A Proportional Approach to Measuring the United States–Latin America GDP "Gap" since 1940

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For decades it has been an accepted "fact" that rich countries are getting richer and poor ones poorer. While academics, politicians, and international policymakers have believed and promoted this idea, few have sought to examine its factual basis. To test whether such a widening economic gap exists between the twenty Latin American countries and the United States,[1] this study (1) compares six long-term series on gross domestic product (GDP) and one projection; (2) develops two long-term series for the period since 1940; and (3) examines totals in an additional GDP series in order to analyze the effects of alternative base years and inflation.

Because all but one of the series remove inflation by converting GDP to standard dollars of a particular year (1960, 1970, 1980, or 1990), we develop a new series in current dollars and present all series in a new proportional approach that calculates the ratio of Latin America data to U.S. data for selected years.

How do the GDP series presented here differ? The existing series measure GDP in terms of "purchasing power parity" (PPP), which adjusts the dollar exchange rate for each country to determine the "real" worth of their currency—not what the global currency exchange market says the currency is worth. Our long-term series, the "W-R1" and "W-R2" (Wilkie-Ray) series, do not use the PPP approach but rather convert the GDP of each country in terms of that country's dollar exchange rate (DER).[2] As useful as the PPP approach may be, we believe that its adjustment of the exchange rate does not depict "reality," but instead overstates economic gains.

The PPP concept uses "international dollars" to convert GDP to values that theoretically eliminate exchange rate biases, as discussed at length below. In this study we use the three major published time series for comparison: (1) SALA, based mainly on ECLA data published in several sources, (2) Thorp (1998; hereafter Thorp), and (3) Maddison (1995). The Maddison data permit us to extend the analysis beyond the U.S.–Latin American economic gap to consider whether similar gaps exist elsewhere, specifically between the United States and the United Kingdom.

PPP methodology involves attempts by researchers at the United Nations (including ECLA), World Bank, University of Toronto, University of

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[1]Theoretically data on income distribution could be used to measure the so-called widening gap, but such data do not exist in any standardized form for all countries in Latin America since 1940. Data are available for select countries at specific moments in time, but methodology and coverage vary. For analysis of limits on such data, see SALA, 37–1412 through 1416 and Thorp (1998:352).

[2]Other DER series exist, but these are usually for single years or short time periods and lack internal consistency.

Pennsylvania,[3] and elsewhere to express national GDP data in "international dollars." PPP converts the GDP of different countries to U.S. dollars by revaluing gross production. PPP uses a common basket of goods and services to establish the number of units of each country's national currency needed to buy the same goods and services that one U.S. dollar buys in the United States. PPP seeks especially to include the "real" value of services, which are the most difficult to measure.

Researchers see the question of approach, be it PPP or DER, as a point of controversy.[4] On the one hand, calculation of GDP using exchange rates (table B2) leads to a shifting GDP level which is usually undervalued or overvalued, depending on how political leaders establish their country's currency exchange rate to the dollar over time. Although some researchers argue that the use of currency exchange rates distorts "reality," we believe that it is important to take into account the politico-economic situation of the population. Distortions of exchange rates generally change "reality" itself by encouraging (or discouraging) activities such as exports (and imports), tourism, and smuggling.

On the other hand, the PPP conversion factor is, in principle as well as in practice, difficult, if not impossible, to calculate meaningfully because goods and services are not always directly comparable from country to country, especially across world regions. Although the OECD claims to have established uniformity for the European Union, the same cannot be said for most of the world other than major industrial economies such as Japan and the United States. It is especially difficult, for example, to measure output and prices of services such as health care and education.

In addition, there are problems in employing PPP estimates for calculating the relative size of countries: PPP prices are benchmarked on 1985 (covering only 64 countries) and 1993 (covering a larger set of countries), developed with subsequent yearly surveys or based on regression analyses prepared by the International Comparison Programme (ICP).[5] Furthermore, data for PPP are based on survey research, notoriously difficult even in advanced economies.[6]

Despite such difficulties, one group of U.N. researchers notes that certain regularities have been observed between (1) GDP and its major expenditure components when measured in market prices and (2) GDP and its components when measured in "international" prices as derived in the ICP experiments. "On that basis (and using other partial data on consumer prices), a technique [has been] devised to approximate PPP levels of GDP and its major expenditure components for countries that have not participated in ICP surveys." The results of this approximation have come to be known as the Penn World Table.[7]

Although we refer to GNP (gross national product) in table B6 where we define GDP as part of GNP and compare GNP-DER, GDP-DER, and GDP-PPP for six countries in 1996, we do not use the GNP concept in our analysis because the developing world itself has focused almost exclusively on the GDP aspect of GNP. Latin America's focus on GDP rather than GNP dates back to the 1960s when ECLA undertook a serious attempt to measure the production of goods and services *within* each country of the region.

ECLA and think tanks engaged in studies of the developing world have been more interested in GDP than GNP for one major reason: GDP shows the amount of goods and services (including exports) produced *inside* the country, a concern of countries that seek to improve their worldwide competitiveness. In contrast, GNP builds upon GDP to take into account income earned *outside* the country and sent back from abroad—which has not been a major factor in the development of most countries. Mexico is an important exception because since the late 1990s

[3]See Heston and Summers (1991). The Penn World Table with data to the early 1990s by country is available at http://datacentre.chass.utoronto.ca:5680/cgi-bin/pwt/form?s=CHN/RGDPC and http://datacentre.chass.utoronto.ca:5680/cgi-bin/pwt/jump?t=213028. See also (1) an analysis of PPP by researchers affiliated with the National Bureau of Economic Research at http://www.nber.org, including critiques such as Engel (1996); and (2) Angus Maddison and Bart van Ark, "The International Comparisons of Real Product and Productivity," Research Memorandum GD-6, International Comparisons of Output Productivity (ICOP) Project, Groningen Growth and Development Centre, University of Groningen, Netherlands, 1994, discussed in Maddison (1995:162–163). The ICOP project approach is very limited both in method and geographic coverage.

[4]"Alternative Aggregation Methodologies for GDP" (1985).

[5]See United Nations (1994) and *World Bank* [illegible].

