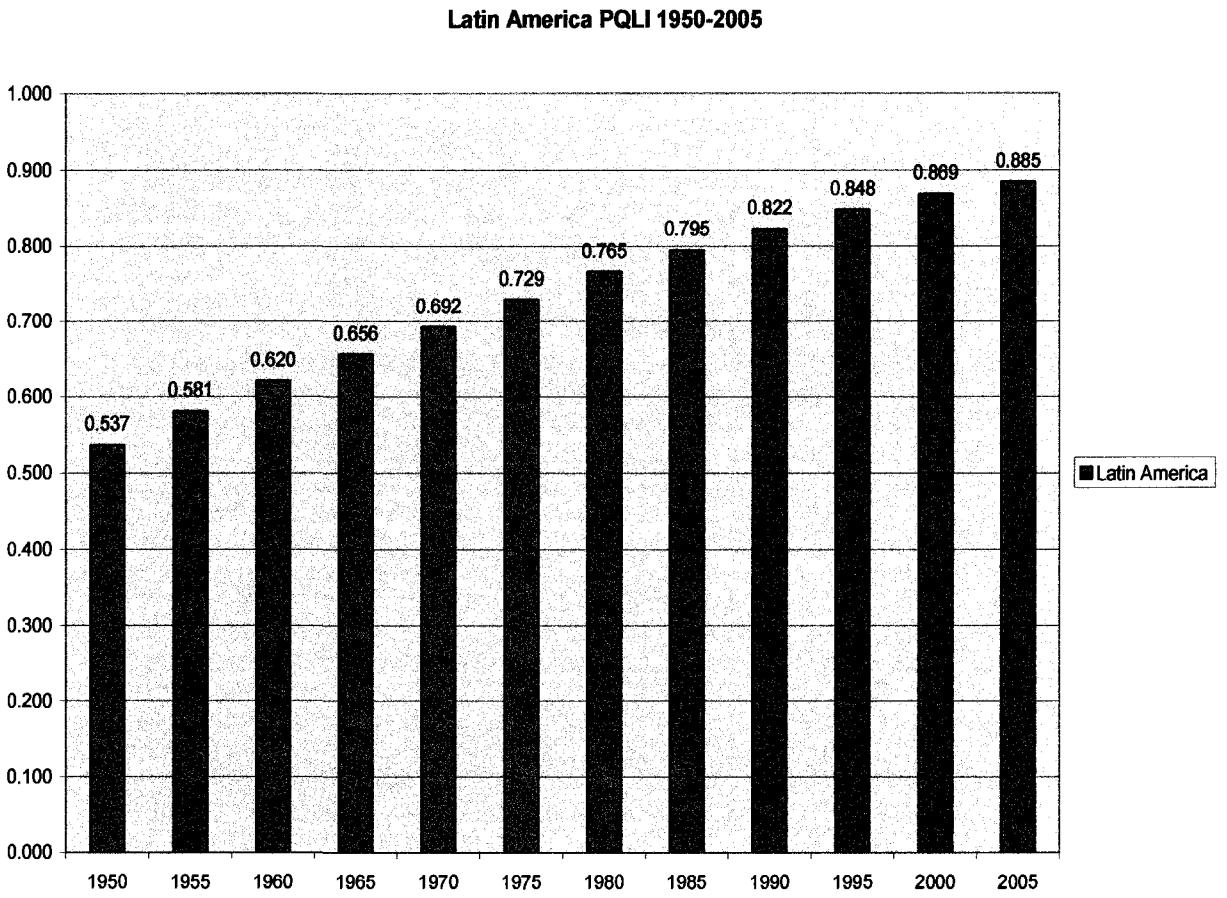
Table 3-13
PHYSICAL QUALITY OF LIFE INDEX (PQLI) LATIN AMERICA, 1950-2005

	1950	1960	1970	1980	1990	2000	2005
Latin America	**0.5366**	**0.620**	**0.692**	**0.765**	**0.822**	**0.869**	**0.8851**
Argentina	0.761	0.800	0.829	0.868	0.891	0.918	0.927
Bolivia	0.319	0.375	0.473	0.603	0.709	0.777	0.808
Brazil	0.491	0.588	0.657	0.734	0.799	0.854	0.872
Chile	0.634	0.678	0.768	0.870	0.909	0.943	0.950
Colombia	0.545	0.626	0.720	0.803	0.844	0.881	0.893
Costa Rica	0.676	0.739	0.813	0.893	0.917	0.941	0.947
Cuba	0.698	0.760	0.848	0.898	0.913	0.944	0.953
Dominican Republic	0.417	0.570	0.648	0.724	0.793	0.834	0.854
Ecuador	0.491	0.592	0.667	0.754	0.830	0.890	0.903
El Salvador	0.404	0.512	0.598	0.645	0.768	0.826	0.846
Guatemala	0.361	0.416	0.530	0.609	0.694	0.769	0.796
Haiti	0.177	0.288	0.381	0.446	0.540	0.624	0.665
Honduras	0.346	0.457	0.549	0.664	0.748	0.796	0.819
Mexico	0.543	0.642	0.714	0.793	0.852	0.897	0.913
Nicaragua	0.356	0.481	0.576	0.635	0.721	0.786	0.808
Panama	0.633	0.717	0.783	0.840	0.870	0.899	0.909
Paraguay	0.685	0.737	0.773	0.804	0.832	0.865	0.878
Peru	0.426	0.514	0.620	0.715	0.802	0.854	0.878
Uruguay	0.789	0.828	0.841	0.873	0.904	0.927	0.936
Venezuela	0.558	0.667	0.765	0.823	0.866	0.892	0.902

SOURCE: See data appendix for sources and methodology.

Chart 3-3

LATIN AMERICA PQLI, 1950-2005



SOURCE: Table 3-13.

Latin America and the United States

While the results presented above show strong absolute improvement for Latin America, to return to our original question how has the region fared relative to the United States? Is Latin America falling behind as measured by the PQLI?

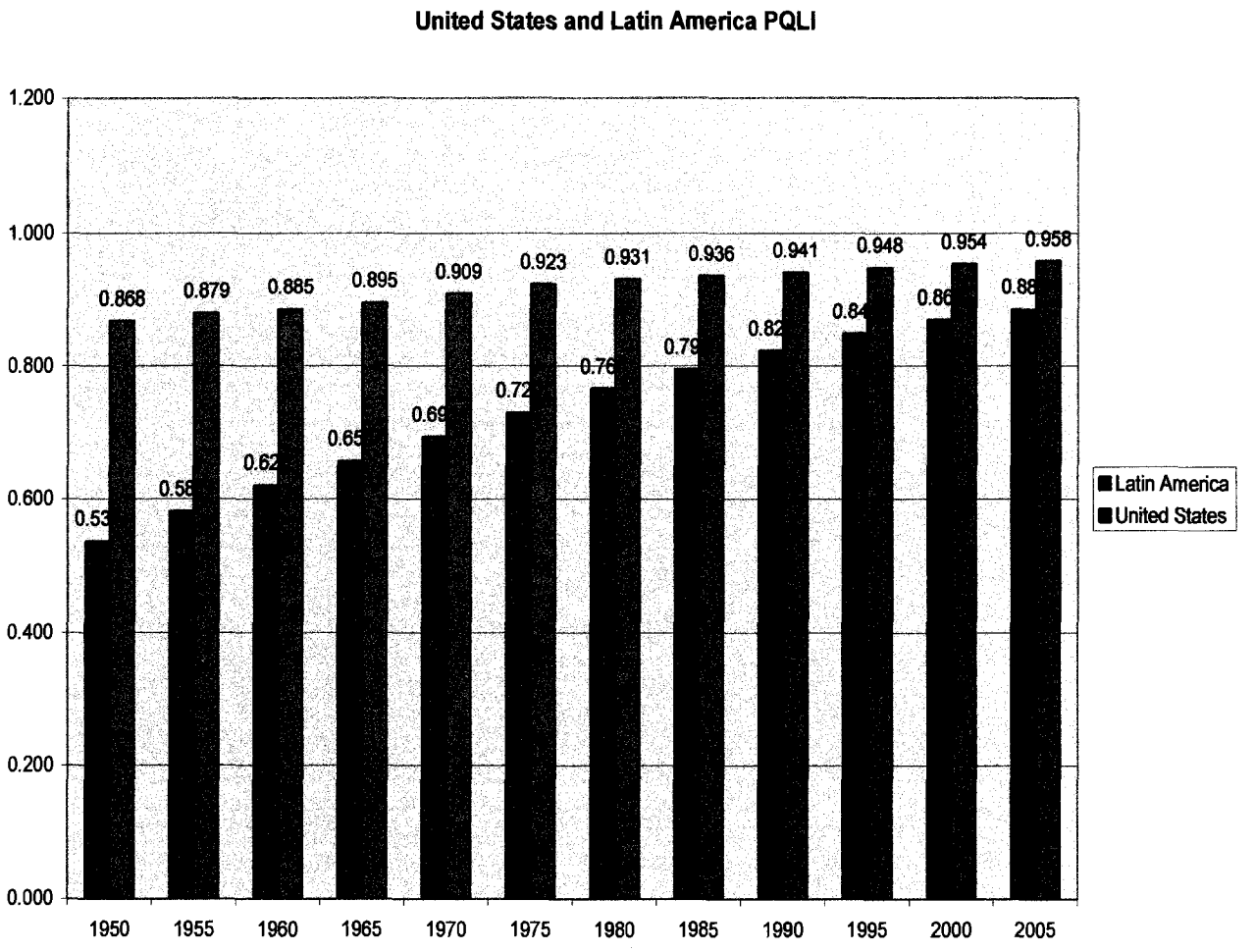
The following table and chart shows that the United States also improved its PQLI from .868 to .958. However, Latin America's improvement was greater than the United States. In absolute terms Latin America increased its PQLI score by .348 index points vs. the United States' absolute improvement of .09 index points. Of greater importance, Latin America also outperformed the U.S. in relative terms, increasing its PQLI score by 65% while the United States improved its PQLI by only 10%.

Table 3-14
LATIN AMERICA AND U.S. PQLI, 1950-2005

	1950	1960	1970	1980	1990	2000	2005
United States	0.868	0.885	0.909	0.931	0.941	0.954	0.958
Latin America	**0.5366**	**0.620**	**0.692**	**0.765**	**0.822**	**0.869**	**0.8851**

SOURCE: See data appendix for sources and methodology.

Chart 3-4
UNITED STATES AND LATIN AMERICA PQLI, 1950-2005



SOURCE: Table 3-14.

Table 3-15
LATIN AMERICA, UNITED STATES PERCENT PQLI IMPROVEMENT, 1950-2005

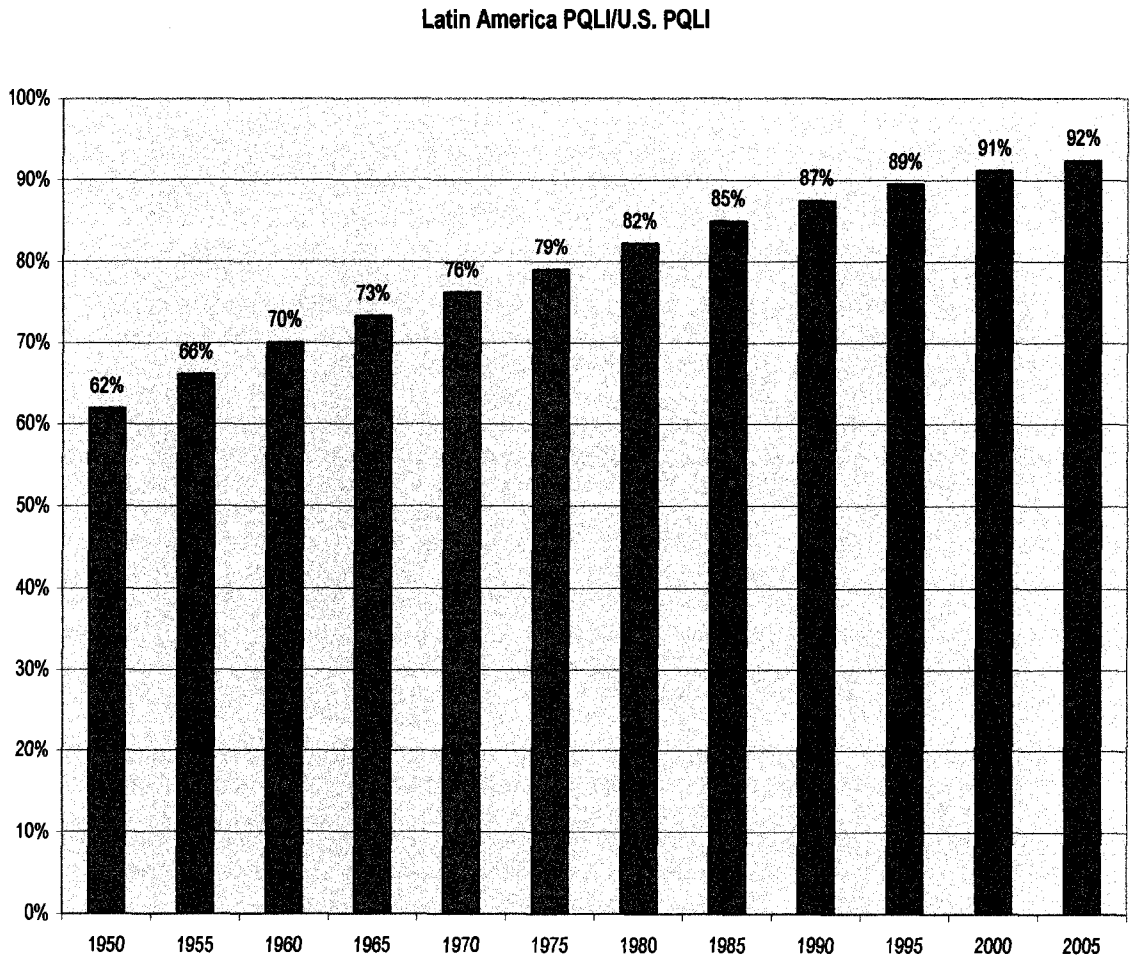
	Percent Improvement
Latin America	65%
United States	10%

SOURCE: Calculated from Table 3-14.

It is also worth noting that Latin America in 2000 actually surpassed the United States PQLI value of 1950, and in just five years has made the jump to the United States PQLI of 1960. If this trend continues, Latin America will attain the U.S. 2000 social level in 2025, and achieve the same social development level as the U.S. in the year 2050.

Therefore, the answer to our question is that the social development gap as has narrowed substantially as measured by the PQLI. The following table shows this decreasing gap: Latin America began 1950 at 62% of the United States PQLI value, and by 2005 has reached 92% of the United States PQLI value.

Chart 3-5
LATIN AMERICA PQLI AS A PERCENT OF U.S. PQLI, 1950-2005



SOURCE: Calculated from Table 3-14.

Latin America and the World

To broaden our analysis of Latin America beyond the United States, this section examines the global social trend (as measured by the PQLI) and compares Latin America's performance to the world average. The world average includes the 20 countries of Latin America and 74 other countries from all of the major world regions. This sample accounts for over 90% or more of the world's population for the entire 1950-2005 period. The data appendix provides a listing of the regions and countries in this sample.

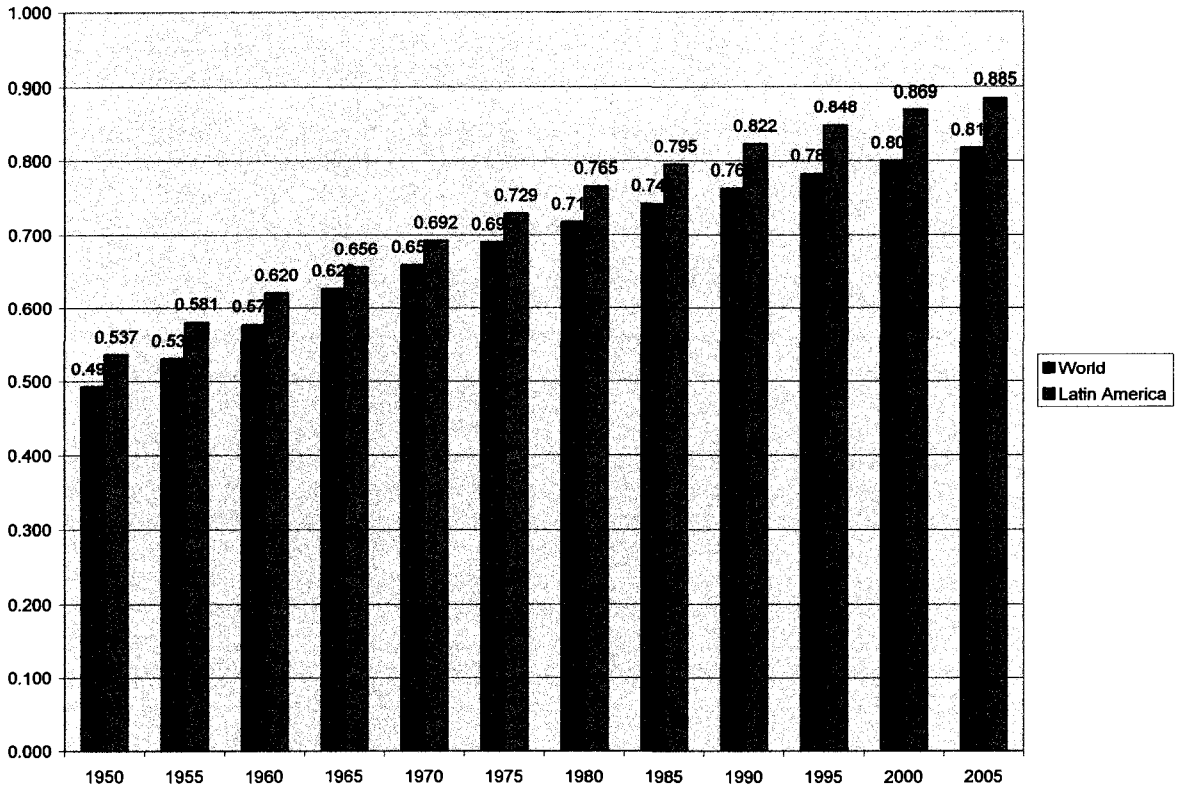
As previously noted, Latin America showed strong improvement in its PQLI score, improving from .537 in 1950 to .885 in 2005. The world average also improved its PQLI from .492 in 1950 to .817 in 2005. The following table and chart provide the PQLI scores for both Latin America and the world average for the 1950-2005 period.

Table 3-16
LATIN AMERICA AND WORLD AVERAGE PQLI, 1950-2005

	1950	1960	1970	1980	1990	2000	2005
Latin America	0.5366	0.620	0.692	0.765	0.822	0.869	0.8851
World	0.492	0.578	0.659	0.717	0.763	0.800	0.817

SOURCE: See data appendix for sources and methodology.

Chart 3-6
LATIN AMERICA AND WORLD AVERAGE PQLI, 1950-2005



SOURCE: Table 3-16.

Both Latin America and the world average showed a strong improvement in their PQLI score from 1950-2005. In percentage terms, both improved at almost identical rates: Latin America improved 65% and the world average increased by 66%.