[6]For a supportive view of PPP methodology, see Maddison (1995:162–163).

[7]The Center for International Comparisons at the University of Pennsylvania, Penn World Table. Available at http://[illegible].upenn.edu/home.html.

its privatized companies have begun to expand investment in Central America, South America, the United States, and Europe.)[8]

Recently some well-meaning groups have formed to propose that alternative measures be developed that do not count as economic gain, for example, the cost of rectifying environmental damage. Thus Redefining Progress (RP), a not-for-private-profit public policy organization in Oakland, California, criticizes the concept of GDP. According to RP, the concept of GDP is part of a plot by the developed world to mask its exploitation of the developing world, which

> in 1991 [turned] the GNP . . . into the GDP—a quiet change that had very large implications.
>
> 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.[9]

Not only is the idea of a conspiracy theory completely without foundation, but, in addition, RP fails to understand that GDP is not a term to be substituted for GNP—GDP is part of GNP. Although it is possible for GNP to be lower than GDP, ironically this is so only in the case of the United States (table B6). Further, many "foreign" profits are reinvested in developing countries.

RP goes on to propose an "ideal" set of indicators which adjust GDP data by deducting from GDP certain components to create a new concept called "GPI" ("genuine progress indicator").[10] The items that RP proposes to deduct from GDP are nearly impossible to measure, such as all medical and repair costs, which, ironically, RP believes fail to contribute to positive change.

Theory of the "Widening Gap"

The "economic gap" theory first gained recognition with the publication in 1969 of the report of the Commission on International Development chaired by the former prime minister of Canada, Lester B. Pearson (Pearson 1969). The Pearson Report identified a decline in foreign aid and capital to developing countries and formed the basis for convening in 1970 the Columbia University Conference on International Economic Development. An outcome of the Columbia conference was the publication in 1971 of *The Widening Gap: Development in the 1970's* (Ward, Runnalls, and D'Anjou 1971; hereafter Ward). The book's introduction contains a Declaration signed by over one hundred scholars, governmental officials, diplomats, and other leaders, which reads:

> The widening gap between the rich and poor countries of the world has—in the words of the Pearson Report—become a central issue of our time. In incomes, living standards, economic and political power, one-third of the world has in recent decades been pulling steadily ahead, leaving the remainder of mankind in relative poverty, in many cases to live without clean water, education, basic medical facilities or adequate housing. Yet with modern technology and existing productive capacity, none of this need continue if mankind would develop the will and organization to use the resources at hand. (Ward, pp. 10–11)

Readers looking for evidence of a widening gap, however, will find little in either the Pearson

[8]For example, TELMEX has purchased the Guatemalan telephone system. Since NAFTA went into effect in 1994, Mexican companies have been building a significant base in the United States (see Romney 2001). Bimbo Bakeries Mexico has become a major worldwide player, from the United States, to Austria, to the Czech Republic. The early base of Mexican foreign investment was established by Grupo Maseca (GRUMA). In the 1970s GRUMA began to earn profits on tortilla sales in Central America and the United States with which it financed expansion in Mexico. At the end of 2000, GRUMA opened a tortilla plant in England to serve the European market.

[9]Redefining Progress. Available at http://www.cyberus.ca/choose.sustain/Question/GDP-GNP.html.

[10]Genuine progress indicator (GPI) subtracts from GDP the following costs: crime and divorce, any widening of income distribution, depletion of national resources, pollution damage to human health and the environment, consumption of certain forms of energy and of ozone-depleting chemicals, any decrease in leisure time, short life span of consumer durables and public infrastructure. GPI adds to GDP by counting the value of household work figured at the approximate cost of hiring someone to do it. See RP's 1999 scheme at http://www.cyberus.ca/choose.sustain/Question/GPI.html.

Report or Ward, except for data provided by Richard Jolly (1971). Jolly compared average GDP/C (in U.S. dollars of 1960) for 21 "developed countries" with the averages for "developing countries" by world region from 1950 to 1967 and, based on that seventeen-year trend, made estimates through 2000 (table B1 and figure B1). Jolly estimated that the absolute economic gap between Latin America and developed countries, expressed in GDP/C, would continue to widen. Despite basing his estimates on limited economic data, Jolly concluded that because there is a widening economic gap, there is also a widening social gap between the world's rich and poor. He projected that for Latin America the absolute gap would increase 564.3 percent between 1950 and 2000.[11]

Table B1
GDP/C BY WORLD REGIONS, ABSOLUTE DATA
(M US 1960)

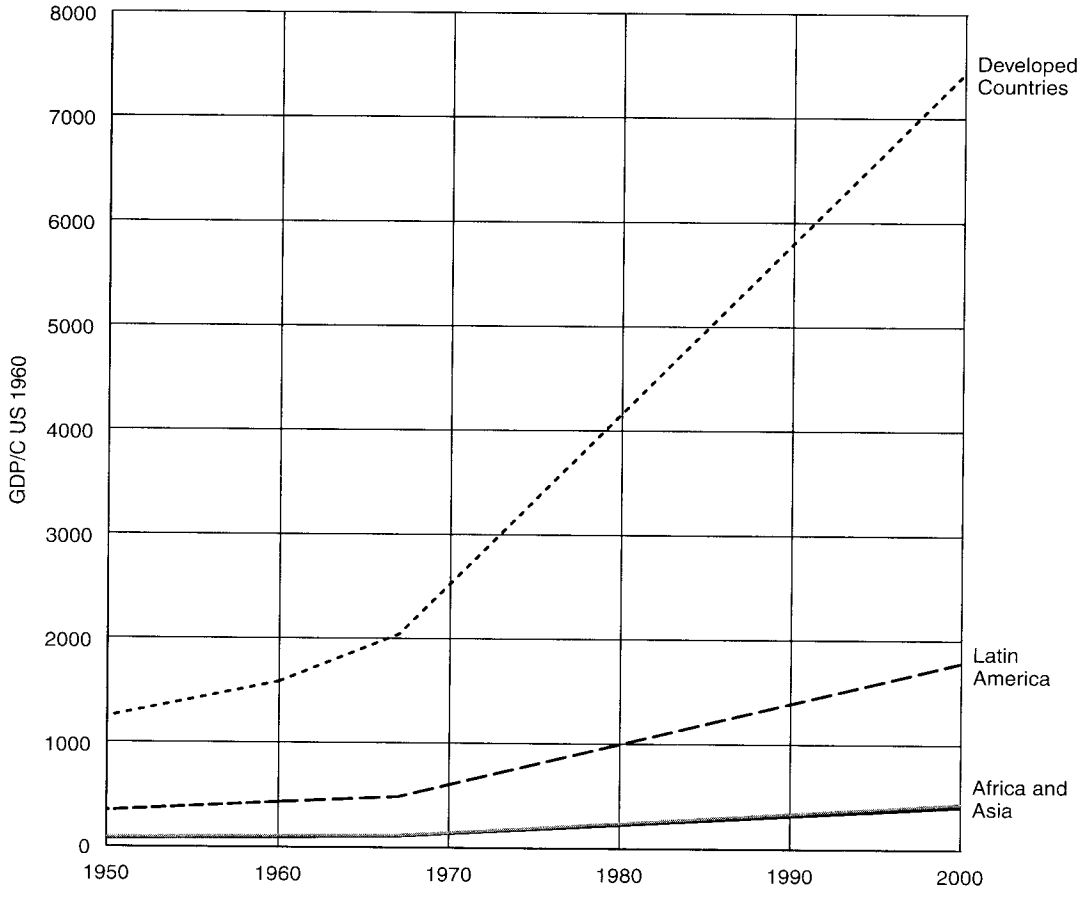
Region	1950	1960	1967	2000*
Developed Countries	1,205	1,587	2,042	7,450
Developing Countries				
Africa	95	110	118	430
Latin America	350	433	486	1,770
Asia	80	95	110	400

*Estimate.

SOURCE: Jolly (1971:284).

The widening gap theory has produced the corollary that "poor" regions of Latin America are, and have been, falling further and further behind the "rich" United States, the worldwide standard against which other regions and countries are measured.[12]

Figure B1
THE WIDENING ABSOLUTE GAP, 1950–2000



SOURCE: Jolly (1971:xii and 284).

[11]According to Jolly's data, the absolute gap between Latin America and the United States was $855 in 1950 and $5,680 in 2000, a percentage increase of 564.3 percent.

[12]For analysis of "convergence from or convergence toward" U.S. GDP/C, see Maddison (1995:25).

Acceptance of this theory has influenced policymakers, as well as popular understanding and in-depth analyses of the comparative socioeconomic situation in Latin America and the United States.

To conclude that there is a widening gap appears logical for several reasons. Given the U.S. technological revolution and the widespread introduction of computers and sophisticated communications networks since World War II, many have hypothesized that Latin America's competitiveness would continue to deteriorate. Further, owing to Latin America's chronic high unemployment rates, the region has not had the luxury of focusing on the modernization of its industry and workforce. Although the hypothesis of a relative worsening of Latin America's economic situation seems valid, scholars have not sought to actually test it.

The image of "poor" Latin America simply underscores the persistence of external perceptions of Latin America throughout its history, which often have had more to do with the vantage point of the observer than with Latin American reality. For example, contrary to the modern view, during most of the colonial period Latin America was perceived as a land of riches, whose cities, markets, and wealth rivaled those of Europe.

The idea that Latin America is falling behind "developed" countries arose in the nineteenth century. As a result of Europe's agricultural and industrial revolutions, observers in Europe and Latin America began to view Latin America as "backward"—not because of worsening conditions in Latin America but because of progress in Europe. Latin America's so-called backwardness has been studied by Steven Topik, who points out that "it is not that Latin America went backwards, Europe went forwards" (Topik 1987:549). According to Topik, the European benchmark for judging Latin America changed from a focus on its moral development to an emphasis on its material development, the Enlightenment having revealed the scientific path to progress. Thus, says Topik, the colonies of Latin America were seen as not just different from Europe but representative of an earlier stage of development (1987:549). Although some views of Latin America soon evolved into racial, cultural, and geographic explanations for its underdevelopment, the central idea remained that Latin America was economically behind the "developed" world, undoubtedly for all time.

Testing the Theory of the Economic Gap

To test the theory of the widening gap, this analysis compares the economic situation of the twenty countries of Latin America with that of the United States using four data series in addition to the two new series developed here (W-R1 and W-R2):

1. W-R1 series linking ECLA data (1940–98 in U.S. dollars of 1970)[13]
   - GDP-DER (in terms of dollar exchange rates)
   - GDP/C-DER (per capita GDP-DER)[14]
2. SALA series linking ECLA data (1940–98, in U.S. dollars of 1970)[15]
   - GDP-PPP (in terms of purchasing power parity)
   - GDP/C-PPP[16]
3. Thorp series (1950–95, in dollars of 1970)[17]
   GDP/C-PPP
4. Maddison series (1820–1994, in U.S. dollars of 1990)[18]
   - GDP-PPP
   - GDP/C-PPP[19]
5. Moreno-Pérez series (1940–98, in U.S. dollars of 1980)
   - GDP-PPP (Appendix C)
   - GDP/C-PPP (Appendix D)
6. W-R2 series developed from IMF data (1950–98, in current U.S. dollars)
   - GDP-DER (not deflated)
   - GDP/C-DER (not deflated)

For these series, we use two analytical methods: absolute terms and rate of change. Further, we present all series in a new way as the proportional share of U.S. absolute data.

The Maddison series is important because it allows us to determine whether there is an economic "gap" between two "rich" countries—the United Kingdom and the United States; and we can compare it to Thorp and Coatsworth as well as

[13]For sources and methods, see Appendix A. U.S. data are from the IMF-IFS.

[14]Per capita figures calculated from population data discussed in Appendix B.

[15]SALA, 26–3324 and SALA, 32–3401.

[16]Per capita figures calculated from population data discussed in Appendix B.

[17]Thorp, p. 353.

[18]Maddison (1995).

[19]Per capita figures calculated from population data discussed in Appendix B.

Engerman and Sokoloff in order to test the meaning of data in proportional terms.