Table 3-17
LATIN AMERICA AND WORLD AVERAGE PERCENT IMPROVEMENT IN PQLI, 1950-2005

	Percent Improvement
Latin America	65%
World Average	66%

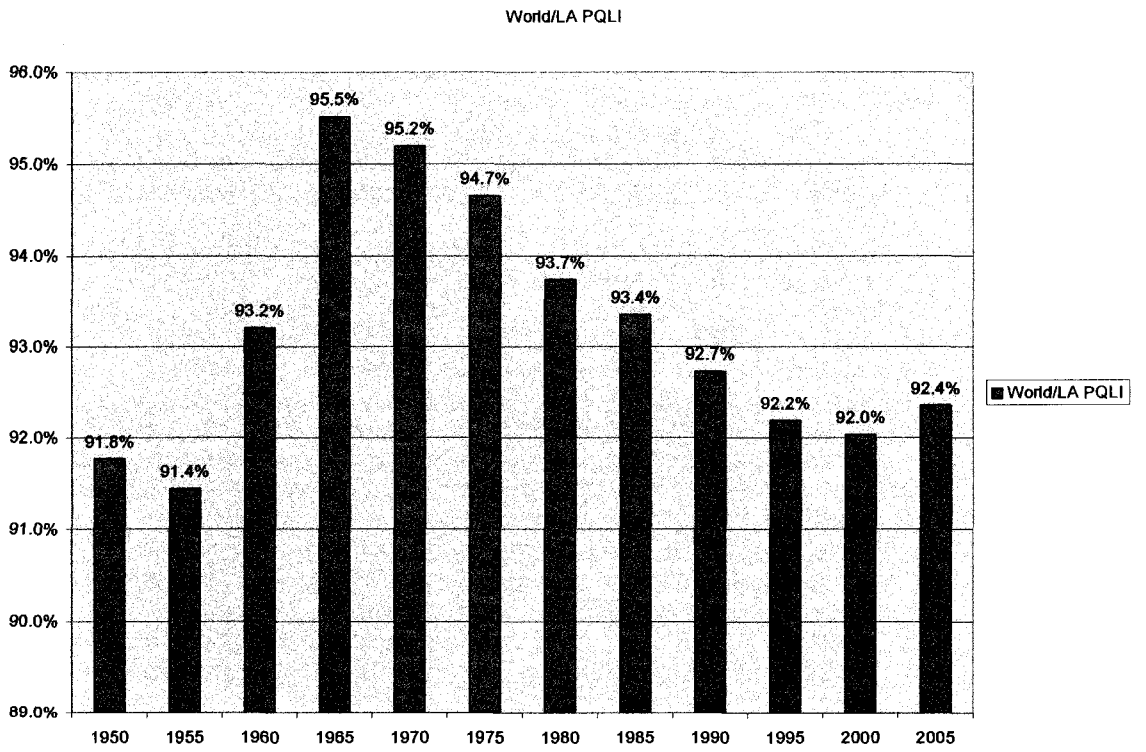
SOURCE: Calculated from Table 3-16.

Latin America's social development ranks above the world average for the entire 1950-2005 period. Therefore, unlike the comparison with the U.S., there is no gap for Latin America to narrow-it is the world that is trying to narrow the gap with the Latin America.

Given their similar performance, Latin America maintained its "lead" over the world in its PQLI score. However, the world average gained relative ground on Latin America in relative terms, increasing from 91.8% of the Latin American PQLI score in

1950 to 92.4% in 2005. The following chart demonstrates their relative performance for the entire 1950-2005 period.

Chart 3-7
WORLD PQLI AS A PERCENT OF LATIN AMERICA PQLI, 1950-2005



SOURCE: Table 3-16.

Latin America and other World Regions

The PQLI scores, regional ranking in terms of PQLI score, percentage improvement, and average annual percentage improvement for 9 world regions are presented in the following table. The total country sample (including Latin America) is for 94 countries,

representing over 90% of the world's population for the 1950-2005 period. The data appendix provides the list of countries included for each world region.

Table 3-18
RANKING BY PQLI SCORE, PQLI SCORE, PERCENTAGE IMPROVEMENT, AVERAGE ANNUAL RATE OF GROWTH FOR WORLD REGIONS, 1950-2005

1950 Rankings	PQLI 1950	Percentage Improvement	Avg. Annual Rate	2005 PQLI	New Rank	2005 Rankings
(1) North America	.87	10.5%	.18%	.96	(2) -1	(1) Western Europe
(2) Western Europe	.824	17.4%	.29%	.968	(1) +1	(2) North America
(3) Eastern Europe	.766	16%	.27%	.888	(3)	(3) East Asia
(4) Latin America	.537	65%	.91%	.885	(6) -2	(4) South East Asia
(5) South East Asia	.416	112.7%	1.38%	.886	(4/5) +1	(5) Latin America
(6) East Asia	.411	115.7%	1.41%	.886	(4/5) +2	(6) Eastern Europe
(7) South Asia	.273	153.5%	1.71%	.691	(8) -1	(7) North Africa/Middle East
(8) Sub-Saharan Africa	.260	138.2%	1.59%	.619	(9) -1	(8) South Asia
(9) North Africa/Middle East	.254	215.3%	2.11%	.801	(7) +2	(9) Sub-Saharan Africa
World		66%	.93%			

SOURCE: See data appendix for sources and methodology for calculating PQLI score. Rankings by PQLI score, percentage growth, and average annual compound growth are calculated based on the PQLI scores in this table.

In terms of ranking, Latin America begins 1950 as the region with the fourth highest PQLI ranking. Only North America, Western Europe, and Eastern Europe rank ahead of Latin America in social development in 1950. In 2005, Latin America has nearly caught up to Eastern Europe (only trailing it by .002), but the regions behind Latin America have also caught up to Latin America. Both East Asia and South East Asia have caught up to Latin America in social development, and are actually slightly ahead of Latin America by .001.

Given that only 3/1000 separates Eastern Europe (at .888), Latin America (at .885), and East Asia and South East Asia (both at .886), the real picture is one of overall convergence. Four major world regions with distinct levels of social development in 1950, now all have achieved the same level of social development, and are in a virtual four-way tie for third place in PQLI regional rankings. In 2005, while Western Europe, and North America have the highest social development level, all the major world regions behind these leaders have narrowed the relative social gap. In addition, the gaps between all regions are narrowing.

Although all regions are improving, some are improving their PQLI at a faster rate. In percentage terms, five regions improved their PQLI more than Latin America (North Africa/Middle East, South Asia, Sub-Saharan Africa, East Asia, and South East Asia); meanwhile Latin America's improvement of 65% was greater than three regions (North

America, Western Europe, and Eastern Europe.)

Latin America as the fulcrum of World Development

As previously noted, Latin America's PQLI growth was nearly identical to the world average. This observation highlights the role of Latin America as the fulcrum of the social development improvements-sitting in the middle between the more developed countries and less developed countries. In terms of PQLI ranking Latin America sits in the middle in 1950 and 2005: Latin America began in the number four position in 1950 and remained in the middle given the four-way tie for third place in 2005. In terms of percentage improvement, Latin America also sits in the middle: Latin America did not show the very strong improvement typified by the less developed countries (South East Asia 112%, East Asia 115%, North Africa/Middle East 215%, Sub-Saharan Africa 138%, South Asia 153%), nor the slow improvement typical of the more developed countries (North America 10%, Eastern Europe 16%, Western Europe 17%), but improved at a rate somewhat between the two, at 65%.

Overall, the clear trend here is one of convergence. Latin America in the middle position has gained ground on the world regions ahead of it (again improving at about the world average). Meanwhile, the regions behind Latin America have gained ground on it, some regions even catching up with Latin America. In short, all gaps are decreasing.

The PQLI "behind the scenes"

Latin America started with a PQLI of .537 in 1950, and improved its PQLI to .885 in 2005. What were the underlying changes that produced this PQLI improvement?

The following table gives the absolute change for each of the three PQLI indicators. To calculate their contribution to the total PQLI change of .3485, the absolute change for each indicator is simply weighted by 1/3 just as in the PQLI index.

Table 3-19
PQLI THREE COMPONENTS ABSOLUTE CHANGE AND CONTRIBUTION TO TOTAL PQLI ABSOLUTE CHANGE

(Note: Absolute Change is 2005 value minus 1950 value. Contribution to total PQLI change is 1/3 times the absolute change.)

Indicator	**1950**	**2005**	**Absolute Change**	**Contribution to total PQLI change**
Life Expectancy	.5647	.8331	.2684	.0894666
Infant Mortality	.4669	.9214	.4545	.1514999
Literacy	.5781	.9009	.3228	.1075999
Total PQLI (average of 3 indicators)	**.5366**	**.8851**	**.3485**	**.3485664**

SOURCE: See data appendix for sources and methodology for PQLI calculations.

Using the data from the previous table (3-19), the following table (3-20) calculates how much change each indicator generated in the overall PQLI change

Table 3-20
PQLI INDICATOR CONTRIBUTION TO TOTAL PQLI CHANGE

(Note: Percent change is calculated from the 1950-2005 scores in table 3-19. Indicator contribution to total change is absolute change of each indicator times 1/3. Percentage contribution to total PQLI change is the indicator contribution to total change divided by the total PQLI index change of .348)

Indicator	**Percent Change of Indicator**	**Indicator contribution to total change/total change**	**Percentage contribution to total PQLI change**
Infant Mortality	97.34%	(.1514999/.3485664)	43.46%
Literacy	55.84%	(.1075999/.3485664)	30.87%
Life Expectancy	47.53%	(.0894666/.3485664)	25.667%
Total PQLI	**65%**	**(.3485664/.3485664)**	**100%**

SOURCE: Calculated from Table 3-19.

As the above table reveals, infant mortality was responsible for the majority of the change (43%), followed by literacy (31%), and then life expectancy (26%). On the surface, the contribution of each indicator to the total change makes sense: infant mortality showed the biggest improvement (97%) and therefore contributed the most to the total PQLI change; likewise literacy posted the next biggest improvement (56%) and

contributed the second most to the total change; lastly, life expectancy registered the least percentage change and therefore contributed the lowest to the overall PQLI change

However, this explanation is incomplete. The percentage improvement of each indicator is not the sole determinant of total PQLI change. If this were the case, the total PQLI would have improved 67% rather than 65% (taking an average of each individual indicator improvement: (47.5+97.3+55.8)/3=66.9%).

Weighting Bias

What other factor besides percentage improvement of the indicators and their explict weighting (1/3) is driving the PQLI? The other factor is the initial starting point for each indicator. Those indicators with a higher starting base are implicitly weighted more than those with a lower starting base. This is because the higher base generates a greater absolute improvement than a lower base for the same percentage change. As table 3-20 shows, it is the absolute change of each indicator that leads to change for the total index. The absolute change is a product of percentage improvement of the indicator and initial starting base.

To show the effects of this weighting bias, the following table shows a hypothetical PQLI in which all of the indicators are assigned the same starting base. This table arbitrarily places 50 as the starting point for each indicator, yet uses the same percentage improvements from the actual PQLI analysis.

Table 3-21
PQLI WITH EQUAL STARTING BASES

Indicator	**Indicators with same base 1950**	**Percentage change of each indicator**	**Indicator number for 2005**	**Absolute change**	**Contribution to total PQLI change**
Life Expectancy	50	47.53%	73.765	23.765	7.9216587
Infant Mortality	50	97.34%	98.67	48.67	16.223331
Literacy	50	55.84%	77.92	27.92	9.3066657
Total PQLI	**50**		**83.4133**	**33.4133**	**33.4**

SOURCE: My hypothetical starting base of 50 times the actual percentage change of each indicator from table 3-20.

With the equal starting bases, the total change for the PQLI is altered. The percentage improvement of the PQLI increases to 66.9% from the previous 64.9% improvement.

With equal starting bases, the percentage improvement of each indicator is now the sole criteria in the PQLI index change. The percentage change for the PQLI index of 66.9% is now simply an average of the percentage improvement of each indicator: (47.5+97.3+55.8)/3=66.9%. Unlike the actual index, the weighting bias of bases is removed.

What distortion is the unequal bases causing?

Overall the distortion is small. As mentioned above, the weighting bias actually reduces total PQLI performance very slightly to 65% from 67%.

In the actual example, life expectancy had the highest weighting (because it had the highest starting base). Therefore, any given percent change in life expectancy produced a larger absolute change for the PQLI total index compared to the other indicators with lower bases. The next highest base was literacy, followed by infant mortality. The last column of the following table shows the weighting bias in the actual PQLI.

Table 3-22
PERCENT CHANGE OF EACH INDICATOR, PERCENT CONTRIBUTION OF EACH INDICATOR WITHOUT WEIGHTING BIAS FROM HYPOTHETICAL PQLI, ACTUAL INDICATOR PERCENT CONTRIBUTION TO PQLI, WEIGHTING BIAS
(Note: Weighting bias is which indicator is given the greatest weighting in the PQLI because of starting bases-1 is the greatest weighting, 3 the least)

Indicator	**Percentage change of each indicator**	**Indicator percent contribution to total PQLI change (removing weighting bias)**	**Actual indicator contribution to PQLI change**	**Weighting bias in PQLI**
Infant Mortality	97.34%	48.5%	43.46%	3
Literacy	55.84%	27.84%	30.87%	2
Life Expectancy	47.53%	23.71%	25.667%	1
Total PQLI	**50**			

SOURCE: Percentage change of each indicator is from table 3-19. Hypothetical indicator contribution to PQLI change is from table 3-21 using the contribution to PQLI change divided by the total change of 33.4. Actual indicator contribution to PQLI change is from table 3-20.

However, looking at the second column of the table, one sees that the actual percentage change of the indicators is the reverse of their weighting (weighting bias): life expectancy has the strongest improvement-however it is weighted the least; literacy has the second best improvement-yet it is weighted 2nd; finally, life expectancy shows the smallest total increase, yet it is weighted first.

The effect of this unequal weighting is that the indicators with weaker performance have actual been weighted more, reducing the total PQLI. Therefore, the hypothetical PQLI (with equal bases) shows a stronger improvement 67% than the actual PQLI 65%.

Table 3-22 (columns 3 and 4) shows the percentage contribution of each indicator in our hypothetical example with the base-weighting bias removed, and the actual contribution in the PQLI analysis (with unequal bases). In our hypothetical example the weight of infant mortality is increased from 43% to 48% because in the actual sample, infant mortality starts with the lowest initial base (.47). Therefore, its strong percentage increase is diluted by its lower initial starting base in the actual PQLI, but increased in the un-weighted hypothetical example. The percentage contributions of both life expectancy and literacy are lowered (in the hypothetical example) because their higher base numbers, .56 and .58 are equalized with infant mortality. With equalized bases, their percentage

contributions are reduced in the hypothetical example (but are more in the actual PQLI due to their higher starting bases).

If we remove the weighting bias (as in the hypothetical example), the PQLI change is exactly an average of the three indicators improvement. Total PQLI change is 67% which is the average of each of the three indicators individual percent improvement: (97+56+47.5)/3=67%.

However, in the actual PQLI analysis (with unequal weightings), the total percentage change is not merely an average of the three individual indicators improvement. Again, this is because the differing starting bases weight each indicator differently-those with a higher starting base will have a greater effect on total PQLI change than those with a smaller base for the same percentage indicator change. So although in theory, the PQLI is 1/3 life expectancy, 1/3 infant mortality, and 1/3 literacy, the weighting bias alters the surface weighting. The actual weighting of the PQLI indicators is presented in the following table.

Table 3-23
EXPLICIT/THEORETICAL AND IMPLICIT/ACTUAL PQLI INDICATOR WEIGHTINGS

Indicator	Theoretical Weighting	Actual weighting
Literacy	33.33%	35.91%
Life Expec.	33.33%	35.08%
Infant Mor.	33.33%	29%

SOURCE: Theoretical weighting is just 1/3 for each indicator. Actual weighting is derived by using table 3-19 and taking each indicators absolute value in 1950 and dividing by the total absolute value of all 3 indicators (1.6097)

In spite of the weighting bias, the results are not grossly distorted. The difference between the actual analysis (with unequal bases) and our hypothetical example is not so large as to where one indicator is overduly influencing the index due to its base. Again, the difference between the actual PQLI improvement of 65% and the un-weighted version 67% is very small. This small distortion is because although each indicator has a different starting base, the base spread is not very great: .47 for infant mortality, .56 for life expectancy, and .58 for literacy. Hence, the relatively small difference between the actual PQLI and the un-weighted hypothetical version of the PQLI.

SUMMARY/CONCLUSION

Latin America improves its social level by 65% as measured by the PQLI, starting in1950 with a PQLI of .537, and improving to .885 by 2005. In relative terms the social gap narrows substantially with the United States. Latin America starts in 1950 at 62% of the U.S. PQLI level, and reaches 92% in 2005. If this rate continues, Latin America will match the social development level of the U.S. in the year 2050.

Latin America ranks ahead of the world average in terms of social development throughout the 1950-2005 period. Latin America and the world average both increase their PQLI at nearly identical rates, 65% for Latin America and 66% for the world

average. Given their similar performance, the world average is only able to reduce the gap with Latin America slightly: the world starts 1950 at 91.8% of the Latin America value and gains slightly to 92.4% in 2005.

In comparison to world regions, the overall trend is one of convergence. Latin America gains relative ground on the regions ahead of it-the U.S., Western Europe, and Eastern Europe (even catching up to Eastern Europe)-while the 5 regions behind Latin America (East Asia, South Asia, South East Asia, North Africa/Middle East, and Sub-Saharan Africa) gain ground on Latin America (and also the U.S. and Western Europe). East Asia and South East Asia actually catch up to Latin America and Eastern Europe creating a four region convergence club in terms of social development. (Technically Eastern Europe is ahead by .888, with East Asia and South East Asia at .886, and Latin America at .885).

Therefore, for Latin America, and for other world regions the social gap as measured by the PQLI has strongly narrowed.

Section 4: The Human Development Index

The most widely recognized social development index is the United Nation's Human Development Index. The United Nations Development Program created the Human Development Index (HDI) in order to look "beyond GDP to a broader definition of well-being."[1] The index made its first appearance in the inaugural publication of the *Human Development Report* in 1990. The HDI "provides a composite measure of three dimensions of human development: living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, secondary, and tertiary level) and having a decent standard of living (measured by purchasing power parity, PPP, income)."[2] More details on the sources and index calculation are provided in the appendix.

Since its first publication in 1990, the HDI has been updated each year, with some revisions made to methodology and data over those sixteen years. Unfortunately, those changes mean HDI values from one report to the next are not comparable and no long term comparisons can be made from the series of HDI reports. This underscores a basic limitation of the HDI: the short historical time series of the index (1990-present), and the lack of comparability between the reports to create a comparative HDI series.

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[1] Human Development Report 2006, 263.
[2] Ibid

Fortunately recent reports have begun to provide HDI values for 1975 to the present (at five year intervals), therefore extending the time series and allowing for longer-term comparisons (from 1975 to the present). However, only the final HDI index score is provided for these long term series-the underlying data and calculations for index final values are not given. Therefore, an analysis of the drivers of HDI change for these longer-term series is not possible.

An additional problem with the HDR is the lack of regional aggregates for historical comparison. Individual country data are provided in their historical series, but there is no regional aggregate data except in the form of a graph (without the index values). Therefore, the ability to compare a given country to global regional trends is limited.

To overcome these limitations I have compiled my own database to recreate the Human Development Index. I have used the same primary data sources as the United Nations, though some slight variations in source data exist which is addressed in the appendix. In spite of slight variations, the resulting index values are a near perfect match to the UN HDI values (see appendix for the source, methodology, and comparison to actual HDI index).

I have also been able to extend the historical series back to 1960, allowing for a longer term analysis. With my recreated HDI, I can analyze not only the Human Development Index trend but also the underlying causes of this trend based on the components that make up the index.

In addition, I have collected data for not just Latin America and the United States, but 74 other countries, representing the major world regions. The country sample accounts for 90% of the world's population for the entire 1960-2005 analysis. All of the countries are grouped into major global regions. The data appendix provides a full listing of the countries and their respective regional groupings.