In addition to examining the Latin American region as a whole, this study analyzes data for Brazil, Mexico, and Chile, specifically. This approach provides a view of the situation in South America and North America as well as Latin America's two biggest countries in terms of GDP—together Brazil and Mexico in 1998 accounted for 74 percent of Latin America's total GDP, up from 36 percent in 1940.

Data for Cuba are problematic because, beginning in 1959, Fidel Castro adopted the Eastern bloc standard for measuring economic growth—gross social product (GSP)—in place of GDP. GSP, ironically, discounts the pay of teachers and public health workers, for example, considering it "nonproductive."[20] International agencies and scholars have attempted, especially since the crumbling of the Berlin Wall in 1989, to deconstruct Castro's spurious GSP in order to recalculate the data to make them comparable with GDP figures. The Cuban GDP/C data used here are from Thorp (p. 353). She presents GDP/C data in dollars of 1965. The data are not converted to dollars of 1970 because of the questionable nature of the original data and the eight widely varying estimates of GDP growth.[21] Further, data for the 1990s (table B2) show a decline of 23 percent, compared with recent ECLA data that show a decline of 29 percent.[22] The Cuban data presented here, then, constitute only a very rough estimate, and the difference between 1965 and 1970 dollars is minimal for our purposes.[23]

Because data for 1940 are not given for nine countries (Bolivia, Dominican Republic, Haiti, Panama, El Salvador, Costa Rica, Guatemala, Nicaragua, and Peru), we have calculated our own estimates. (See Appendix A for discussion of the methodology.)

The GDP-DER Series, Total and Per Capita

In contrast to the PPP method of converting GDP to U.S. dollars (discussed below), our DER series (table B2) shows that in 1940 the GDP for Latin America was nearly $32 billion increasing to $324 billion by 1998. Meanwhile, in the United States GDP grew from $304 billion in 1940 to $2.4 trillion in 1998. The absolute GDP gap between Latin America and the United States increased from $271.8 billion in 1940 to roughly $2.1 trillion in 1998. This analysis in absolute terms appears to confirm the theory of the widening gap.

To partially resolve the problem of Latin America's unequal base for comparison with the United States, let us examine Latin American GDP as a share of U.S. GDP (table B3) to determine whether or not the twenty countries as a whole are gaining on the United States, and if so by how much. During the fifty-eight-year period analyzed here, Latin America's GDP rose from 10.4 percent of U.S. GDP to 17.4 percent in 1980 before declining to about 13.7 percent of U.S. GDP in 1998. Thus, Latin America got richer but poorer!

Individual country comparisons illustrate a subregional variation. Brazil, Mexico, and Chile are helpful examples. Brazil's GDP as a share of U.S. GDP rose from 2.1 to 4.4 percent between 1940 and 1998, Mexico's rose from 1.6 percent to 3.6 percent, while Chile's fell from 1.9 to .8 percent. From this point of view, then, we see a narrowing gap, but not for all countries.

To further test the nature of the "gap," let us analyze absolute data on GDP/C (table B4). The average for all Latin America was $257 per person in 1940, an amount that increased steadily in each decade through 1980, falling in 1990, and increasing again to the 1998 average of $659. Meanwhile, U.S. GDP/C increased from $2,289 in 1940 to $8,641 in 1998 (table B4).

When we subtract the Latin American average from the U.S. average, we find that the gap increased

[20]For a definition of GSP and GMP (gross material product), see SALA, 37–3407.

[21]See SALA, 37–3407.

[22]Comisión Económica para América Latina y el Caribe (2000), table A.1. According to the CIA, "Havana announced in 1995 that GDP declined by 35 percent during 1989–93, the result of lost Soviet aid and domestic inefficiencies. The drop in GDP apparently halted in 1994, when Cuba reported .7 percent growth, followed by increases of 2.5 in 1995 and 7.8 in 1996. Growth slowed again in 1997 and 1998 to 2.5 percent and 1.2 respectively." The CIA estimates that Cuba's GDP growth recovered again in 1999 and 2000 with increases of 6.2 and 5 percent, respectively, "apparently owing to the continued growth of tourism. Central control is complicated by the existence of the informal economy, much of which is denominated in dollars. Living standards for the average (dollarless) Cuban remain at a depressed level compared with 1990." See Central Intelligence Agency, *The World Factbook 2000*, "Economy"; also available at http://www.cia.gov/cia/publications/factbook/geos/cu.html#Econ.

[23]The ECLA export price index (1970 = 100) for Latin America in 1965 was 87; the import price index was 104. See SALA, 37–2543 and 2544, respectively; base recalculated here from 1990 = 100.

Table B2
W-R1 SERIES:[1] GDP-DER, 20 L AND UNITED STATES, 1940–98
(M US 1970)

	Country	1940	1950	1960	1970	1980	1990	1998
A.	ARGENTINA	7,816.3	10,904.6	14,616.0	22,314.8	25,966.3	23,524.0	34,313.7
B.	BOLIVIA[2]	397.5	530.5	551.8	964.4	1,494.2	1,350.5	1,662.1
C.	BRAZIL	6,643.9	10,191.9	19,684.9	35,508.8	75,010.2	89,812.3	104,016.3
D.	CHILE	2,229.1	3,126.1	4,598.5	7,112.7	8,941.5	11,849.7	18,238.9
E.	COLOMBIA	1,745.1	2,505.0	3,920.0	6,496.9	11,209.8	15,706.2	18,459.6
F.	COSTA RICA[3]	155.1	228.8	455.2	874.4	1,514.7	1,679.7	1,839.0
G.	CUBA	1,639.0	2,095.0	2,713.0	3,196.0	6,243.0	7,278.0	5,926.5
H.	DOMINICAN REP[2]	255.8	463.7	808.2	1,325.0	2,590.9	3,173.8	4,218.6
I.	ECUADOR	284.0	533.2	858.0	1,466.9	3,579.4	4,292.1	4,950.2
J.	EL SALVADOR[3]	210.8	348.2	548.8	950.0	1,305.6	1,264.8	1,593.9
K.	GUATEMALA[3]	764.4	805.4	1,170.3	1,998.4	3,463.5	3,554.5	4,365.0
L.	HAITI[2]	248.2	320.0	386.2	410.2	483.6	466.0	353.9
M.	HONDURAS	200.4	282.6	409.5	641.4	1,025.5	1,246.0	1,402.8
N.	MEXICO	4,711.4	9,182.6	16,198.5	31,921.1	64,067.4	73,952.6	84,055.8
O.	NICARAGUA[3]	141.0	218.9	364.4	711.5	784.8	694.1	749.9
P.	PANAMA[2]	227.2	282.0	452.2	962.2	1,629.4	1,714.6	2,326.7
Q.	PARAGUAY	231.8	277.9	353.2	551.1	1,277.7	1,737.3	1,823.1
R.	PERU[3]	1,426.5	2,320.3	3,875.3	6,332.1	8,689.7	7,699.8	10,304.7
S.	URUGUAY	1,026.6	1,505.6	1,850.8	2,158.1	2,845.2	2,873.4	3,664.3
T.	VENEZUELA	1,359.7	2,990.0	6,209.6	11,085.2	16,559.8	17,614.3	19,892.4
	LATIN AMERICA	31,713.8	49,112.2	80,024.5	136,981.1	238,682.1	271,483.7	324,157.6
	UNITED STATES	303,507.5	470,063.2	662,397.2	997,205.0	1,365,903.3	1,869,522.5	2,367,791.0