Comparing the indexes: SOI, PQLI, HDI

A major difference exists between the HDI and both the SOI and PQLI. While both the SOI and PQLI focus exclusively on social indicators, the HDI includes not just social, but also economic indicators. Indeed, one third of the HDI index is based on GDP/C.

Therefore, although the HDI is often portrayed as a social index of development, in reality, it is a hybrid of economic and social indicators. The ability to separate the economic from the social, and track the trends in each, as well as their correlation is therefore lost with the HDI index.

In spite of this defect, because the HDI is the most well-known and cited "social" index, it is included here in our analysis of social development.

How has Latin America fared as measured by the HDI?

Latin America has shown strong social improvement as measured by the HDI over the past forty-five years. Latin America began 1960 with an HDI of .564, and improved in each 5 year interval span, increasing to .795 in 2005. This represents an improvement

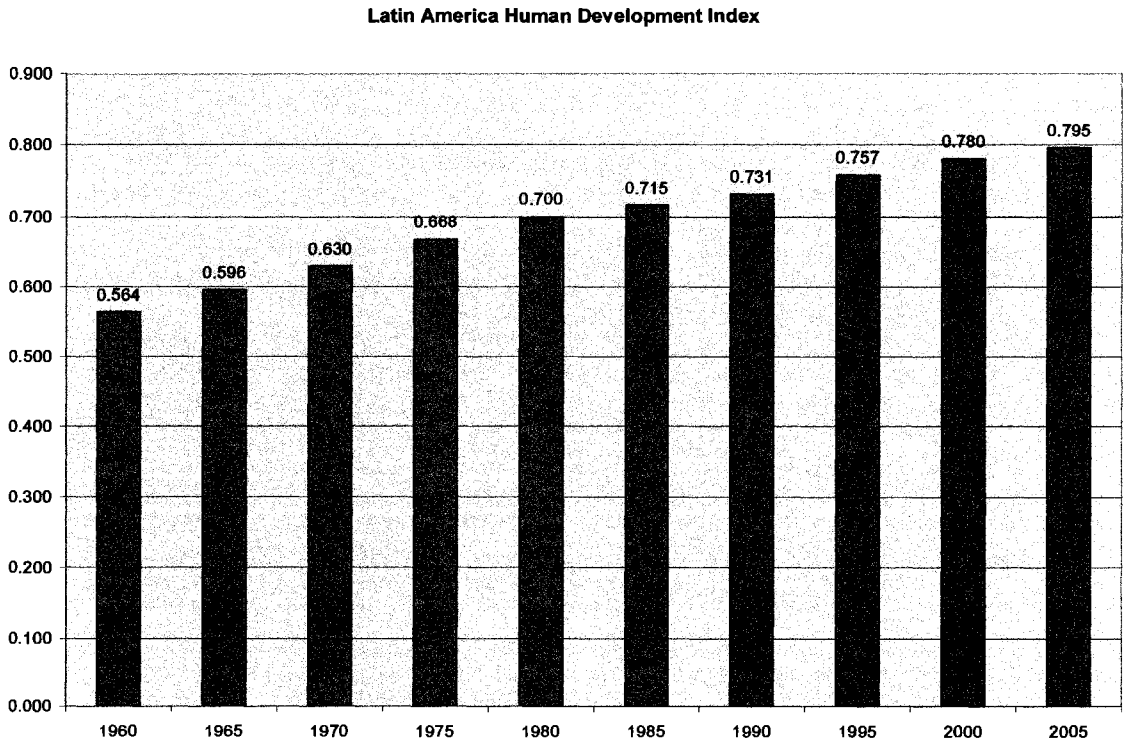
of just over 40% in the forty-five year period. The following table and chart present Latin America's HDI values for the 1960-2005 period.

Table 3-24
LATIN AMERICA HUMAN DEVELOPMENT INDEX (HDI), 1960-2005

1960	1965	1970	1975	1980	1985	1990	1995	2000	2005
.564	.596	.630	0.668	.700	.715	.731	.757	.780	.795

SOURCE: See data appendix for calculations.

Chart 3-8
LATIN AMERICA HUMAN DEVELOPMENT INDEX (HDI), 1960-2005



SOURCE: Table 3-24.

Latin America and the United States

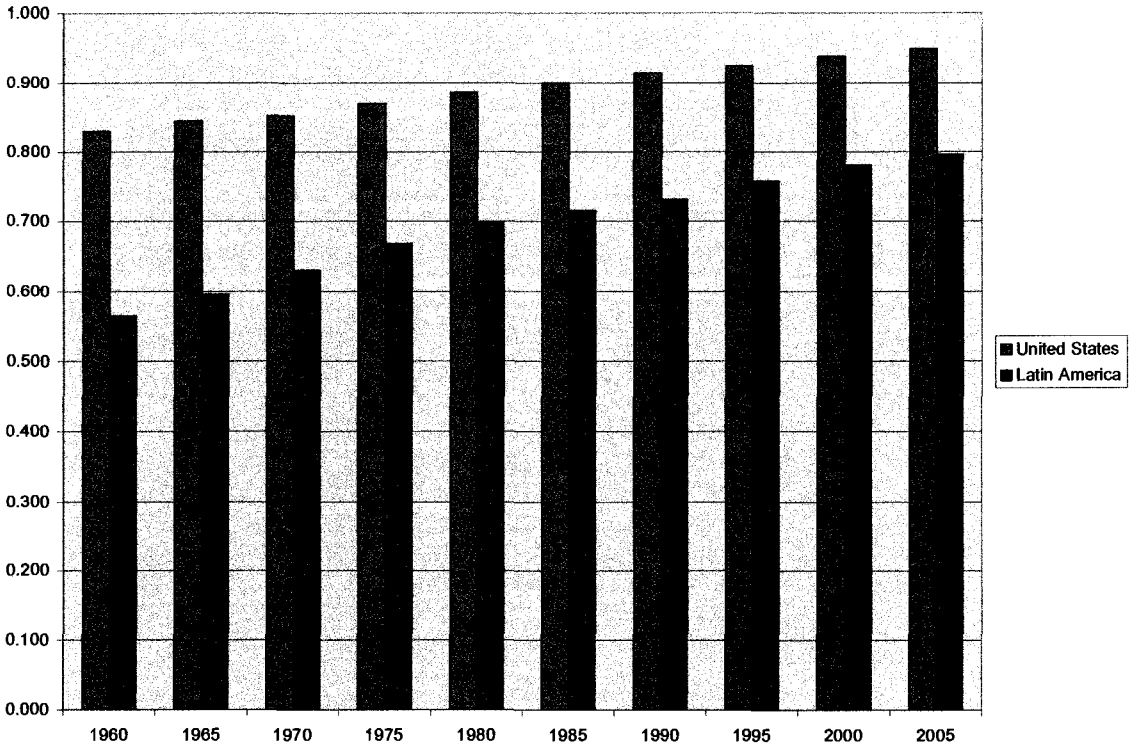
Has Latin America fallen behind the United States in social conditions as measured by the HDI? The following table and chart present data for both the United States and Latin America.

Table 3-25
LATIN AMERICA AND U.S. HDI VALUES, 1960-2005

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005
United States	0.828	0.842	0.851	0.868	0.885	0.900	0.915	0.925	0.939	0.949
Latin America	0.564	0.596	0.630	0.668	0.700	0.715	0.731	0.757	0.780	0.795

SOURCE: See data appendix for sources and calculations.

Chart 3-9
LATIN AMERICA AND U.S. HDI VALUES, 1960-2005



SOURCE: Table 3-25.

Both Latin America and the United States registered absolute improvement in their HDI scores: Latin America improved from .564 in 1950 to .795 in 2005, and the United States improved from .828 in 1950 to .949 in 2005. However, Latin America strongly outperformed the United States in relative HDI performance. In percentage terms the

United States improved its HDI by 14.4% over forty-five years-an average annual compound growth rate of .30%. Latin America more than doubled the increase of the United States, raising its HDI value by 40.5% over the period-an average annual compound growth rate of .76% growth.

Table 3-26
LATIN AMERICA AND U.S.
HDI PERCENTAGE IMPROVEMENT AND AVERAGE ANNUAL COMPOUND GROWTH RATE, 1960-2005

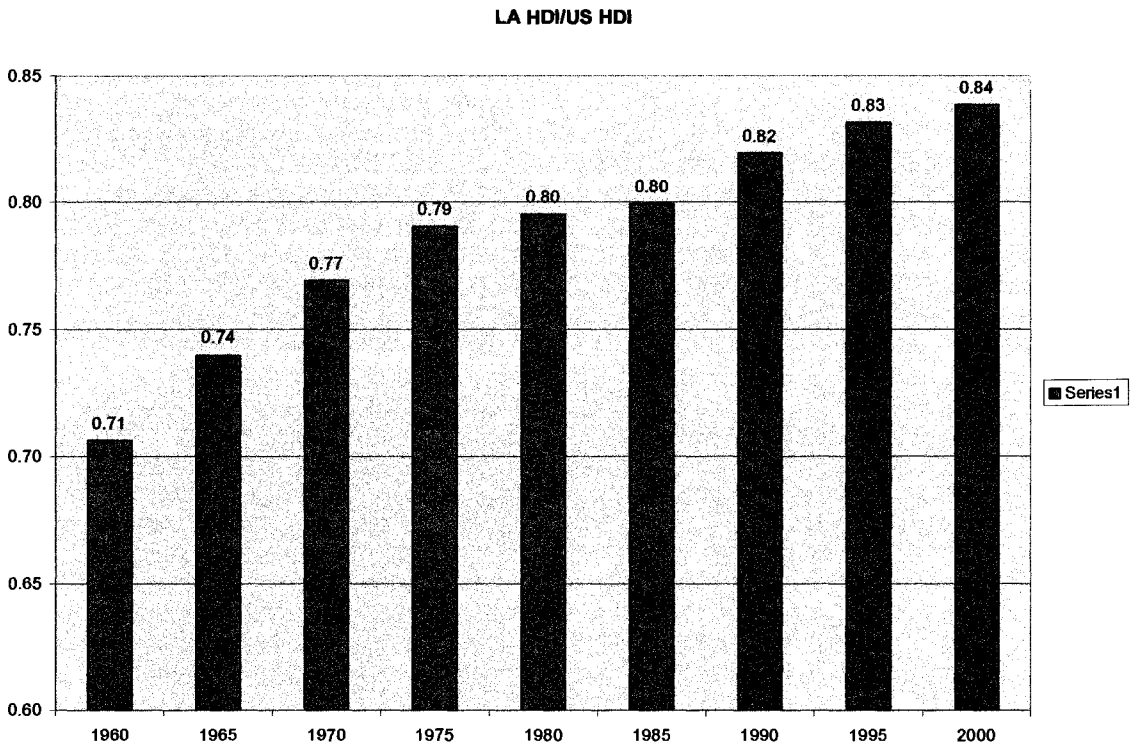
	Percentage Improvement 1960-2005	Average Annual Compound Growth Rate
Latin America	40.9%	.77%
United States	14.4%	.30%

SOURCE: Calculated from table 3-25.

This stronger Latin American performance translated into a decrease in the relative HDI gap with the United States. As the following chart shows, in 1960 Latin America's HDI value was 71% of the U.S. value; by 2005 it had improved to 84% of the U.S. HDI value.

Chart 3-10

LATIN AMERICA AS A PERCENT OF U.S. HDI, 1960-2005



SOURCE: Calculated from table 3-25.

Latin America and the world

To provide a global context for our analysis, the following section compares the performance of Latin America to the world average.

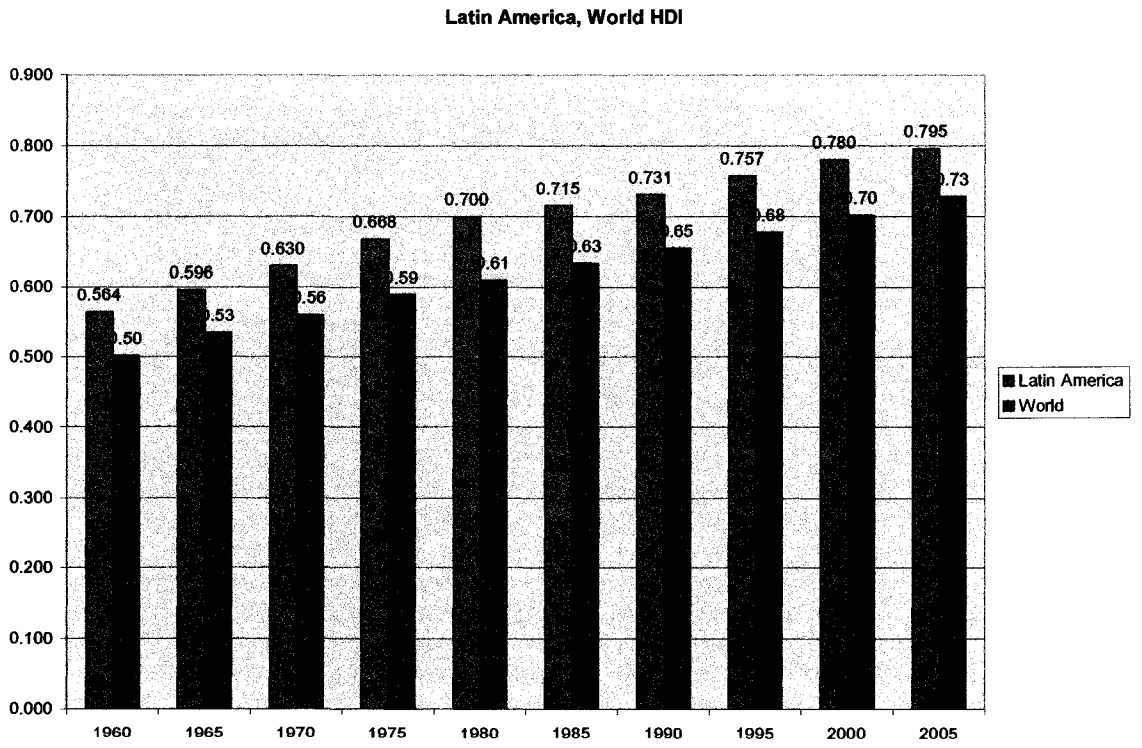
As was the case for the United States and Latin America, the world also improved its average HDI score over the 1960-2005, beginning in 1960 at .50 and increasing to .73 in 2005. The following table and chart present the absolute HDI scores for Latin America and the world average from 1960 through 2005.

Table 3-27
LATIN AMERICA AND WORLD AVERAGE HDI, 1960-2005

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005
World	0.50	0.53	0.56	0.59	0.61	0.63	0.65	0.68	.70	.73
Latin America	0.564	0.596	0.630	0.668	0.700	0.715	0.731	0.757	.780	.795

SOURCE: See data appendix for sources and HDI calculation.

Chart 3-11
LATIN AMERICA AND WORLD AVERAGE HDI
1960-2005



SOURCE: Table 3-27.

As the above table and graph reveal, both Latin America and the world average improved their HDI values. However, in percentage terms, the world average slightly outperforms Latin America for the 1960-2005 period. Over the entire 45 year period, the world average improved by 45% (or .83% average annual compound growth) compared to Latin America's improvement of 41% (or .76% average annual compound growth rate).

Table 3-28
LATIN AMERICA AND WORLD AVERAGE
HDI PERCENTAGE IMPROVEMENT AND AVERAGE ANNUAL COMPOUND GROWTH, 1960-2005

	Percentage Improvement 1960-2005	Average Annual Compound Growth Rate
Latin America	40.9%	.77%
World	45%	.83%

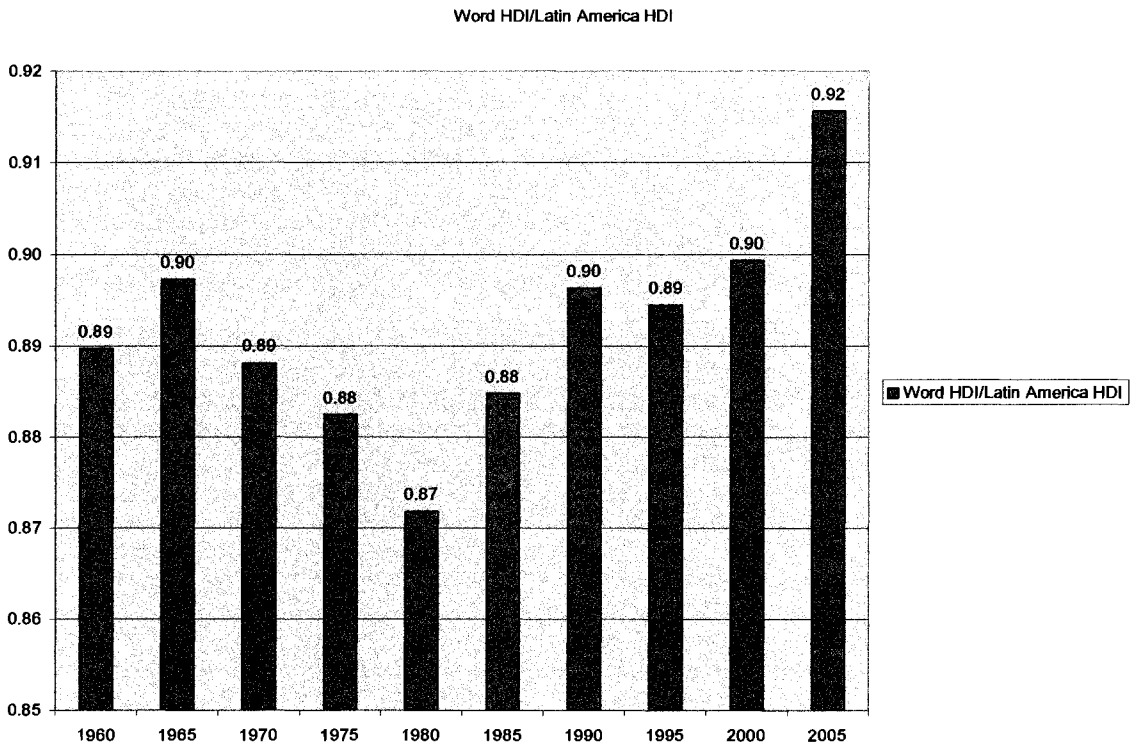
SOURCE: Calculated from table 3-27.

Unlike the comparison with the United States, Latin America ranks ahead of the world average for the entire 1960-2005 period in HDI score. Therefore, there is no gap

for Latin America to narrow; it is the world average that is attempting to narrow the gap with Latin America.

Although Latin America still ranks ahead of the world average in 2005, the relative gap between Latin America and the world average is narrowed. This is because the world average grows 4% more than Latin America based on the growth differentials (45% world average and 41% Latin America). As the following chart shows, the world average increases from 89% of Latin America's HDI value in 1960 to 92% in 2005.

Chart 3-12
WORLD HDI AS A PERCENT OF LATIN AMERICA HDI, 1960-2005



SOURCE: Calculated from table 3-27.

Latin America and other World Regions

The HDI scores, regional ranking in terms of HDI score, percentage improvement, and average annual percentage improvement for 9 world regions are presented in the following table. The total country sample (including Latin America) is for 94 countries, representing over 90% of the world's population for the 1960-2005 period. The data appendix provides the list of countries included for each world region.

In terms of ranking, Latin America begins 1960 as the region with the fourth highest HDI ranking. Only North America, Western Europe, and Eastern Europe rank ahead of Latin America in social development in 1960. In 2005, Latin America maintains its number four spot in HDI regional rankings. Latin America has nearly caught up to Eastern Europe (only trailing it by .005), but the regions behind Latin America have also gained relative ground on Latin America. In particular, East Asia has nearly caught up to Latin America in social development, only trailing Latin America by .005.

Therefore we have a similar convergence as we saw with the PQLI index: Latin America, Eastern Europe, and East Asia are all nearly tied for third place all within a range of .01. South East Asia, which was the other member of this "convergence club" in the PQLI index, is fairly close to the club at .76 (only trailing East Asia by .3, Latin America by .35, and Eastern Europe by .4).

Table 3-29
RANKING BY HDI SCORE, HDI SCORE, PERCENTAGE IMPROVEMENT, AVERAGE ANNUAL RATE OF GROWTH FOR WORLD REGIONS, 1960-2005

	Region and 1960 rank	HDI 1960	Percentage Improvement	Avg. Annual Rate	2005 HDI	New Rank	New region ranking 2005
	(1) North America	.83	14.7%	.30%	.95	(1)	(1) North America
	(2) Western Europe	.77	21.3%	.43%	.94	(2)	(2) Western Europe
	(3) Eastern Europe	.75	6.5%	.14%	.80	(3)	(3) Eastern Europe
	(4) Latin America	.564	40.9%	.77%	.795	(4)	(4) Latin America
	(5) South East Asia	.44	73.2%	1.23%	.76	(6) -1	(5) East Asia
	(6) East Asia	.43	84.2%	1.37%	.79	(5) +1	(6) South East Asia
	(7) North Africa/Middle East	.38	90.4%	1.44%	.72	(7)	(7) North Africa/Middle East
	(8) South Asia	.32	87.7%	1.41%	.60	(8)	(8) South Asia
	(9) Sub-Saharan Africa	.30	66.5%	1.14%	.50	(9)	(9) Sub-Saharan Africa
	World	.50	45%	.83%	.73		

SOURCE: See data appendix for sources and methodology for calculating HDI score. Rankings by HDI score, percentage growth, and average annual compound growth are calculated based on the HDI scores in this table.

Given the proximity of the middle scores: Eastern Europe (at .800), Latin America (at .795), and East Asia (at .790) and South East Asia (at .76), and North Africa/Middle East (at .72), the overall picture is one of convergence. Five major world regions with distinct levels of social development in 1950, now all have achieved roughly the same level of social development (within 8/100 of each other).

Although all regions are improving, some are improving their HDI at a faster rate. In percentage terms, five regions improved their HDI more than Latin America (North Africa/Middle East, South Asia, Sub-Saharan Africa, East Asia, and South East Asia); meanwhile Latin America's improvement of 41% was greater than three regions (North America, Western Europe, and Eastern Europe.)

Latin America as the balancing point of World Development

As previously noted, Latin America's HDI growth was nearly identical to the world average (41% for Latin America, 45% for the world average). This observation highlights the role of Latin America as the fulcrum of the social development improvements-sitting in the middle between the more developed countries and less developed countries. In terms of HDI ranking Latin America sits in the middle in 1960 and 2005: Latin America began in the number four position in 1960 and remained in the number four spot in 2005. In terms of percentage improvement, Latin America also sits in the middle: Latin

America did not show the very strong improvement typified by the less developed countries (South East Asia 84%, East Asia 73%, North Africa/Middle East 90%, Sub-Saharan Africa 66.5%, South Asia 88%), nor the slow improvement typical of the more developed countries (North America 15%, Eastern Europe 6.5%, Western Europe 21%), but improved at a rate somewhat between the two, at 41%.

Overall, the clear trend here is one of convergence. Latin America in the middle position has gained ground on the world regions ahead of it (again improving at about the world average). Meanwhile, the regions behind Latin America have gained ground on it, some regions even nearly catching up with Latin America. In short, all gaps are decreasing.

The HDI "behind the scenes"

Latin America started with a HDI of .564 in 1960, and improved its HDI to .795 in 2005. What were the underlying changes that produced this HDI improvement? What exactly is the HDI measuring?

The following table gives the absolute change for each of the three HDI indicators. To calculate their contribution to the total HDI change of .228, the absolute change for each indicator is simply weighted by 1/3 just as in the HDI index.

Table 3-30

HDI INDICATOR ABSOLUTE CHANGE AND CONTRIBUTION TO TOTAL HDI INDEX CHANGE, 1960-2005
(Note: Absolute Change is 2005 value minus 1950 value. Contribution to total HDI change is 1/3 times the absolute change.)

Indicator	**1960**	**2005**	**Absolute Change**	**Contribution to total HDI change**
Life Expectancy Index	.534	.808	.274	.091
Education Index	.571	.870	.299	.1
GDP	.589	.709	.120	.04
Total HDI (average of 3 indicators)	**.564**	**.795**	**.231**	**.231**

SOURCE: See data appendix for sources and HDI calculation.

Using the data from the previous table, the following table calculates the percent that each indicator contributed to the overall HDI index absolute change (.231).

Table 3-31

PERCENTAGE CONTRIBUTION TO TOTAL HDI CHANGE

(Note: Percent change is calculated from the 1960-2005 scores in table 3-30. Indicator contribution to total change is absolute change of each indicator times 1/3. Percentage contribution to total HDI change is the indicator contribution to total change divided by the total PQLI index change of .231)

Indicator	**Percent Change of Indicator**	**Indicator contribution to total change/total change**	**Percentage contribution to total HDI change**
Education Index	52.4%	(.1/.231)	43.3%
Life Expectancy	51.3%	(.091/.231)	39.4%
GDP	20.3%	(.04/.231)	17.3%
Total HDI	**40.95%**	**(.231/231)**	**100%**

SOURCE: Calculated from table 3-30

As table 3-31 reveals, the Education Index was responsible for the majority of the change (43%), followed by Life Expectancy (39%), and then GDP (17%). On the surface, the contribution of each indicator to the total change makes sense: the Education Index showed the biggest improvement (52.4%) and therefore contributed the most to the

total HDI change; likewise Life Expectancy posted the next biggest improvement (51.3%) and contributed the second most to the total change; lastly, GDP registered the least percentage change and therefore contributed the lowest to the overall HDI change

However, this explanation is incomplete. The percentage improvement of each indicator is not the sole determinant of total HDI change. If this were the case, the total HDI would have improved 41.33% rather than 40.95 % (taking an average of each individual indicator improvement: (52.4+51.3+20.3)/3=41.33%)

Weighting Bias

The other factor is the initial starting point for each indicator. Those indicators with a higher starting base are implicitly weighted more than those with a lower starting base. This is because the higher base generates a greater absolute improvement than a lower base for the same percentage change (and therefore effecting the HDI change more).

To show the effects of this weighting bias, the following table shows a hypothetical HDI in which all of the indicators are assigned the same starting base. This table arbitrarily places 50 as the starting point for each indicator, yet uses the same percentage improvements from the actual HDI analysis.

Table 3-32
HDI WITH EQUAL STARTING BASES FOR EACH INDICATOR

Indicator	**Indicators with same base 1950**	**Percentage change of each indicator**	**Indicator number for 2005**	**Absolute change**	**Contribution to total PQLI change**
Education Index	50	52.4%	76.2	26.2	8.733
Life Expectancy	50	51.3%	75.65	25.65	8.5499
GDP	50	20.3%	60.15	10.15	3.383
Total PQLI	**50**		**70.66**	**20.66**	**20.66**

SOURCE: My hypothetical starting base of 50 times the actual percentage change of each indicator from table 3-31.

With equal starting bases, the total change for the HDI is altered (although very slightly). The percentage improvement of the HDI increases to 41.32% from the previous 40.95% improvement.

With equal starting bases, the percentage improvement of each indicator is now the sole criteria in the HDI index change. The percentage change for the HDI index of 41.32% is now simply an average of the percentage improvement of each indicator: (52.4+51.3+20.3)/3=41%. Unlike the actual index, the weighting bias of bases is removed.

What distortion is the unequal bases causing?

Overall the distortion is very small. As mentioned above, the weighting bias actually only reduces total HDI performance to 40.95% from 41.32%.

In the actual example, GDP had the highest weighting (because it had the highest starting base). Therefore, any given percent change in GDP produced a larger absolute change for the HDI total index compared to the other indicators with lower bases. The next highest base was education, followed by life expectancy. The last column of the following table shows the weighting bias in the actual HDI.

Table 3-33
PERCENT CHANGE OF EACH INDICATOR, PERCENT CONTRIBUTION OF EACH INDICATOR WITHOUT WEIGHTING BIAS FROM HYPOTHETICAL HDI, ACTUAL INDICATOR PERCENT CONTRIBUTION TO HDI, WEIGHTING BIAS
(Note: Weighting bias is which indicator is given the greatest weighting in the HDI because of starting bases-1 is the greatest weighting, 3 the least)

Indicator	Percentage change of each indicator	Indicator percent contribution to total HDI change (removing weighting bias)	Actual indicator contribution to HDI change	Weighting bias in PQLI
Education Index	52.4%	42.2%	43.3%	2
Life Expectancy	51.34%	41.38	39.4%	3
GDP	20.3%	16.3%	17.3%	1

Although GDP is given the greatest weighting (see table 3-33), its improvement is the lowest, resulting in an understatement of final HDI. However this understatement is somewhat countered by the Education Index, which is the second strongest in weighting and has the strongest improvement. Finally, life expectancy has the lowest weighting, but a performance almost equal to the Education Index. The net effect of these unequal weightings is a slight reduction in total HDI. Therefore, the hypothetical HDI (with equal bases) shows a slightly stronger improvement 41.32% than the actual HDI 40.95%.

Table 3-33 also shows the percentage contribution of each indicator in our hypothetical example with the base-weighting bias removed, and the actual contribution in the HDI analysis (with unequal bases). In our hypothetical example the weight of life expectancy is increased from 39.4% to 41.38% because in the actual sample, life expectancy starts with the lowest initial base (.534). Therefore, its strong percentage increase is diluted by its lower initial starting base in the actual HDI, but increased in the un-weighted hypothetical example. The percentage contributions of both GDP and the Education Index are lowered (in the hypothetical example) because their higher base numbers, .589 and .571 are equalized with life expectancy. With equalized bases, their percentage contributions are reduced in the hypothetical example (but are more in the actual HDI due to their higher starting bases).

If we remove the weighting bias (as in the hypothetical example), the HDI change is exactly an average of the three indicators improvement. Total HDI change is 41.33%

which is the average of each of the three indicators individual percent improvement: (52.4+51.34+20.3)/3=41.34%.

However, in the actual HDI analysis (with unequal weightings), the total percentage change is not merely an average of the three individual indicators improvement. Again, this is because the differing starting bases weight each indicator differently-those with a higher starting base will have a greater effect on total HDI change than those with a smaller base for the same percentage indicator change. So although in theory, the HDI is 1/3 Education Index, 1/3 Life Expectancy, and 1/3 GDP, the weighting bias alters the surface weighting. The following table shows the actual weightings for the HDI.

Table 3-34
EXPLICIT/THEORETICAL AND IMPLICIT/ACTUAL HDI WEIGHTING OF INDEX COMPONENTS

Indicator	**Theoretical Weighting**	**Actual weighting**
Education Index	33.33%	33.7%
Life expectancy	33.33%	31.5%
GDP	33.33%	34.76%

SOURCE: Theoretical weighting is just 1/3 for each indicator. Actual weighting is derived by using table 3-30 and taking each indicators absolute value in 1960 and dividing by the total absolute value of all 3 indicators.

In spite of the weighting bias, the last column of the table above reveals that it does not grossly distort our HDI results. The difference between the actual analysis (with unequal bases) and our hypothetical example is not so large as to where one indicator is overduly influencing the index due to its higher starting base. Indeed, although each indicator has a different starting base, the base spread is not very small: .534 for life expectancy, .571 for the Education Index, and .589 for GDP.

SUMMARY/CONCLUSION

Latin America has shown strong social improvement as measured by the HDI during the 1960-2005 period, improving from .564 in 1960 to .795 in 2005. Overall, Latin America improved its social development almost 41%, strongly outpacing the U.S. HDI improvement of 14%. Therefore, the social development gap between the U.S. and Latin America has narrowed, with Latin America improving from 71% of the U.S. HDI value in 1960 to 84% in 2005.

Latin America ranks ahead of the world average in social development throughout the 1960-2005 period. However, the world average improved slightly more than Latin America, growing at 45% compared to Latin America's 41%. Therefore, the world gains a little relative ground on Latin America, improving from 89% of Latin America's HDI value in 1960 to 92% in 2005.

Among the nine world regions, Latin America has the fourth highest HDI value in 1960 and 2005. There is a general convergence among all world regions, with each region gaining relative ground on the regions ahead of it. Therefore, while Latin America gains relative ground on the regions ahead of it (the U.S., Western Europe, and Eastern Europe), the 5 regions behind Latin America also gain relative ground on Latin America. Latin America therefore occupies the middle ground between the developed and less developed countries as measured by HDI.

Therefore, for Latin America, and for other world regions the social gap as measured by the HDI has strongly narrowed.

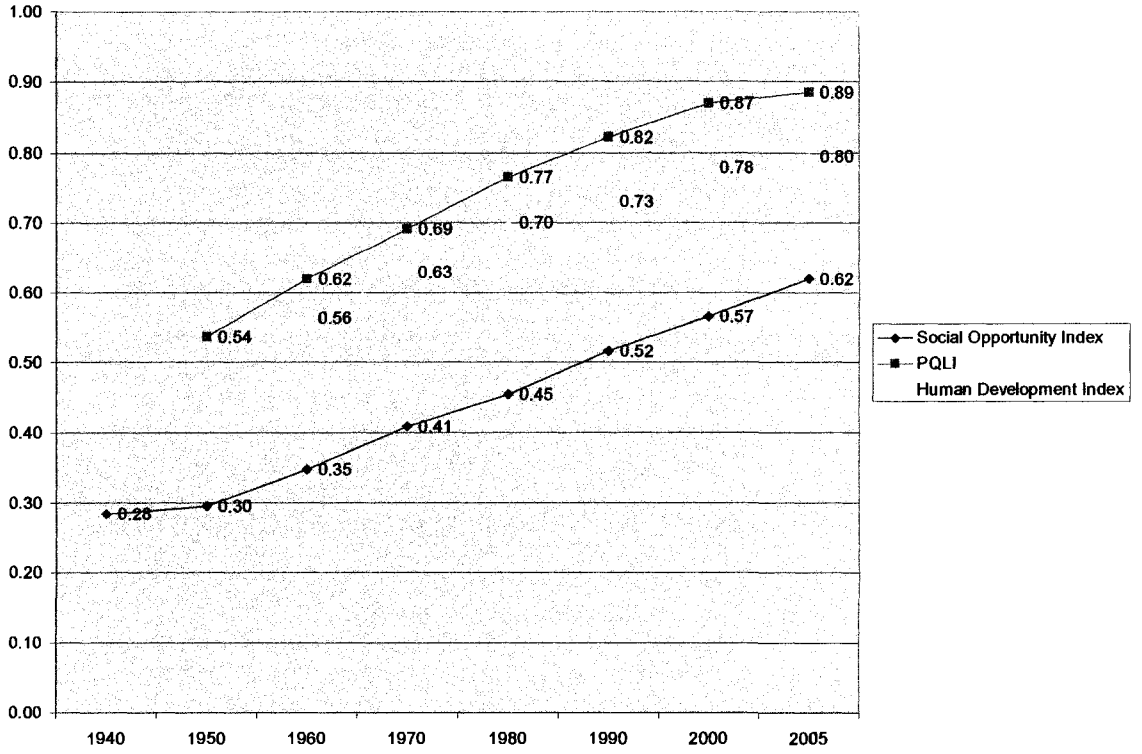
Section 5: Summary/Conclusion

In terms of social development, each of the three social indexes shows that Latin America has made strong absolute improvement. As measured by the SOI, Latin America improved 118% during the 1940-2005 period (1.21% average annual compound improvement), increasing from 28.4 in 1940 to 62 in 2005. As measured by the PQLI, Latin America also improved from a score of .537 in 1950 to .885 in 2005, an improvement of 65% (an average annual compound rate of .91%). For the HDI, Latin America improved from a score of .564 in 1960 to .795 in 2005, an improvement of nearly 41% (average annual compound improvement .77%)

Latin America and the U.S.

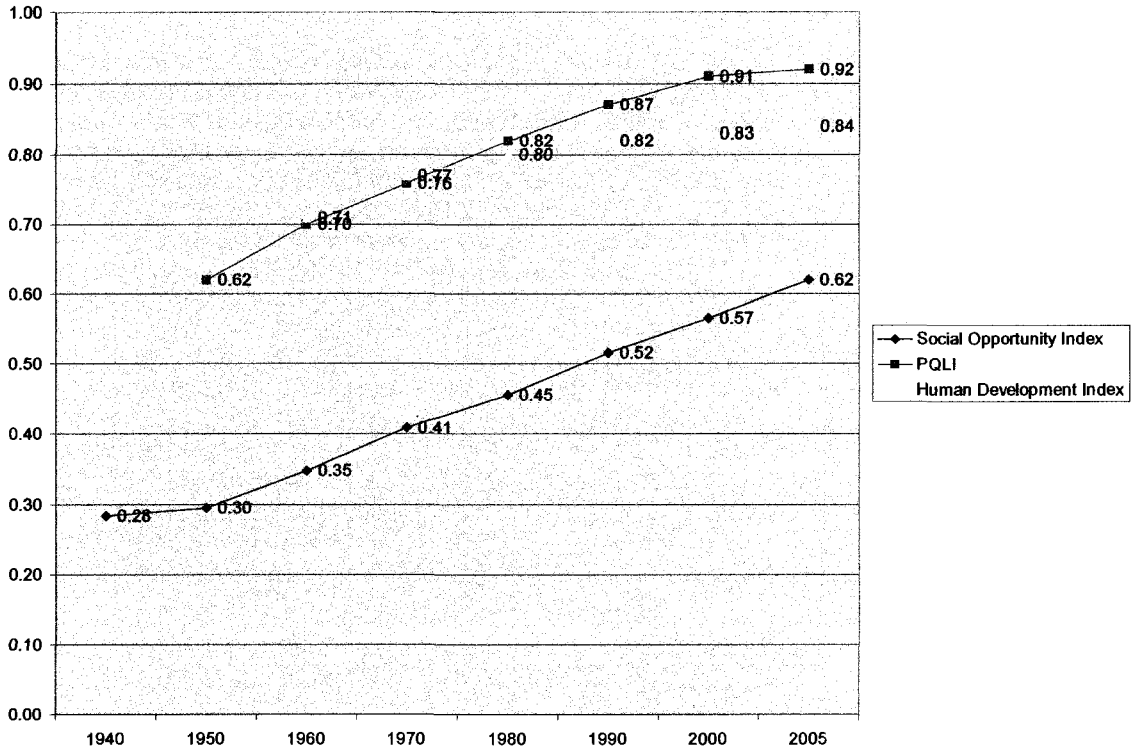
For each of the indexes, Latin America also improved at a rate faster than the U.S. and therefore narrowed the social development gap. For the SOI, Latin America improved from 28.4% of the U.S. value in 1940 to 62% in 2005. As measured by the PQLI, Latin America improved from 62% of the U.S. PQLI value in 1950 to 92% in 2005. For the HDI, Latin America begins 1960 at 71% of the U.S. HDI value and improves to 84% in 2005. The following graphs summarize Latin America's absolute performance and relative performance to the U.S. for each of the indexes.

Chart 3-13
LATIN AMERICA: SOI, PQLI, HDI INDEX SCORES, 1940-2005



SOURCE: Social Opportunity Index scores are from table 3-1, PQLI index numbers are from table 3-13, Human Development Index numbers are from table 3-24.