1. The W-R1 series uses U.S. dollar exchange rates (DER) rather than PPP rates. The DER data were developed originally by ECLA and linked and carried forward in SALA, 26–3301 through 3321 and SALA, 32–3401 through 3421. See also the discussion in Appendix A herein.
2. Extrapolated for 1940 from data for 16 other countries.
3. PPP data from Thorp, except 1998 data are calculated using percentage change in Economist Intelligence Unit, Cuba Country Report.

SOURCE AND METHODS: See Appendix A, herein.

Table B3
W-R1 SERIES: LATIN AMERICA, BRAZIL, MEXICO, AND CHILE GDP-DER AS PERCENTAGE OF U.S. GDP-DER, 1940–98

Year	Latin America	Brazil	Mexico	Chile
1940	10.4	2.1	1.6	1.9
1950	10.4	2.2	2.0	6.6
1960	12.1	2.9	2.4	6.9
1970	13.7	3.5	3.2	7.1
1980	17.4	5.5	4.7	6.5
1990	14.5	4.0	4.0	6.3
1998	13.7	4.4	3.6	.8

SOURCE: Calculated from table B2.

from $2,033 in 1940 to $7,982 in 1998. For Brazil, the GDP/C gap increased from $2,128 to $8,013. Mexico saw its gap widen from $2,049 to $7,764. For Chile, in 1940 the gap was $1,848 and by 1998 it had reached $7,411. From this perspective, then, the gap widened dramatically.

Let us turn once again to growth rates (calculated from data in table B4). Despite the "lost decade" of the 1980s, Latin America's GDP/C still managed to increase 157 percent from 1940 to 1998. The increases by decade were impressive—23.5 percent in the 1940s, 23.8 percent in the 1950s, 29.7 percent in 1960s, and 33.9 percent in the 1970s. In the 1980s, Latin America's GDP/C decreased 5.7 percent and increased once again in the 1990s, but only by 2.7 percent. The yearly average increase in GDP/C for Latin America as a whole for the 1940–98 period was 1.6 percent.

For the three subregional country examples, the growth rates between 1940 and 1998 were as follows: Brazil, 288.2 percent; Mexico, 265.7 percent; Chile, 179.3 percent—all more than 100 percent above the Latin American average and close to the U.S. average. In the United States, GDP/C increased 277.5 percent for the period, a yearly average of 2.4 percent—.8 percent higher than the Latin American yearly average.

Let us now examine Latin American GDP/C as a percentage of U.S. GDP/C (table B5). Latin America's share in 1940 was 11.2, a percentage that decreased to 7.6 in 1998, showing, clearly, a widening gap. However, the figures for 1940 and 1998 for Brazil and Mexico remained stable at about 7 and 10 percent, respectively. In Chile, however, which had

Table B4
W-R1 SERIES: GDP/C-DER, 20 L AND UNITED STATES, 1940–98
(US 1970)

	Country	1940	1950	1960	1970	1980	1990	1998
A.	ARGENTINA	551.6	638.8	733.7	939.6	919.5	723.1	949.9
B.	BOLIVIA	147.2	176.2	144.4	210.6	266.8	205.6	208.9
C.	BRAZIL	161.6	195.3	282.3	383.8	618.4	620.6	627.2
D.	CHILE	440.5	515.0	606.7	759.1	801.9	904.6	1,230.4
E.	COLOMBIA	191.8	221.1	254.2	316.5	433.0	486.3	452.4
F.	COSTA RICA	250.1	286.0	364.2	505.4	673.2	597.8	478.8
G.	CUBA	382.1	380.2	385.9	373.8	642.3	684.7	533.2
H.	DOMINICAN REP.	145.3	207.0	265.9	326.4	476.3	442.6	512.5
I.	ECUADOR	115.0	166.6	196.8	246.1	440.8	418.3	406.6
J.	EL SALVADOR	129.3	187.2	224.0	276.2	289.5	251.5	264.2
K.	GUATEMALA	347.5	286.6	305.6	379.2	500.5	386.4	404.1
L.	HAITI	87.7	94.4	106.7	96.7	96.5	71.8	44.5
M.	HONDURAS	174.2	197.6	221.4	242.9	277.9	243.8	228.2
N.	MEXICO	239.8	356.1	449.3	629.7	919.7	895.4	877.1
O.	NICARAGUA	169.9	206.5	258.5	388.8	287.5	179.4	156.0
P.	PANAMA	366.5	352.5	426.6	672.8	831.3	714.4	840.9
Q.	PARAGUAY	208.9	198.5	201.8	239.6	405.6	411.7	349.1
R.	PERU	213.5	291.1	386.8	470.8	502.3	357.0	415.6
S.	URUGUAY	521.1	684.4	728.7	790.5	977.7	929.9	1,114.1
T.	VENEZUELA	366.5	601.6	844.8	1,078.3	1,102.5	911.2	855.9
	LATIN AMERICA[1]	256.5	316.7	392.1	508.6	680.9	641.8	659.1
	UNITED STATES	2,289.1	3,087.0	3,666.1	4,863.2	5,997.1	7,480.8	8,640.7

1. Population weighted.

SOURCE: Calculated from table B2.