Chart 3-14
LATIN AMERICA SOCIAL DEVELOPMENT AS A PERCENT OF U.S. SOCIAL DEVELOPMENT: SOI, PQLI, HDI, 1940-2005
(U.S. = 100)



SOURCE: Social Opportunity Index scores are from table 3-1, PQLI index numbers are from table 3-13, Human Development Index numbers are from table 3-24.

Which one of the indexes is the most significant? If our goal is to measure social development, then the most significant indicators are the SOI and PQLI. Because the HDI includes GDP/C for 1/3 of the index, its score reflects a mix of social and economic development indicators, and is therefore not a true social index. In contrast, both the SOI and PQLI exclude economic indicators. However, the SOI is a much more broadly diversified index with 12 indicators compared to the PQLI which only has three indicators. Therefore, based on its diversified assessment of social development (and therefore also likely greater reliability) the SOI is likely the most significant of the indexes for measuring the social development of Latin America and the United States.

The good news is that no matter which index one selects, they all show the same trend of a narrowing social gap between Latin America and the United States. Our preferred measure, the SOI, shows the largest starting and ending absolute gap. However, it also produces the greatest average annual improvement of 1.21%. The PQLI shows the next highest average annual rate of improvement at .91%, followed by the HDI with an average annual improvement of .77%.

Latin America and the World Average

To compare the performance of Latin America to world regions, we can only utilize the PQLI and HDI. As discussed in the Social Opportunity Index section, because of the large number of indicators, the index can not be calculated for the countries in our global survey back to 1940.

Latin America begins and ends ahead of the world average for both the PQLI and HDI. Latin America improved at roughly the same pace as the world average for the PQLI (1 point less), improving 65% compared to the world average of 66%. For the HDI, Latin America improved 41% compared to 45% for the world average. Therefore, in general Latin America performed just under the world average for both the PQLI and HDI, and therefore the world average gained relative ground on Latin America.

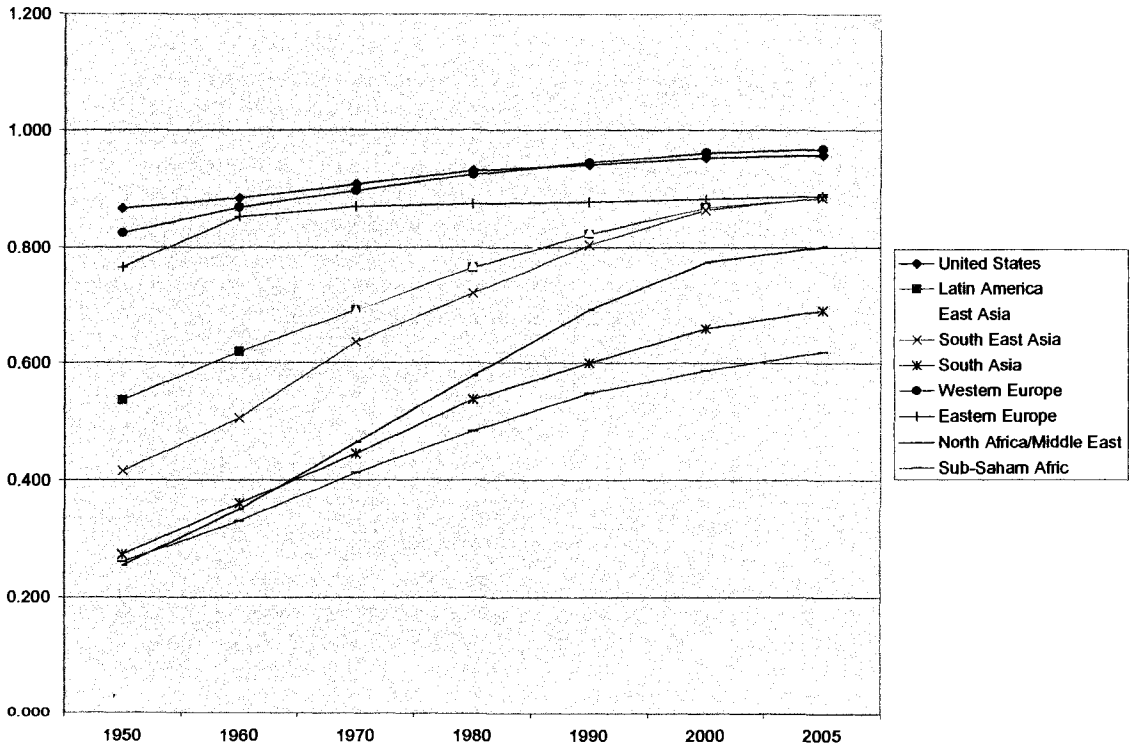
However, given the inclusion of the economic indicators in the HDI, the PQLI performance is more demonstrative of Latin America's social development relative the world. Therefore, the more accurate assessment is likely the PQLI version which shows Latin America's social development level consistently ahead of the world average and growing at the same pace as the world average.

Latin America and World Regions

In comparison to world regions, Latin America outperforms the regions ranked ahead of it in both the PQLI and HDI (North America, Western Europe, Eastern Europe) and narrows the gap. Yet the regions behind Latin America (East Asia, South East Asia, North Africa/Middle East, and Sub-Saharan Africa) also do the same, and narrow the gap with Latin America. In fact, in the PQLI Eastern Europe, Latin America, East Asia, and South East Asia end 2005 with the nearly identical scores.

In conclusion, the overall trend in social development is one of convergence. All gaps are narrowing-Latin America is narrowing the social gap with the regions ahead of it, while the regions behind Latin America are doing the same. Because the HDI includes economic indicators, the PQLI likely gives the best assessment of world social development trends. The following graph therefore utilizes the PQLI to show this global convergence.

Chart 3-15
PQLI FOR WORLD REGIONS, 1950-2005



SOURCE: Table 3-18.

CHAPTER FOUR

CONCLUSION

This section seeks to summarize the results of the analysis and to answer our original questions:

1. What has Latin America's absolute economic performance been?
2. What has its relative performance been compared to the U.S. and world regions? Is there a widening gap?
3. What has Latin America's absolute social performance been?
4. How does this social development compare to the U.S. and other world regions? Is there a widening gap?

Answering Question 1: Latin America's Absolute Economic Performance

There is only one series that provides data on Latin America's performance prior to 1900, that of Angus Maddison. According to his data (summarized in the following table), Latin America improved its GDP/C from $527 in 1700 to $691 in 1820. From 1820 through 1870, Latin America's GDP/C declines to $676, and then rebounds sharply to $1,113 by 1900.

Table 4-1
MADDISON SERIES: LATIN AMERICA GDP/C, 1700-1900
(U.S. 1990 dollars)

1700	1820	1870	1900
527	691	676	1,113

SOURCE: See data appendix for Maddison sources and methodology.

Based on Maddison's data, Latin America more than doubled its GDP/C from between 1700 and 1900 (with a significant part of the gain coming in the last 30 years of the 19th century).

During the 20th century, Latin America increases the pace of its progress. The following table presents Latin America's GDP/C for each of the series for which we have data for 1900 and 2000.

Table 4-2
SUMMARY TABLE: LATIN AMERICA GDP/C, 1900-2000

	1900	1950	1980	2000
Maddison (1990 dollars)	1,113	2,503	5,440	5,893
Hofman 9 (1980 dollars)	671	1544	3747	3,991
Oxlad DER 9 (1970 dollars)	159	337	766	837
Oxlad PPP 8 (1970 dollars)	210	432	975	1077

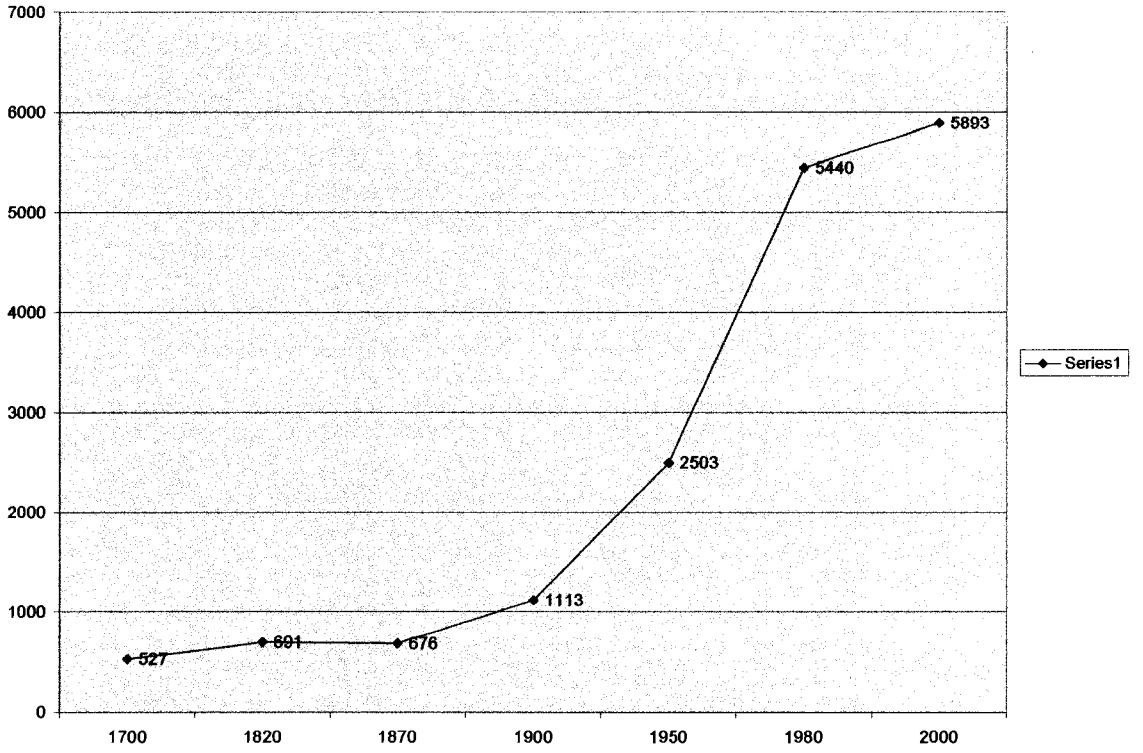
SOURCE: Tables 2-105, 2-85, 2-54, and 2-70.

Each series shows an impressive gain for Latin America, with a five to six fold increase in GDP/C in 100 years: Maddison's data and the Oxlad DER series both show Latin America increased its GDP/C 5.3 fold, Hofman's data yields an increase of nearly 6 fold, and the Oxlad PPP shows the "smallest" gain, an increase of 5.1 times GDP/C levels in 1900.

Therefore, the average well being of Latin America as measured by GDP/C has doubled between 1700 and 1900. Due to the growth of the 20th century, Latin Americans today are more than 5 times wealthier than the average Latin American in 1900.

This dramatic absolute improvement is portrayed in the following chart utilizing the data from Maddison's series.

Chart 4-1
MADDISON SERIES: LATIN AMERICAN GDP/C, 1700-2000
(U.S. 1990 dollars)



SOURCE: Tables 4-1 and 4-2.

Answering Question 2: Latin America Relative Economic Performance compared to the United States, World Average, and World Regions

a. United States

Table 4-3
MADDISON SERIES: LATIN AMERICA, U.S. GDP/C, 1700-2000
(U.S. 1990 dollars)

	1700	1820	1870	1900	1950	1980	2000
LA	527	691	676	1113	2503	5440	5893
US	527	1257	2445	4091	9561	18577	28403
World	615	667	873	1262	2113	4521	6055

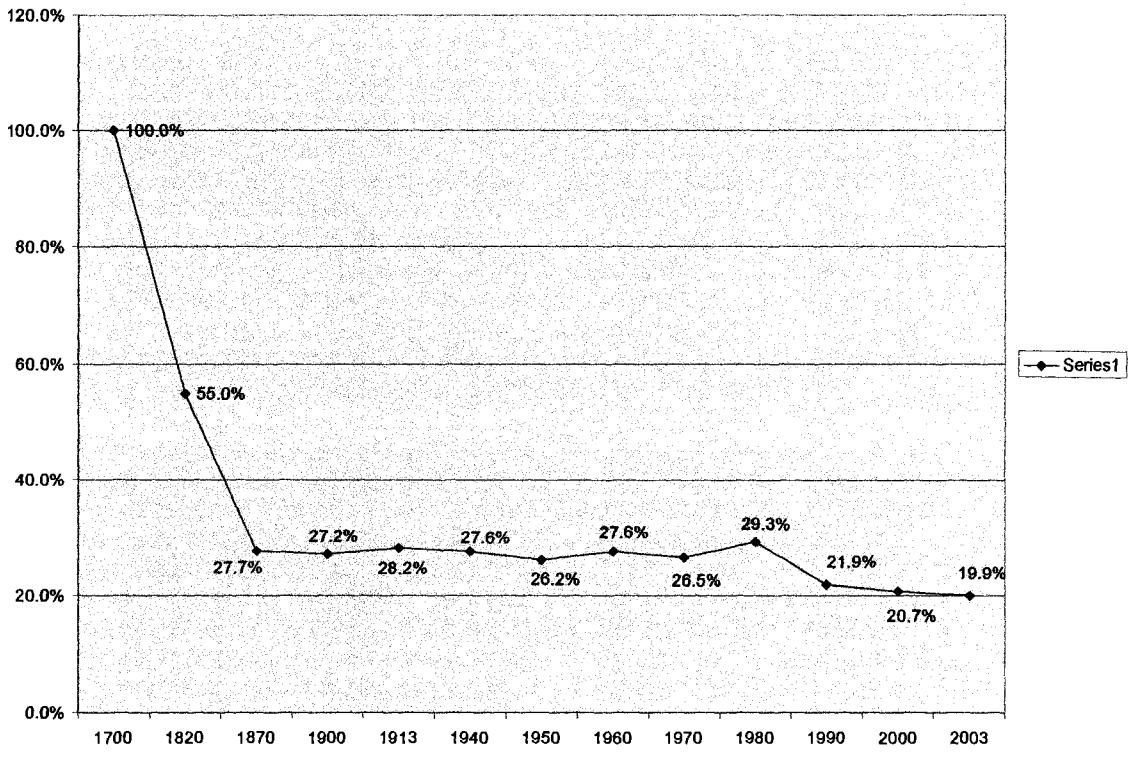
SOURCE: Table 2-105.

As the above table shows, Latin America and the U.S. both had the same GDP/C in 1700 at $527. However by the year 2000, U.S. GDP/C has risen to $28,403 while Latin America's has risen to only $5,893. Therefore, from 1700-2000 Latin America underperforms relative to the United States.

As the graph below shows, the gap begins in the 1700-1870 period, in which Latin America GDP/C fell from 100% of U.S. GDP/C to only 27.7% in 1870. Over the next 110 years, the gap remains fairly constant, with even a slight narrowing of the gap: Latin

America averages about 27-28% of U.S. GDP/C, reaching a high of 29.3% of U.S. GDP/C in 1980. The 1980-2000 period (primarily the 1980-90) is responsible for a further widening of the relative GDP/C gap, as Latin America's GDP/C declines from 29.3% of U.S. GDP/C in 1980 to 19.9% in 2000.

Chart 4-2
MADDISON SERIES: LATIN AMERICA GDP/C AS A PERCENT OF U.S. GDP/C, 1700-2003
(U.S. = 100)



SOURCE: Calculated from table 4-3.

However, the Latin America/U.S. comparison loses its significance given that every world region also lost relative ground to the U.S.

b. World Average

Table 4-4
MADDISON SERIES: LATIN AMERICA AND WORLD AVERAGE GDP/C, 1700-2000
(U.S. 1990 dollars)

	1700	1820	1870	1900	1950	1980	2000
LA	527	691	676	1113	2503	5440	5893
World	615	667	873	1262	2113	4521	6055

SOURCE: Table 2-105.

In 1700, the world average GDP/C is 117% of Latin America's GDP/C. Over the next 120 years, Latin America's GDP/C grows at an average annual compound rate of .23% compared to the world average of .07%. By 1820, Latin America's GDP/C has actually slightly passed the world average, reaching a GDP/C of $691 compared to the world average GDP/C of $667.

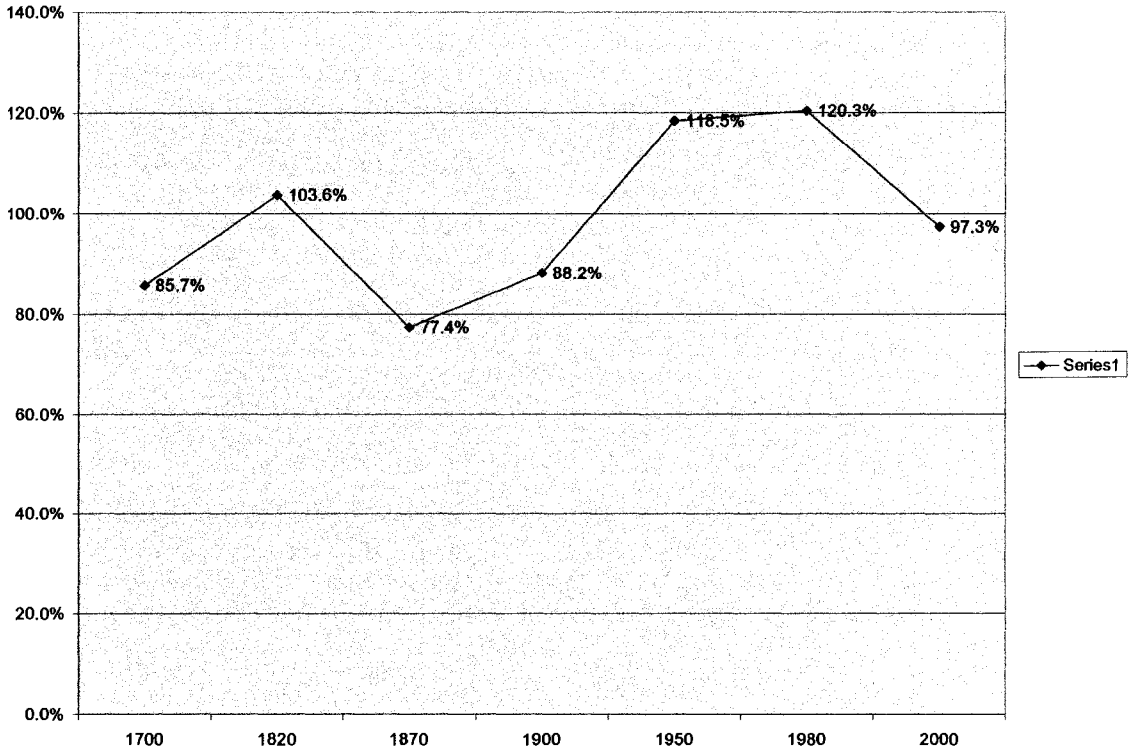
However, between 1820 and 1870, Latin America GDP/C growth is zero (actually -.04%), while the world average improves by .54%. Therefore, in 1870 the world average is once again ahead of Latin America at $873 compared to Latin America's $676.

From 1870 through 1900 and all of the 20th century, Latin America outpaces the world in GDP/C growth. From 1870 through 1900 Latin America's GDP/C grows at 1.68% compared to the world average growth of 1.24%. During the 20th century Latin America again averages 1.68%, while the world averages 1.58%. Therefore, from 1870 through 2000, Latin America has grown faster than the world average and narrowed its relative gap to the world average. In 1870 Latin America's GDP/C was only 77% of the world average GDP/C, by 2000 it had reached 97% of the world average.

The following chart summarizes Latin America's relative performance to the world average from 1700 through 2000.

Although Latin America narrows the GDP/C gap over the 1870-2000 period, the graph above shows the variation in this performance. Latin America gains relative ground from 1870 through 1980, reaching a peak of world GDP/C in 1980 at 120%, before declining to the 2000 value of 97.3% in 2000. Therefore, Latin America overall outperforms the world average for the entire 1870-2000 period, but after 1980 loses some of the relative gains it has made.

Chart 4-3
LATIN AMERICA GDP/C AS A PERCENT OF WORLD AVERAGE GDP/C
1700-2000



SOURCE: Calculated from table 4-4.

C. Major World Regions

From 1700 through 2000, the U.S. is the world leader in GDP/C growth (1.34%), followed by Western Europe (.99%), and then Latin America (.81). Latin America therefore outperforms Eastern Europe, the former U.S.S.R., Asia, and Africa (along with the world average). Breaking these three centuries down further, Latin America maintains a favorable position relative to other world regions.

From 1700 through 1820, the U.S. is the leader for GDP/C growth at .73% followed by Latin America at .23%. For this period, Latin America outperforms every world region except the United States as the following table shows.

Table 4-5
MADDISON SERIES: WORLD REGIONAL AVERAGE ANNUAL COMPOUND GROWTH RATES, 1700-1820

	1700-1820
Latin America	0.23%
United States	0.73%
Western Europe	0.16%
Eastern Europe	0.10%
Former USSR	0.10%
Asia	0.01%
Africa	0.00%
World Average	0.07%

SOURCE: Table 2-109.

However, from 1820 through 1870, Latin America underperforms every world region except Asia, with negative growth of .04% (compared to Asia's negative .09%). Latin America rebounds strongly in the 1870 through 1900 period, and once again only trails the U.S. in GDP/C growth, outperforming every other region.

Table 4-6
MADDISON SERIES: WORLD REGIONAL AVERAGE ANNUAL COMPOUND GROWTH RATES, 1820-1900

	1820-1870	1870-1900
Latin America	-0.04%	1.68%
United States	1.34%	1.73%
Western Europe	0.98%	1.31%
Eastern Europe	0.63%	1.44%
Former USSR	0.63%	0.91%
Asia	-0.09%	0.46%
Africa	0.35%	0.62%
World Average	0.54%	1.24%

SOURCE: Table 2-109.

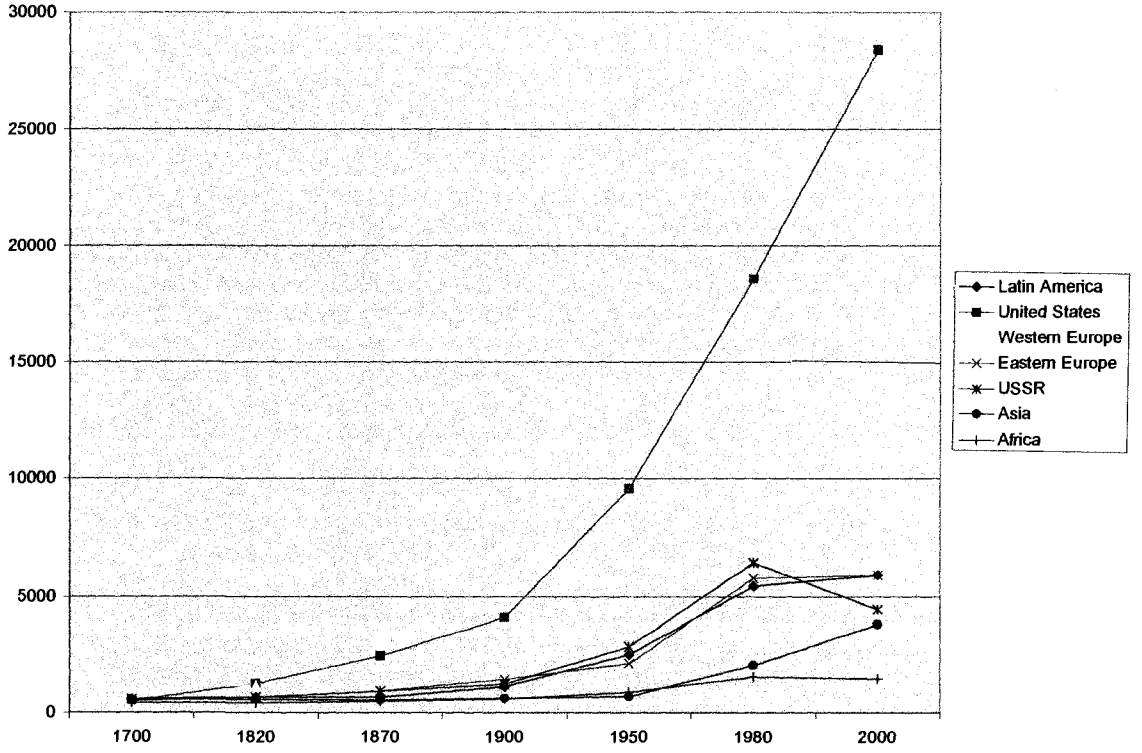
For the entire 20th century, the top GDP/C performers were the U.S. (1.96%), Western Europe (1.91%), Asia (1.8%), and then Latin America (1.68%). Latin America therefore outperforms Eastern Europe, the former U.S.S.R., and Africa (as well as the world average).

Table 4-7
MADDISON SERIES: WORLD REGIONAL AVERAGE ANNUAL COMPOUND GROWTH RATES, 1900-2000

	1900-2000
Latin America	1.68%
United States	1.96%
Western Europe	1.91%
Eastern Europe	1.42%
Former USSR	1.29%
Asia	1.80%
Africa	0.90%
World Average	1.58%

SOURCE: Table 2-109.

Chart 4-4
MADDISON SERIES: WORLD REGIONAL GDP/C, 1700-2000
(U.S. 1990 dollars)



SOURCE: Table 2-105.

To summarize the economic picture-Latin America experiences tremendous absolute growth from 1700 through 2000, with a GDP/C in 2000 over 11 times larger than the 1700 number.

The gap between Latin America and the U.S. begins in the 18th century and widens further in the 1820-1870 period, and again in the 1980-2000 period. However, all world regions lose relative ground to the U.S. between 1700 and 2000.

Latin America has the third highest growth of the major world regions and therefore only loses ground to the U.S. and Western Europe, and outperforms every other world region in relative terms.

For absolute rankings, it starts 1700 tied with the U.S. for second to last. By 1820 it has moved into the number three spot, but then declines to fifth in 1870. It starts 1900 still in the fifth spot for GDP/C, and improves to the 4th spot for GDP/C in 2000 (just 8 dollars behind Eastern Europe for the number three spot).

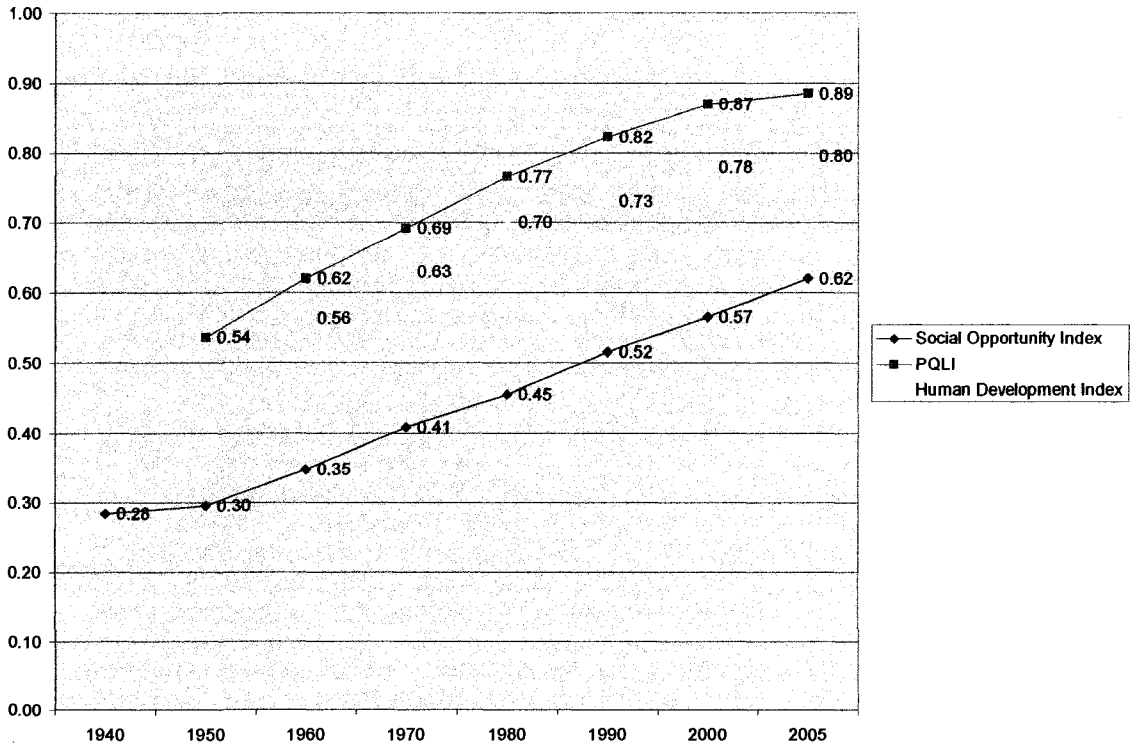
Answering Question 3: Latin America's Social Development (absolute performance)

In terms of social development, each of the three social indexes shows that Latin America has made strong absolute improvement. As measured by the SOI, Latin America improved 118% during the 1940-2005 period (1.21% average annual compound

improvement), increasing from 28.4 in 1940 to 62 in 2005. As measured by the PQLI, Latin America also improved from a score of .537 in 1950 to .885 in 2005, an improvement of 65%. For the HDI, Latin America improved from a score of .564 in 1960 to .795 in 2005, an improvement of nearly 41% (average annual compound improvement .77%)

The following chart summarizes the absolute gains for Latin America in each of these three indexes.

Chart 4-5
LATIN AMERICA SOCIAL INDEX SCORES: SOCIAL OPPORTUNITY INDEX, PHYSICAL QUALITY OF LIFE INDEX, HUMAN DEVELOPMENT INDEX, 1940-2005



SOURCE: Tables 3-1, 3-13, 3-24.

Answering Question four: Latin America's Social Development (relative performance)

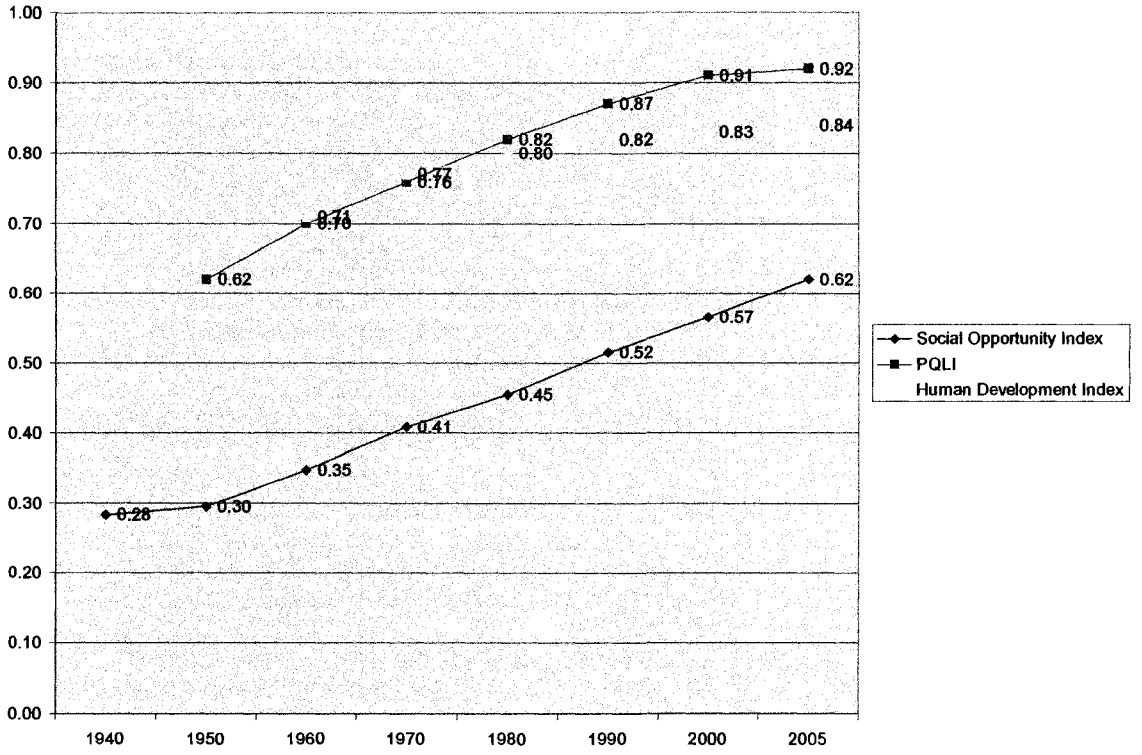
a. United States

The Social Opportunity Index has a built in comparison to the United States. Therefore, Latin America's index score in the SOI (as shown above in chart 4-5) is also its relative performance to the United States (shown in chart 4-6). The index score is Latin America's social development as a percent of U.S. social development. Using the SOI to compare relative social development, Latin America strongly outperforms the U.S., improving from 28% of the social development level of the U.S. in 1940 to 62% in 2005.

For both the PQLI and HDI, there is no built in comparison. Any index number can be compared with any other country or region. Taking the Latin America index as a percent of the U.S. index score, Latin America outperforms the U.S. in terms of the PQLI, improving from 62% of the U.S. value in 1950 to 92% in 2005. For the Human Development Index, Latin America also outperforms the U.S.-improving from 71% of the United States social level in 1960 to 84% in 2005.

The following chart summarizes Latin Americas performance relative to the United States for each of these three indexes.

Chart 4-6
LATIN AMERICA SOCIAL DEVELOPMENT AS A PERCENT OF U.S. SOCIAL DEVELOPMENT: SOI, PQLI, HDI
1940-2005
(U.S. = 100)



SOURCE: Tables 3-1, Chart 3-5, Chart 3-10.

b. World Average

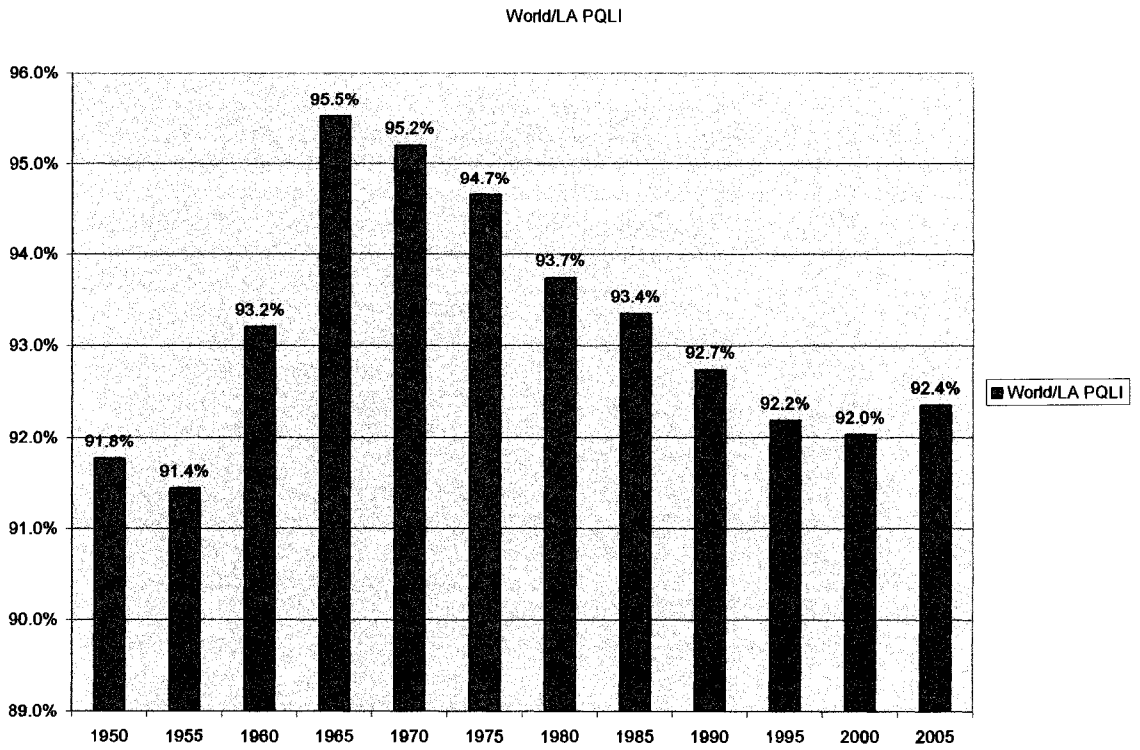
Because of the extensive number of items in the SOI, it can not be calculated for many world regions through 1940. Hence, the following analysis focuses on just the PQLI and HDI.

In terms of the world average social development, Latin America begins and ends ahead of the world average for both the PQLI and HDI. Latin America improved at roughly the same pace as the world average for the PQLI (1 point less), improving 65% compared to the world average of 66%. For the HDI, Latin America improved 41% compared to 45% for the world average.

Therefore, in general Latin America performed just under the world average for both the PQLI and HDI, and therefore the world average gained slight relative ground on Latin America. For the PQLI the world improved from 91.8% of Latin America's PQLI in 1950 to 92.4% in 2005; for the HDI the world improved from 89% of Latin America's HDI in 1960 to 92% in 2005.

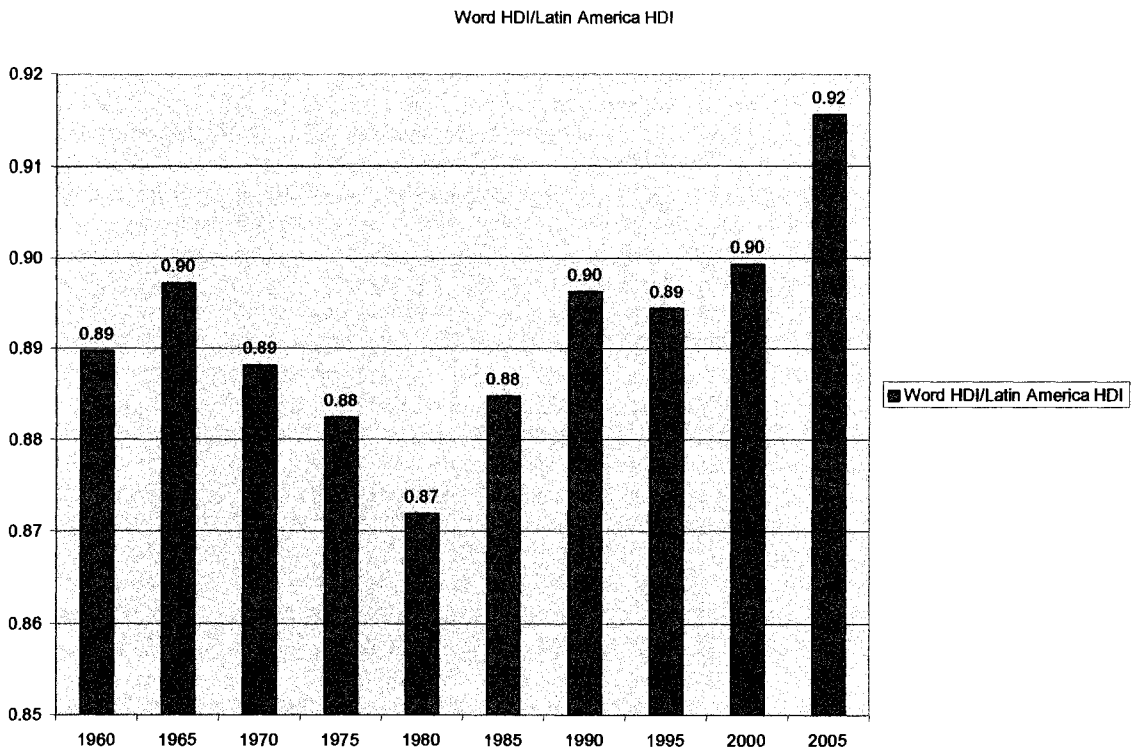
Since the HDI is not a pure social index, the more appropriate index is the PQLI. Therefore, Latin America's social development is best measured by the PQLI, which shows Latin America performed almost exactly at the world average. The following charts summarize Latin America's relative performance to the world average for the PQLI and HDI.