Table B5
W-R1 SERIES: LATIN AMERICA, BRAZIL, MEXICO, AND CHILE GDP/C-DER AS PERCENTAGE OF U.S. GDP/C-DER, 1940–98

Year	Latin America	Brazil	Mexico	Chile
1940	11.2	7.0	10.4	19.3
1950	10.2	6.3	11.5	16.6
1960	10.6	7.7	12.2	16.5
1970	10.4	7.9	12.9	15.6
1980	11.3	10.3	15.3	13.4
1990	8.3	11.9	12.1	12.1
1998	7.6	7.3	10.2	14.2

SOURCE: Calculated from table B4.

the third highest GDP/C for Latin America in 1940 and the highest in 1998, GDP/C as a share of U.S. GDP/C fell from 19.3 to 14.2 percent. In terms of Latin American GDP/C as a share of U.S. GDP/C, then, the economic gap widened for the whole of Latin America and in Chile, but remained the same for Brazil and Mexico. Not only is this good news for the latter two countries, but it also illustrates the complexity of measuring the economic gap.

It is interesting to note that Latin America's total GDP/C remained nearly constant at about 10 to 11 percent of the U.S. figure from 1940 to 1980. Only during the 1980s and 1990s did the gap widen for the region. This decline followed the fivefold increase in oil prices and the economic strain on the region caused by the 1973 and 1979 OPEC oil embargoes against the United States. The embargoes led to a slowing in the world's economic engine and a reduction in demand on the part of industrial countries for Latin America's raw materials. Decline in Latin American exports led to the debt crisis that plagued Latin America after 1982.

Comparing GDP-DER and GDP-PPP

Some U.N. researchers argue that neither the DER approach nor the PPP approach to converting GDP into U.S. dollars can be applied in a theoretically pure or consistent way in many countries. It is important to point out, however, that the PPP approach overstates the size of many economies and their ability to participate in world markets.

Indeed, the purchasing power parity and the dollar exchange rate methodologies compete in an ironic way. PPP does not measure the comparable size of economies as much as it measures implicitly the domestic cost that citizens pay for goods and services by reducing the distortions of dollar exchange rates. Thus, PPP, in our view, converts currencies not to "international dollars," as claimed by its proponents, but to "domestic dollars," which indicates how much the local currency purchases *in* each country.

Table B6
SIX COMPETING ECONOMIES MEASURED BY GNP-DER,[1,2] GDP-DER,[2] AND GDP-PPP,[3] 1996 (M US and Per Capita US)

Country	GNP-DER[1,2]	GDP-DER[2]	GDP-PPP
China			
Total	906,079	823,253	3,390,000
Per Capita	750	668	2,800
Hong Kong			
Total	154,288	115,191	163,600
Per Capita	24,290	18,255	28,600
Japan			
Total	5,149,185	4,442,177	2,850,000
Per Capita	40,940	35,404	22,700
MEXICO			
Total	341,718	329,447	777,300
Per Capita	3,670	3,553	8,100
Singapore			
Total	92,987	91,296	72,200
Per Capita	30,555	25,290	21,200
United States			
Total	7,831,200	7,813,200	7,813,200
Per Capita	29,500	29,433	29,433

1. Gross national product (GNP) is technically called "gross national income" (GNI). See IMF-IFS, November 2000, p. xxiv, on this change in terminology since the mid-1990s.
2. GNP comprises gross domestic product (GDP, or total of goods and services produced *inside* a country, including exports) *plus* net factor income sent back to the country from labor, capital, royalty, and remittance earnings produced *outside* the country.
3. Although purchasing power parity (PPP) is supposed to reveal *international* purchasing power (because it converts the number of units in a country's currency to the number of U.S. dollars—the world's reference currency—required to purchase the same representative basket of *national* goods and services that a U.S. dollar would by in the United States), we do not think it does so; rather, in our view, PPP reveals implicitly the purchasing power of a country's currency *inside* a country by measuring how far a dollar goes for internal purchases—not international purchases; see discussion in the text. For arguments supporting PPP (which does not include net foreign factor income or deductions for depreciation of physical capital) instead of DER methodology, see Maddison (1995:162–163).

SOURCE: Measurements are from Wilkie and Lazin (1999:307–359). Except data for the United States are revised (totals) or calculated (per capita) from IMF-IFS, November 2000, p. 850.

Measuring the size of a country's economy according to outwardly oriented GNP and GDP compared with inwardly oriented GDP-PPP illustrates the problems with the latter approach. Table B6 measures the production of goods and services according to GNP-DER, GNP-DER, and GDP-PPP for China, Hong Kong, Japan, Mexico Singapore, and the United States for 1996. The data show the extent to which GDP-PPP overstates the size of some economies, such as Mexico and China. Those who know Mexico and China well would find it impossible to imagine that the GDP/C-PPP of Mexico is $8,100, or that of China is $2,800. The implications are that the GDP-PPP approach may lead analysts to believe that the developing countries are doing "just, fine, thank you," and that there is no great need for international assistance. Furthermore, the GDP-PPP methodology cuts the total wealth of Japan to 64.1 percent of GDP-DER.

This "false" view of Japan portrayed in the GDP/C-PPP data is implicitly explained by Jim Mann (Mann 2001; see also Ball 2001):

> Watching each new American administration fumblingly try to deal with Japan reminds me of the old song "Gee, Officer Krupke."
>
> That was a dance number in "West Side Story" in which a cop named Krupke hauls a kid he's arrested before a series of specialists. Each expert in turn comes up with a different explanation of what the problem is. "The trouble is he's crazy," says the judge. "The trouble is he drinks," retorts the psychiatrist. "The trouble is he's growing," the shrink finally decides. "The trouble is he's grown," counters the social worker.
>
> So it is that the Bush administration, in its first weeks in office, has offered its own fresh but questionable diagnosis of the "trouble" with Japan's economy.
>
> Treasury Secretary Paul H. O'Neill said the Japanese government needs to help its people "achieve a higher standard of living." Under this reasoning, if consumers buy more goods, Japan's stagnant economy will start to grow again.
>
> O'Neill's approach is a change from that of the Clinton administration. Treasury Secretaries Robert E. Rubin and Lawrence Summers argued that the "trouble" with Japan was that the government wasn't spending enough money to stimulate its economy.
>
> Under pressure from Clinton officials, Japan went on a binge of public-works spending, constructing dams and bridges that were often unneeded and which, in the end, didn't produce an economic turnaround. Now, O'Neill says the Bush team will stop prodding Japan in this way.
>
> Over the past two decades, we've had a succession of other redefinitions of the "trouble" with Japan.
>
> The problem was the yen-dollar exchange rate, thought the Reagan administration. No, the first Bush administration said, we need to focus on "structural impediments," the systemic problems that contributed to America's trade deficit with Japan. No, Japan needs to buy more American cars and auto parts, thought the Clinton team in 1993.

O'Neill's remarks sparked a brief, fascinating debate in America about living standards in Japan.

Some critics think he's dead wrong, because the Japanese—despite a decade of low growth—are living quite well indeed. People in Japan often are paid as well as or better than Americans, dress in expensive clothes and live longer, on average, than do Americans.

"People like O'Neill . . . ought to be required to go to department stores and shopping malls in Japan on a Sunday, or to the evening clubs and restaurants in Tokyo on a busy night," says Harvard University's Ezra Vogel, an Asia scholar.

"Japan is still one huge La Jolla," says Chalmers Johnson, president of the nonprofit Japan Policy Research Institute, referring to the upscale Southern California town. "It's got the highest standard of living on Earth."

Others respond that O'Neill was on target because people in Japan live in tiny homes that sometimes don't have dishwashers, dryers and the other appliances that many Americans have.

"Japan's standard of living is lower than ours, but not so much lower that it shows up on the streets of Tokyo," says Edward Lincoln, a specialist on the Japanese economy at the Brookings Institution. "They live in small houses and, instead, they choose to spend their money on Gucci bags and Pierre Cardin clothing."

It's not clear what good it does for the U.S. government to goad Japan to promote greater spending on the few big items, like housing, that consumers lack. . . .

The largest question of all is why Americans feel so compelled to proclaim to Japan what its "trouble" is. The answer seems to be embedded in the post–World War II relationship between the two countries.

"For the past 56 years, we [the U.S.] have been in the position of telling the Japanese what to do—at first literally, during the [post-war] occupation," Lincoln says.

Of course, this is a two-way proposition. Japan also keeps asking each new U.S. administration for its advice and approval. Just like the guy in the song:

"Gee, Officer Krupke, we're very upset. We never had the love that every child oughta get. We ain't no delinquents, we're misunderstood. Deep down inside us there is good!"

In fairness to O'Neill, what he seemed to be trying to say, if somewhat awkwardly, was that instead of telling Tokyo what to do, the U.S. ought to leave it up to the Japanese to decide whether they want greater economic growth. That would be a welcome step toward treating Japan like a normal nation.

Yet the Bush administration may have trouble with this hands-off approach if Japan's lagging economy threatens to affect its neighbors and the United States as it did three years ago.

"The current administration's views will last until there is any sign of financial crisis," Johnson says. "Japan is the source of the capital that comes into this country and keeps inflation low. If that relationship ever stopped, the results would be catastrophic."

In other words, America and Japan are so dependent on one another that, even when they try to change, the nations still keep falling back into their customary roles. "Gee, Officer Krupke" hasn't done its last curtain call.

Although there are drawbacks in using the GDP-PPP methodology, it is widely used and therefore an important tool for testing the theory of the widening economic gap.

The GDP-PPP Series, Total and Per Capita

SALA Series

The SALA series on GDP-PPP for Latin America and the United States (table B7) presents a much more favorable picture of Latin America than the W-R1 series (table B2). Measured according to the SALA series, GDP for Latin America in 1940 was $40.4 billion compared with $31.7 billion according to the W-R series. Likewise, GDP for 1998 was $418.7 billion (table B7) compared with $324.2 (table B2).

Ironically, the growth rate for total GDP-PPP of Latin America decreases for the fifty-eight-year period, from 937 percent (table B7) to 922 percent (table B2) because Latin America appears (in table B7) to be better off in 1940.

In terms of relative position, according to the SALA series in 1940 Latin America's GDP was 13.3 percent of U.S. GDP-PPP (table B8), and according to the W-R1 series the figure was 10.4 percent (table B3). For 1998, the figures are 17.7 percent (table B8) and 13.7 percent (table B3), respectively.

In per capita terms, the SALA series (table B10) shows that in 1940 Latin America's GDP/C-PPP was 14.3 percent of U.S. GDP/C, while the W-R1 series

Table B7
SALA SERIES: GDP-PPP, 20 L AND UNITED STATES, 1940–98
(M US 1970)