Chart 4-7
WORLD PQLI AS A PERCENT OF LATIN AMERICA PQLI, 1950-2005



SOURCE: Chart 3-7.

Chart 4-8
WORLD HDI AS A PERCENT OF LATIN AMERICA HDI, 1960-2005



SOURCE: Chart 3-12.

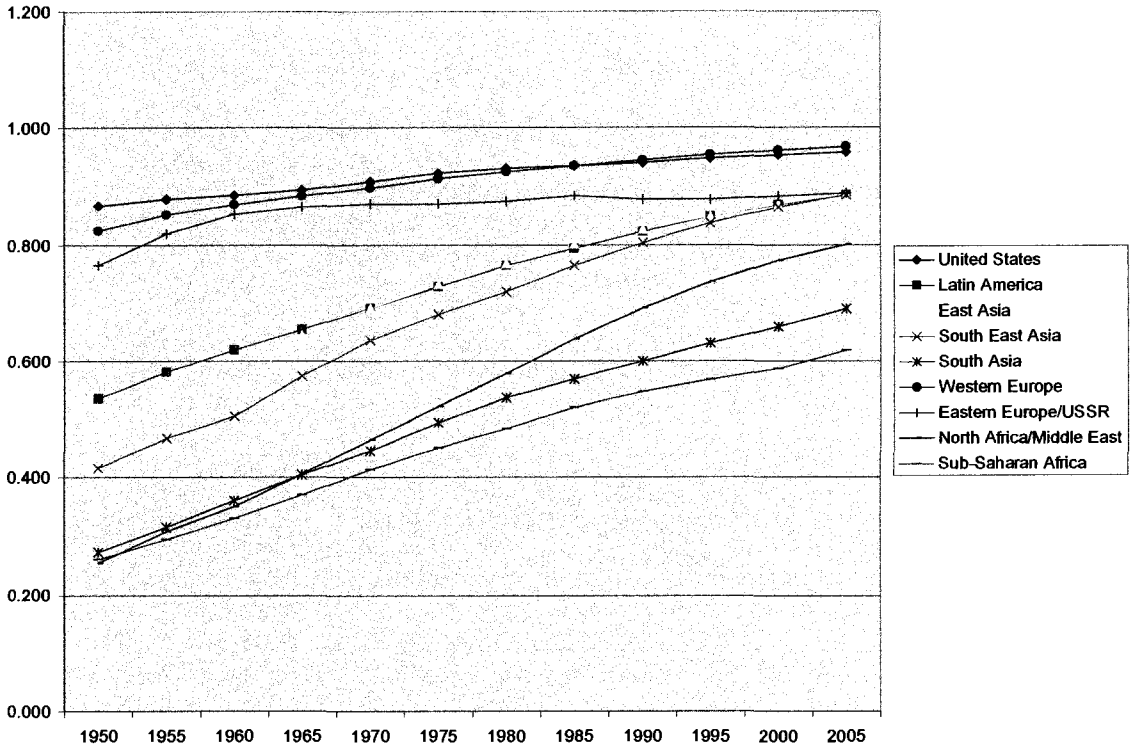
C. World Regions

For the world regions, Latin America outperforms the regions ranked ahead of it in PQLI and HDI and narrows the gap. Yet the regions behind Latin America also do the same, and narrow the gap with Latin America.

Latin America begins in 1950 as the number four region in terms of PQLI, and finishes in 2005 at number 5 (though really there is a virtual four way tie for third place). For the HDI, Latin America begins at the number four HDI region in 1960 and maintains that spot in 2005.

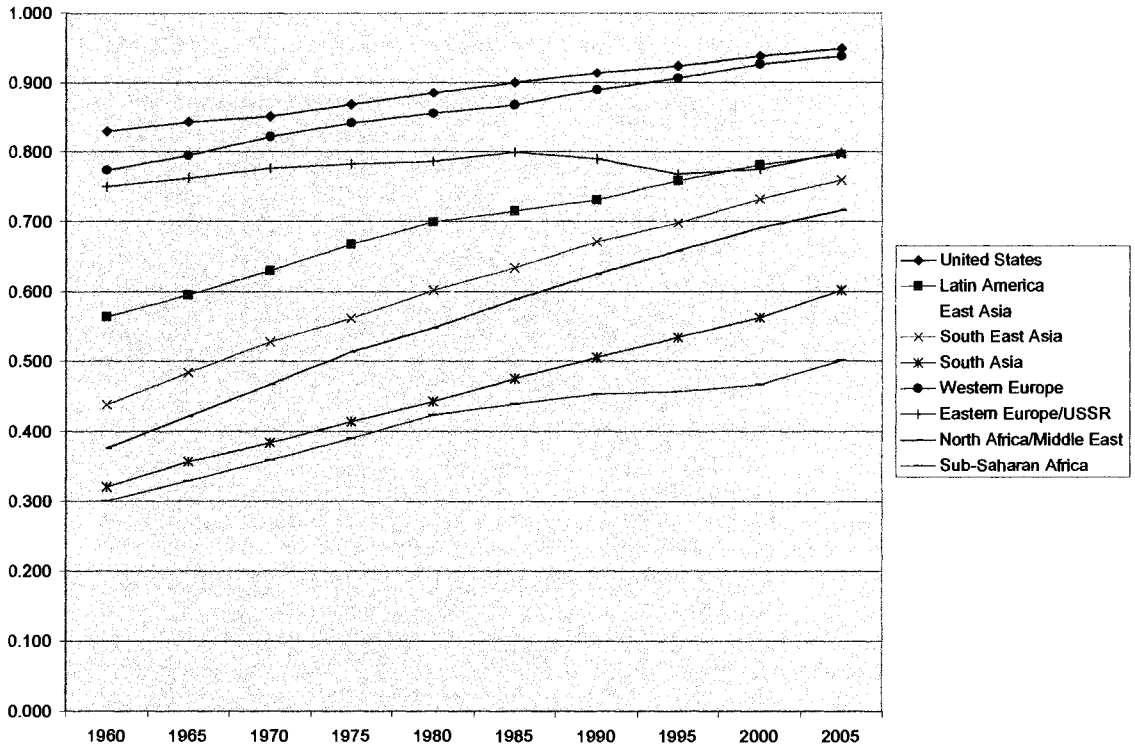
The following graphs demonstrate this overall convergence. The PQLI shows more overall convergence than the HDI because the HDI is not a pure social index, as 1/3 of the index is GDP/C. Therefore, the PQLI graph is more representative of the convergence in global social development.

Chart 4-9
PQLI: ABSOLUTE SCORES BY WORLD REGION, 1950-2005



SOURCE: Table 3-18.

Chart 4-10
HUMAN DEVELOPMENT INDEX: ABSOLUTE SCORES, 1960-2005



SOURCE: Table 3-29.

Summary

Summarizing these results, in economic development, the overall trend during the 19th century is one of strong absolute improvement, but with a slight widening in relative gaps between the top performers (the U.S., Western Europe) and the other major world regions. Latin America in the number three spot loses relative ground to the U.S and Western Europe, but gains relative ground on the rest of the world.

In social development, the overall trend during the 1950-2005 period is one of strong absolute improvement and relative improvement. In contrast to the economic picture, every region gains on every region ahead of it, leading to a general overall convergence. Latin America gains relative ground on the regions ahead of it (the U.S. and Western Europe) and the rest of the world gains relative ground on Latin America.

Therefore, the final answer to our question is that in absolute terms Latin America has greatly improved its economic and social position in the 20th century. In relative terms, there is a slight widening of the economic gap between Latin America and the U.S. (and Western Europe), but Latin America gains ground on the world average and every other major world region. For social conditions, the social gap narrows substantially, with Latin America gaining ground on the U.S. (and Western Europe). However, the regions behind Latin America also gain relative ground in social development.

Judging the results:

Absoulte vs. Relative: Which is more important?

How do we judge these results? Latin America improved strongly in absolute terms in social and economic development; yet in relative terms lost economic ground to the leaders while gaining relative social ground on the leaders.

Which matters more, absolute or relative? Should a country focus on improving its own economic development, or should a country focus on not just its own performance, but that performance relative to other countries? This is an ostensibly simple question, yet with large implications for determining whether a given countries economic development has been a success or a failure, or somewhere in between.

Focusing solely on relative performance may lead to several mental fallacies. For example, we may fall into the trap of false competitiveness-the idea that there is only a fixed pie, and that one is only better off if one is gaining ground relative to another. Economic and social development is not a zero sum game.

A second mental fallacy is that we may ignore the real bottom line, absolute progress. Would country A be better off if it improved its GDP/C by 10% while country B improved 5%, or would they be better off with an improvement of 15% while country B improved 20%? If one only focuses on the relative, one would choose the first answer-settling for a 10% absolute improvement, and relative gain of 5% over country B. However, clearly country A would be better off with a 15% absolute improvement, even if this meant "losing" relative ground to country B by 5%.

Therefore, while comparisons are a natural human tendency, it is important to remember that it is absolute improvements that really count for a country. It should be clear that absolute gain is paramount.

Economic vs. Social

The true goal of economic development is to improve the material well-being of a country's people. Although measuring social indicators is more complex than utilizing the single measure of GDP, these indicators are clearly the most meaningful, as they measure the bottom line results.

Therefore, for Latin America the results of this analysis are very positive. Latin America has experienced a tremendous improvement in social conditions, most importantly in absolute terms (but also in relative terms). To cite just one very important indicator, life expectancy has almost doubled in the last 65 years. Average life expectancy in 1940 was 40.3, in 2005 it is 73.5!

What has driven the tremendous success in social development? Has it been government social policies, economic growth, world advances in healthcare? Having established a general picture of economic and social development trends in Latin America, the next important step is to try and determine what has been responsible for the successes and setbacks in economic and social development. How can Latin America do even better for its people?

With his usual insight, Alfred Marshall again warns us to avoid the "moral torpor" of contenting ourselves with the progress we have made and to continue to find ways to reduce the existence of poverty and want in the world. Just as Marshall chastised those who would ignore the progress that has been achieved, he is equally critical of those today who "with our modern resources and knowledge, should look contentedly on the continued destruction of all that is worth having in multitudes of human lives, and solace ourselves with the reflection that anyhow the evils of our own age are less than those of the past."[1]

[1] Alfred Marshall, *Principles of Economics* (London: The Macmillan Press Ltd., 1890), 601.

APPENDIX A: ECONOMIC SOURCES

1. Economic Commission for Latin America (ECLA) Series dollar exchange rate (DER) series: uses 1970 for the base year with dollar exchange rates:

The primary base for this series is from the Economic Commission for Latin America's *Series Históricas del Crecimiento de América Latina* (SHCAL) taken from *Statistical Abstract of Latin America volume 21* and *Statistical Abstract of Latin America volume 22* [1] [2].

I have taken the ECLA series and converted the data into dollars using dollar exchange rates for this series and purchasing power parity rates for series two below. The original series starts in 1940 and leaves off in the mid 1970s. However, I have updated the series through 2005 using ECLA's *Statistical Yearbook for Latin America and the Caribbean* 1984 and 2004[3] [4], and ECLA's *América Latina y el Caribe: proyecciones 2006-2007*[5].

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[1] James Wilkie and Stephen Haber, *Statistical Abstract of Latin America*, volume 21 (Los Angeles: UCLA Latin American Center, 1981).
[2] James Wilkie and Stephen Haber, *Statistical Abstract of Latin America*, volume 22 (Los Angeles: UCLA Latin American Center, 1982).

[3] Economic Commission for Latin America, *Statistical Yearbook for Latin America and the Caribbean 1984* (Santiago: United Nations, 1985).
[4] Economic Commission for Latin America, *Statistical Yearbook for Latin America and the Caribbean 2004* (Santiago: United Nations, 2005).

[5] Economic Commission for Latin America, *América Latina y el Caribe: proyecciones 2006-2007* (Santiago: United Nations, 2005).

2. Economic Commission for Latin America (ECLA) purchasing power parity (PPP) Series PPP: uses 1970 for the base year with PPP exchange rates:

The source for this series is identical to series one above. The only difference is the exchange rate series I used for conversion was purchasing power parity (PPP) for this series, as opposed to the dollar exchange rate (DER) for series one above.

Additional notes for Series 1 and 2:

United States Data

Population:

1940-1945 population-

Data is from *Statistical Abstract of Latin America* volume 37.

1950-2005 population-

Data is from the U.N. World Population Prospects 2006 revision

GDP:

1940 and 1945 GDP-

Numbers are from Maddison's update to the *World Economy: Historical Statistics* entitled "World Population, GDP, and Per Capita GDP, 1-2003 AD" which is available on his webpage: (http://www.ggdc.net/maddison/). To convert his series which is based

in 1990 constant dollars to 1970 dollars, I used the IMF-IFS deflator for 1970 and 1990 from their on-line data base was used (27.5335/81.5893).

1950-2005 GDP-

Data are from the IMF-IFS on-line data base. The IMF deflators were used to convert the series into 1970 dollars.

Latin America Data

Population:

1940-1945 population-

Numbers are from Maddison's update to the *World Economy: Historical Statistics* entitled "World Population, GDP, and Per Capita GDP, 1-2003 AD" which is available on his webpage: (http://www.ggdc.net/maddison/).

1950-1999 population-

Data is from CEPAL 70/80/90 disk

2000-2005 population-

Data is from *Statistical Yearbook for Latin America and the Caribbean 2004* (CEPAL).

GDP:

1945-1976 GDP-

Data is from ECLA's *Series Historicas del Crecimiento de América Latina* (SHCAL) taken from *SALA 21* and *SALA 22* (which provides the series in local currency units and a series already converted to dollars)

Projecting/estimating GDP for countries without data back to 1940

Guatemala and Costa Rica had no 1945 data so I used the total Latin American growth rate (from 1945-1950) to project back their numbers to 1945.

Nine countries had no 1940 GDP data and their GDP in this series was calculated as follows:

For Bolivia, the Dominican Republic, Haiti, and Panama, I used their 1945 data and the average rate of growth for Latin America (from the other 16 countries 1940-1945) to project their numbers back to 1940.

El Salvador, Costa Rica, Guatemala, Nicaragua: 1940 data is Bulmer Thomas (see Thorp 320-321).

1940 data for Peru is from Hofman 1997.

All Cuban data is from Thorp, using 1965 prices.

Projecting data forward from 1976:

1977-1983:

I used GDP data from the *1984 Statistical Yearbook for Latin America and the Caribbean* (ECLA).

1984-2003:

I used growth rates from *Statistical Yearbook for Latin America and the Caribbean 2004* (ECLA).

2004-2005:

I used growth rates from *América Latina y el Caribe: proyecciones 2006-2007* (ECLA).

Exchange Rates

The exchange rates for the DER series are from SALA 21 and provided in the table below:

LATIN AMERICA DER EXCHANGE RATES (1970)

Argentina	3.7917
Brazil	11.88
Bolivia	4.59
Chile	11.2775
Costa Rica	18.4432
Colombia	6.625
Dominican Republic	1
Ecuador	20.9167
El Salvador	2.5
Guatemala	1
Haiti	5
Honduras	1
Mexico	12.5
Nicaragua	7
Panama	1
Paraguay	126
Peru	38.7
Uruguay	248
Venezuela	4.45

SOURCE: SALA 21.

The exchange rates used for the PPP series are from *Statistical Yearbook 1984*, and are presented in the following table.

LATIN AMERICA PPP EXCHANGE RATES (1970)

Argentina	2.95
Bolivia	9.03
Brazil	4.14
Chile	10.87
Colombia	10.68
Costa Rica	5.09
Dominican Republic	0.87
Ecuador	14
El Salvador	1.7
Guatemala	0.81
Haiti	3.99
Honduras	1.75
Mexico	8.88
Nicaragua	6.41
Panama	0.76
Paraguay	85.41
Peru	30.72
Uruguay	198.68
Venezuela	3.96

SOURCE: *Statistical Yearbook for Latin America and the Caribbean 1984.*

3. Thorp Series: uses 1970 for the base year with PPP exchange rates

The sources for this series are from Rosemary Thorp's 1998 work entitled *Progress, Poverty, and Exclusion: An Economic History of Latin America in the 20th Century*[6]. The key source for Thorp's work is the same as for our first two series: the Economic Commission for Latin America's *Series históricas del crecimiento de América Latina*[7]. However, Thorp has used a variety of sources to project data for many of the countries back to 1900. In addition, Thorp has also projected the data forward through 1995 using different sources than in series one and two.

Another difference is that Thorp's work has used three year averages and already applied purchasing power parity rates to convert the series to dollars. Further details on Thorp's sources are provided in appendix II of her work.

Additional Notes:

Population Data-

Population data for Latin America is from the Statistical Appendix of *Progress, Poverty and Exclusion*, Appendix I.1. United States Population data is from *SALA 37*.

GDP Data-

[6] Rosemary Thorp, *Progress, Poverty, and Exclusion: An Economic History of Latin America in the 20th Century* (New York: Inter-American Development Bank, 1998).
[7] Economic Commission for Latin America, *Series históricas del crecimiento de América Latina* (Santiago: United Nations, 1978).

U.S. and Latin America GDP data are also provided in the Statistical Appendix, in table IX.1. Thorp provides GDP/C data using PPP prices and three year averages. To transfer the GDP/C to GDP, I utilized Thorp's population series described above and for the U.S., the *SALA 37* series.

4. Oxford Latin American Economic History Database (OXLAD) Series dollar exchange rates (DER): uses 1970 for the base year with dollar exchange rates

The source for this series is the Oxford Latin American Economic History Database, maintained by the Latin American Centre at Oxford University[8]. The sources for this series are nearly identical to the Thorp series above. However, this series provides the data in local currency units. I have taken the local currency unit series and applied dollar exchange rates to create this series, and purchasing power parity rates to create the series below.

5. Oxford Latin American Economic History Database (OXLAD) Series purchasing power parity (PPP): uses 1970 for the base year with PPP exchange rates:

The sources for this series are identical to series four above. The only difference is that I have transferred this series into dollars using purchasing power parity exchange rates while series four utilizes dollar exchange rates.

[8] Oxford Latin American Economic History Database available at: http://oxlad.qeh.ox.ac.uk/

Additional notes for series 4 and 5:

United States data

Population:

1900-1980-

Data is from *SALA 37*.

1985-2000-

Data is from the IMF IFS on-line series.

GDP:

1950-2000-

Data is from the IMF/IFS on-line.

1900-1945-

Data is from Angus Maddison *The World Economy a Millenial Perspective*. Data was transferred from 1990 (Maddison series) to 1970 using the deflator from IMF IFS on line.

Latin America Data:

Population-

Latin America's population from 1900-2000 is from the Oxford Latin American Economic History Database.

GDP PPP-

All GDP data is from the Oxford Latin American Economic History Database.

-There was no data for Cuba except a constant 1970 local currency unit series using the official exchange rate of 1 Cuban peso= 1 dollar. This series is used in the PPP series because there is no PPP data for Cuba.

-Four countries had no 1940 data (Panama, Haiti, Dominican Republic, and Bolivia). I used the 1940-45 average for the other 16 Latin American countries to project their data back to 1940.

GDP DER-

This series was constructed using a constant 1970 local currency unit series and a nominal exchange rate series from the Oxford Latin American Economic History Database.

Four countries had no 1940 data (Panama, Haiti, Dominican Republic, and Bolivia). I used the 1940-45 average for the other 16 Latin American countries to project their data back to 1940.

6. Hofman Series: uses 1980 for the base year with PPP exchange rates:

The data for this series is largely based on Andre Hofman's *The Economic Development of Latin America in the Twentieth Century*[9]. Andre Hofman has provided me with his most recent updates to this work, which broadens the number of countries and the time period of the work.

Hofman uses a variety of sources for his data before 1950, each detailed in appendix B of his work. For data beyond 1950, Hofman primarily uses data "from currently collected official estimates by ECLAC corresponding to the most recent revision of the United Nations System of National Accounts (SNA)."[10] Hofman utilizes 1980 for his base year and has converted the series to dollars using purchasing power parity exchange rates.

7. United Nations (UN) Series: uses 1990 as the base year with dollar exchange rates

The United Nations Series is taken from the United Nations Common Database (UNCDB) National Accounts Main Aggregates.[11] This series uses 1990 for its base year and dollar exchange rates.

Additional Notes:

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[9] Andre Hofman, The Economic Development of Latin America in the Twentieth Century (Northampton: Edward Elgar, 2001).
[10] Hofman, 159.
[11] United Nations Common Database, (http://unstats.un.org/unsd/snaama/selectionbasicFast.asp).

Population-

Data is from World Population Prospects the 2006 revision (United Nations)

8. Angus Maddison Series: uses 1990 as the base year with PPP exchanger rates:

The data for this series are from Angus Maddison's update to the *World Economy: Historical Statistics* entitled "World Population, GDP, and Per Capita GDP, 1-2003 AD"[12]. Maddison utilizes a variety of sources for his data including specific country studies and national data. Maddison uses 1990 for his base year and has converted his data to dollars using purchasing power parity exchange rates.

Population-

Numbers are from Maddison's update to the *World Economy: Historical Statistics* entitled "World Population, GDP, and Per Capita GDP, 1-2003 AD" which is available on his webpage: (http://www.ggdc.net/maddison/).

GDP-

Numbers are from Maddison's update to the *World Economy: Historical Statistics* entitled "World Population, GDP, and Per Capita GDP, 1-2003 AD" which is available on his webpage: (http://www.ggdc.net/maddison/).

[12] Angus Maddison "World Population, GDP, and Per Capita GDP, 1-2003 AD" available on his webpage: (http://www.ggdc.net/maddison/).

Notes:

- For 1900 the series had data for Total Asia and 16 East Asia, but not Western Asia and 29 East Asia. The differential was 56,159 (Total Asia-16 East Asia). I took the percentage GDP of 29 East Asia/West Asia for 1870 and 1913 and applied that to the differential (56,159) to come up with numbers for West Asia and 29 East Asia for 1900. To obtain the population for West Asia for 1900, I took differential between 1913-1870, and multiplied by 75% and added the result to the 1870 number.

-For 1940 the series had data for Total Asia, but no separate data for West Asia and East Asia. I took the 1950 ratio and applied it to the 1940 total Asia GDP to divide it into East and West Asia.

9. International Monetary Fund (IMF) Current Series: presents unadjusted (current) GDP with dollar exchange rates:

The source for this series is the International Monetary Funds own country data sources presented in their *International Financial Statistics* database[13]. Unlike the other series, the data in this series is not converted into a common base year. The current local currency unit series are converted to dollars using dollar exchange rates for each given year.

[13] International Monetary Fund, *International Financial Statistics*, available on their webpage (http://www.imfstatistics.org/imf/logon.aspx).

10. World Development Indicators (WDI)Current Series: presents unadjusted (current) GDP with PPP exchange rates:

The data for this series is derived from the World Development Indicators database[14]. The data is derived from World Bank sources and just like the IMF series above is not converted into a common base year. Rather, each year's local currency series is converted to dollars using purchasing power parity exchange rates for each given year.

[14] World Bank, World Development Indicators database, available on web page (http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20398986~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html).

APPENDIX B: SOCIAL SOURCES

1940 data

All 1940 data is from *Quantitative Latin American Studies: Methods and Findings*[1].

Life Expectancy:

1950-2005 is from *U.N. World Population Prospects: The 2006 revision*[2]. For the United States, 1940 data is from Rosemary Thorp's *Progress, Poverty, Exclusion* and the U.S. Census Bureau.

Infant Mortality

1950-2005 is from *U.N. World Population Prospects: The 2006 revision*[3]. 1940 United States Data is from U.S. Historical Statistics.

Hospital Beds:

1960-2005 is from World Development Indicators database.

1940 and 1950 data is from Wilkie for Latin America.

U.S. data is from Wilkie for 1940 and Historical Statistics of the U.S. for 1950.

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[1] James Wilkie and Maj-Britt Nilsson, "Projecting the HEC (Health, Education, and Communication) Index for Latin America Back to 1940, Quantitative Latin American Studies, Methods and Findings (Los Angeles: UCLA Latin American Center Publications, University of California, 1977).

[2] United Nations, *World Population Prospects: The 2006 Revision.* Available on web site at (http://esa.un.org/unpp/).

[3] United Nations, *World Population Prospects: The 2006 Revision.* Available on web site at (http://esa.un.org/unpp/).

Doctors per 1000 Inhabitants

1960-2005 is from World Development Indicators

1940 and 1950 for Latin America is from Wilkie. 1940 and 1950 for the U.S. is from U.S. Historical Statistics.

Persons per Dentist:

1940-1990 data is from Wilkie.

2000, 2005 is from the Pan American Health Organization for both Latin America and the U.S.

Literacy

1970-2005
UNESCO/UIS Estimates, from July 2002 revision

1950-1970
Statistics of Educational Attainment and Illiteracy 1945-1974 UNESCO

Enrolment

1960, 1965 from UNESCO 78/79
1970, 75, 80, 85 from UNESCO 98

1990 on from UNESCO/UIS data

Persons per Motor Vehicle

1940-1970 Wilkie

1980-2005: UN Database

Telephones per 100 inhabitants.

1940-1970 is from Wilkie

1980-2005
World Development Indicators

News circulation per 1,000 inhabitants

1950-1960 is from Wilkie.

1970, 1980, 1990 data is from UNESCO SY 99

GDP Data

The GDP data for the Human Development Index is from the World Development Indicator database. I used the 2000 constant dollar series and used their PPP/DER conversion factor for 2000 to convert the series to PPP.

BIBLIOGRAPHY

"Alternative Aggregation Methodologies for GDP." . In U.N., *World Economic and Social Survey*. New York, 1985.

Bairoch, Paul. *The Economic Development of the Third World Since 1900.* Berkeley: University of California Press, 1975.

Bannock, Graham, Baxter, Ron, and Davis, Evan. *Dictionary of Economics*. Princeton, New Jersey: Bloomberg Press, 2003.

Bulmer-Thomas, Victor. *The Political Economy of Central America Since 1920.* Cambridge; New York: Cambridge University Press, 1987.

Brundenius, Claes, and Mats Lundahl, eds. *Development Strategies and Basic Needs in Latin America.* Boulder: Westview Press, 1982.

Coatsworth, John H. "Economic and Institutional Trajectories in Nineteenth-Century Latin America." In John H. Coatsworth and Alan M. Taylor, eds., *Latin America and the World Economy Since 1800,* pp. 23–54. Cambridge: Harvard University Press, 1998.

Comisión Económica para la América Latina. 1978. *Series históricas del crecimiento de América Latina.* Santiago: Naciones Unidas.

____. 1982a. *Cuentas nacionales y producto material en América Latina: comparabilidad de ambos sistemas*. Santiago: Naciones Unidas.

-----. 1982b. *Distribución regional del producto interno bruto sectorial en los países de América Latina.* Santiago: Naciones Unidas.

-----. 1983a. *Cuentas nacionales en América Latina y el Caribe.* Santiago: Naciones Unidas.

-----. 1983b. *National Accounts in Latin America and the Caribbean.* Santiago: Naciones Unidas.

-----. 1988. *Estudio económico de América Latina y el Caribe.* Santiago: Naciones Unidas.

----. 2000. *La economía cubana: reformas estructurales y desempeño en los noventa.* México, D.F.: Fondo de Cultura Económica.

---. *Statistical Yearbook for Latin America and the Caribbean 1984.* Santiago: United Nations, 1985.

----. *Statistical Yearbook for Latin America and the Caribbean 2004.* Santiago: United Nations, 2005.

---. *America Latina y el Caribe: proyecciones 2006-2007.* Santiago: United Nations, 2005.

ECLA. *See* Comisión Económica para la América Latina.

ECLAC (Economic Commission for Latin America and the Caribbean). *See* Comisión Económica para la América Latina.

Engel, Charles. "Long-Run PPP May Not Hold After All." NBER Working Paper No. W5646. National Bureau of Economic Research. http://papers.nber.org/papers/W5646. 1996.

Engerman, Stanley L., and Kenneth L. Sokoloff. "Factor Endowments, Institutions, and Differential Paths of Growth Among New World Economies: A View from Economic Historians of the United States." In Stephen Haber, ed., *How Latin America Fell Behind: Essays in the Economic Histories of Brazil and Mexico, 1800–1914,* pp. 260–304. Stanford: Stanford University Press, 1997.

Galeano, Eduardo. *Open Veins of Latin America.* New York: Monthly Review Press, 1997.

Haber, Stephen, ed. *How Latin America Fell Behind: Essays in the Economic Histories of Brazil and Mexico, 1800–1914.* Stanford: Stanford University Press, 1997.

Hershey, Robert D., Jr. "Statistics That Gets No Respect: GDP's Accuracy Is Under Attack from All Sides." *New York Times,* December 19, 1995.

Heston, Alan, and Robert Summers. "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950-1988." *Quarterly Journal of Economics* 106 (May), 327–368. http://datacentre.chass.utoronto.ca:5680/pwt/., 1991.

Hofman, André. "Economic Performance in Latin America—A Comparative Quantitative Perspective." Consultancy paper. Santiago, 1997.

Hofman, André, and Nanno Mulder. "The Comparative Productivity Performance of Brazil and Mexico, 1950–1994." In John H. Coatsworth and Alan M. Taylor, eds., *Latin America and the World Economy Since 1800,* pp. 85–109. Cambridge: Harvard University Press, 1998.

IMF-IFS. International Monetary Fund. *International Financial Statistics* (monthly).

IMF-IFS. CD-ROM. 1999.

IMF-IFS-Y. International Monetary Fund. *International Financial Statistics Yearbook* (online version).

Jolly, Richard. "The Aid Relationship: Reflections on the Pearson Report." In Barbara Ward, J. D. Runnalls, and Lenore D'Anjou, eds., *The Widening Gap: Development in the 1970's,* pp. 282–295. New York: Columbia University Press.

Kennedy, Paul. *The Rise and Fall of the Great Powers: Economic Change and Military Conflict, 1500–2000.* New York: Vintage Books, 1987.

Krugman, Paul. "Cycles of Conventional Wisdom on Development" *International Affairs (Royal Institute of International Affairs 1944–)*, 71 (4), Special RIIA 75th Anniversary Issue, October 1995.

Landes, David. S. *The Wealth and Poverty of Nations: Why Some Are So Rich and Some So Poor*. New York: W. W. Norton, 1999.

Lazín, Olga Magdalena, *La globalización se descentraliza. Libre mercado, fundaciones, Sociedad Cívica y gobierno civil en las regiones del mundo.* Guadalajara, Los Ángeles, México: Universidad de Guadalajara, UCLA Program on Mexico, PROFMEX/World, Casa Juan Pablos Centro Cultural, 2007. Prólogo de James W. Wilkie

Lazín, Olga y James W. Wilkie, *La globalización se amplia: Claroscuros de los nexos globales*. Guadalajara, Los Ángeles, México: Universidad de Guadalajara, UCLA Program on Mexico, PROFMEX/World, Casa Juan Pablos Centro Cultural, in press).

Maddison, Angus. *Two Crises: Latin America and Asia, 1929–38 and 1973–83.* Paris: Development Centre of the Organisation for Economic Co-operation and Development [OECD], 1985.

_____. *The World Economy in the 20th Century.* Paris: OECD, 1989.

_____. *Dynamic Forces in Capitalist Development: A Long-Run Comparative View.* Oxford; New York: Oxford University Press, 1991.

_____. *Monitoring the World Economy, 1820–1992.* Paris: OECD, 1995.

_____. *Chinese Economic Performance in the Long Run.* Paris: OECD, 1998.

_____. *The World Economy: A Millenial Perspective.* Paris: OECD, 2001.

_____. *The World Economy: Historical Statistics.* Paris: OECD, 2003.

_____. "World Population, GDP, and Per Capita GDP, 1-2003 AD" which is available on his webpage: (http://www.ggdc.net/maddison/), updated August 2007.

Marshall, Alfred. *Principles of Economics.* London: The Macmillan Press Ltd., 1890.

Mesa-Lago, Carmelo, and Jorge Pérez-López. "Cuban Economic Growth in Current and Constant Prices, 1975–88: A Puzzle on the Foreign Trade Component of the Material Product System." SALA, 29:1, pp. 597–615, 1992.

Mitchell, B.R. *International Historical Statistics: The Americas, 1750–1988.* Basingstoke: Macmillan, 1993.

Morris, David Morris. *Measuring the Conditions of the World's Poor, The Physical Quality of Life Index.* New York: Pergamon Press, 1979.

Moreno-Pérez, Juan. "GDP Series for Latin America and the United States, 1950–1990." Research paper, Graduate History Seminar in Historical Statistics, University of California, Los Angeles. November, 1995.

_____. 1997. "Mexican Industrial Wages and Prices since 1938: Constructing New Statistical Series." Ph.D. dissertation, University of California, Los Angeles, 1997.

Pearson, Lester B., et al. *Partners in Development: Report of the Commission on International Development.* New York: Praeger, 1969.

Pérez-López, Jorge F. 1977. "An Index of Cuban Industrial Output, 1930–58." In James W. Wilkie and Kenneth Ruddle, eds., *Quantitative Latin American Studies: Methods and Findings,* pp. 37–72. SALA Supplement 6. Los Angeles: UCLA Latin American Center Publications.

_____. 1987. *Measuring Cuban Economic Performance*. Austin: University of Texas Press.

Porter, Michael E. *The Competitive Advantage of Nations*. New York: Free Press, 1990.

Ray, Michael and Wilkie, James. "A Proportional Approach to Measuring the United States-Latin America GDP 'Gap' since 1940", *Statistical Abstract of Latin America,* volume 37. Los Angeles: UCLA Latin American Center Publications, 2001.

Romney, Lee. "Mexican Business Pushes North of Border." *Los Angeles Times,* February 19, 2001.

Sen, Amartya. *Development as Freedom*. New York: Anchor Books, 1999.

Skousen, Mark. "Beyond GDP: A Breakthrough in National Accounting", *Ideas on Liberty*, (April 2001).

Thorp, Rosemary. 1998. *Progress, Poverty and Exclusion: An Economic History of Latin America in the 20th Century.* New York: Inter-American Development Bank; distributed by Johns Hopkins University Press.

Topik, Steven. "Historical Perspectives on Latin American Underdevelopment." *The History Teacher* (August), 545–559, 1987.

United Nations. *Statistical Yearbook, Forty-third issue.* New York: United Nations, 1999.

_____. *Statistical Yearbook, Forty-eighth issue.* New York: United Nations, 2004.

_____. 1994. *World Comparisons of Real Gross Domestic Product and Purchasing Power,* 1985 (Phase V of the International Comparison Programme, Series F., No. 64). New York.

_____. *World Population Prospects: The 2006 Revision.* Available on web site at (http://esa.un.org/unpp/).

United Nations Development Programme. *Human Development Report 2000 Human Rights and Human Development.* New York: United Nations Development Programme, 2000.

_____. *Human Development Report 2002 Deepening Democracy in a Fragmented World.* New York: Oxford University Press, 2002.

_____. *Human Development Report 2003 Millenium Development Goals: A Compact Among Nations to End Human Povety.* New York: Oxford University Press, 2003.

_____. *Human Development Report 2005 International Cooperation at a Crossroads: Aid, Trade and Security in an Unequal World.* New York: United Nations Development Programme, 2005.

_____. *Human Development Report 2006 Beyond Scarcity: Power, poverty and the global water crisis*. New York: United Nations Development Programme, 2006.

United Nations Educational, Scientific, and Cultural Organization. *World Illiteracy at Mid-Century*. Connecticut: Greenwood Press, 1957.

_____. *1978-79 Statistical Yearbook.* Paris: UNESCO Publishing 1980.

_____. *1986 Statistical Yearbook.* Paris: UNESCO Publishing 1986.

_____. *1999 Statistical Yearbook.* UNESCO Publishing and Bernan Press, 1999.

U.S. Agency for International Development. *Gross National Product: Growth Rates and Trend Data by Region and Country.* Washington, D.C. May 10, 1972.

Ward, Barbara, J. D. Runnalls, and Lenore D'Anjou, eds. 1971. The *Widening Gap: Development in the 1970's.* New York: Columbia University Press.

Wessel, David. "American Economy Offers Model Others Both Fear and Envy." *Wall Street Journal,* January 18, 2001.

James Wilkie and Maj-Britt Nilsson, "Projecting the HEC (Health, Education, and Communication) Index for Latin America Back to 1940, Quantitative Latin American Studies, Methods and Findings. Los Angeles: UCLA Latin American Center Publications, University of California, 1977.

Wilkie, James W. *Statistics and National Policy*. Los Angeles: UCLA Latin American Center Publications, 1974.

_____. 1979. "Beyond GDP: Primary Social Change in the Americas." Paper presented at the University of Florida Conference, "Development and Inequality in Latin America."

Wilkie, et al. *Statistical Abstract of Latin America*, Volume 37. Los Angeles: UCLA Latin American Center Publications, 2001.

_____. *Statistical Abstract of Latin America*, Volume 36. Los Angeles: UCLA Latin American Center Publications, 2000.

_____. *Statistical Abstract of Latin America*, Volume 35. Los Angeles: UCLA Latin American Center Publications, 1999.

_____. *Statistical Abstract of Latin America*, Volume 32. Los Angeles: UCLA Latin American Center Publications, 1996.

_____. *Statistical Abstract of Latin America*, Volume 26. Los Angeles: UCLA Latin American Center Publications, 1988.

_____. *Statistical Abstract of Latin America*, Volume 22. Los Angeles: UCLA Latin American Center Publications, 1983.

_____. *Statistical Abstract of Latin America*, Volume 21. Los Angeles: UCLA Latin American Center Publications, 1982.

Wilkie, James W., and Olga M. Lazin.1999. "Globalización *fast-track* y el surgimiento de áreas de libre comercio y corporaciones transglobales virtuales." In Oscar González Cuevas, ed., *México frente a la modernización de China,* pp. 307–359. México, D.F.: Universidad Autónoma Metropolitana-Azcapotzalco y Editorial Noriega-Limusa.

World Bank. *Social Indicators of Development 1996*. Baltimore and London: The John Hopkins University Press, 1996.

_____. *Social Indicators of Development 1994*. Baltimore and London: The John Hopkins University Press, 1996.

_____. *World Development Indicators 1999*. Washington D.C.: World Bank, 1999.

_____. *World Development Indicators 2003*. Washington D.C.: World Bank, 2003.

_____. *World Development Indicators 2004*. Washington D.C.: World Bank, 2004.

_____. *World Development Indicators 2006*. Washington D.C.: World Bank, 2006.