	Country	1940	1950	1960	1970	1980	1990	1998
A.	ARGENTINA	10,048.0	14,018.0	18,789.0	28,686.0	33,380.0	30,240.4	44,110.7
B.	BOLIVIA	523.0	698.0	726.0	1,269.0	1,966.0	1,777.0	2,187.0
C.	BRAZIL	8,024.0	12,309.0	23,774.0	42,885.0	90,592.0	108,469.0	125,623.6
D.	CHILE	2,495.0	3,499.0	5,147.0	7,961.0	10,008.0	13,263.0	20,414.2
E.	COLOMBIA	3,013.0	4,325.0	6,768.0	11,217.0	19,354.0	27,117.0	31,870.9
F.	COSTA RICA	202.0	298.0	593.0	1,139.0	1,973.0	2,188.0	2,395.5
G.	CUBA	1,639.0	2,095.0	2,713.0	3,196.0	6,243.0	7,278.0	5,926.5
H.	DOMINICAN REP.	294.0	533.0	929.0	1,523.0	2,978.0	3,648.0	4,849.0
I.	ECUADOR	424.0	796.0	1,281.0	2,190.0	5,344.0	6,408.0	7,390.6
J.	EL SALVADOR	310.0	512.0	807.0	1,397.0	1,920.0	1,860.0	2,344.0
K.	GUATEMALA	840.0	885.0	1,286.0	2,196.0	3,806.0	3,906.0	4,796.7
L.	HAITI	311.0	401.0	484.0	514.0	606.0	584.0	443.5
M.	HONDURAS	229.0	323.0	468.0	733.0	1,172.0	1,424.0	1,603.2
N.	MEXICO	6,632.0	12,926.0	22,802.0	44,934.0	90,185.0	104,100.0	118,321.8
O.	NICARAGUA	154.0	239.0	398.0	777.0	857.0	758.0	818.9
P.	PANAMA	299.0	371.0	595.0	1,266.0	2,144.0	2,256.0	3,061.5
Q.	PARAGUAY	342.0	410.0	521.0	813.0	1,885.0	2,563.0	2,689.6
R.	PERU	1,797.0	2,923.0	4,882.0	7,977.0	10,947.0	9,700.0	12,981.5
S.	URUGUAY	1,273.0	1,867.0	2,295.0	2,676.0	3,528.0	3,563.0	4,543.8
T.	VENEZUELA	1,528.0	3,360.0	6,978.0	12,457.0	18,609.0	19,794.0	22,354.0
	LATIN AMERICA	40,377.0	62,788.0	102,236.0	175,806.0	307,497.0	350,896.4	418,726.5
	UNITED STATES	303,507.5	470,063.2	662,397.2	997,205.0	1,365,903.3	1,869,522.5	2,367,791.0

SOURCE: Through 1980 from ECLA (see SALA, 26–3324); thereafter calculated by SALA with ECLA percentage change rates in SALA, 32–3401 and ECLAC-SY. Latin America totals are corrected here to include Cuba's GDP-PPP. Thorp's per capita data for Cuba are converted here to total data (GDP/C × population = GDP).

Table B8
SALA SERIES: LATIN AMERICA, BRAZIL, MEXICO, AND CHILE GDP-PPP AS PERCENTAGE OF U.S. GDP-PPP, 1940–98

Year	Latin America	Brazil	Mexico	Chile
1940	13.3	2.6	2.1	.8
1950	13.3	2.6	2.7	.7
1960	15.4	3.6	3.4	.8
1970	17.6	4.3	4.5	.8
1980	22.5	6.6	6.6	.7
1990	18.7	5.8	5.6	.7
1998	17.7	5.3	5.0	.9

SOURCE: Calculated from table B7.

(table B5) shows 11.2 percent. For 1998 the respective figures were 9.9 percent and 7.6 percent.

Table B10 also shows some contrasts for individual country data. From 1940 to 1998, as a percentage of U.S. GDP/C-PPP Brazil narrowed the gap by .3 percent, standing at about 9 percent of U.S. GDP-PPP by 1998. In Mexico and Chile the gap widened; Mexico fell by .4 percent of the U.S. total but still remained at about 14 percent in 1998. In Chile the gap increased by 5.6 percent, remaining at 15.9 in 1998.

Let us now turn to yet another, less bleak, picture of Latin America GDP/C in relation to the United States, that developed by Rosemary Thorp.

Thorp Series, 1950–95

At the invitation of the Inter-American Development Bank (IDB) to mark the end of the twentieth century, Rosemary Thorp undertook to write a history of the Latin American economies from 1900 to 1995. She established working groups, consultancies, and an advisory group to develop the study (Thorp 1998). Her long-term series, however, is complete for all twenty Latin American countries only since 1950, showing data in terms of GDP/C-PPP at ten-year intervals except for 1990–95. Thorp includes careful explanations of the methodology and a review of the literature. She uses three-year averages for each date in order to reduce the problem of fluctuations in data.

Like Maddison, discussed below, Thorp encounters the problem of assuring that "reality" can be determined. In fact, perceptions of reality, coming mainly from each year's data (rather than three-year averages) on GDP, its components, and the prevailing exchange rate, provide the information upon which leaders and investors base their decisions. Those decisions, regardless of "reality," interact with history and change its course. Thus, although Thorp brilliantly analyzes underlying economic trends, they seem to happen almost passively, without

Table B9
SALA SERIES: GDP/C-PPP, 20 L AND UNITED STATES, 1940–98
(US 1970)

	Country	1940	1950	1960	1970	1980	1990	1998
A.	ARGENTINA	709.1	821.2	943.2	1,207.8	1,182.0	929.6	1,221.1
B.	BOLIVIA	193.7	231.9	190.1	277.1	351.1	270.5	274.9
C.	BRAZIL	195.2	235.9	341.0	463.5	746.9	749.5	757.4
D.	CHILE	493.1	576.4	679.0	849.6	897.6	1,012.4	1,377.1
E.	COLOMBIA	331.1	381.7	438.9	546.4	747.5	839.5	781.1
F.	COSTA RICA	325.8	372.5	474.4	658.4	876.9	778.6	623.7
G.	CUBA	382.1	380.2	385.9	373.8	642.3	684.7	533.2
H.	DOMINICAN REP.	167.0	237.9	305.6	375.1	547.4	508.8	589.0
I.	ECUADOR	171.7	248.8	293.8	367.4	658.1	624.6	607.0
J.	EL SALVADOR	190.2	275.3	329.4	406.1	425.7	369.8	388.6
K.	GUATEMALA	381.8	314.9	335.8	416.7	550.0	424.6	444.1
L.	HAITI	109.9	118.3	133.7	121.2	121.0	90.0	55.8
M.	HONDURAS	199.1	225.9	253.0	277.7	317.6	278.7	260.8
N.	MEXICO	337.5	501.2	632.5	886.4	1,294.6	1,260.4	1,234.7
O.	NICARAGUA	185.5	225.5	282.3	424.6	313.9	195.9	170.4
P.	PANAMA	482.3	463.8	561.3	885.3	1,093.9	940.0	1,106.4
Q.	PARAGUAY	308.1	292.9	297.7	353.5	598.4	607.3	515.1
R.	PERU	269.0	366.8	487.2	593.1	632.8	449.7	523.5
S.	URUGUAY	646.2	848.6	903.5	980.2	1,212.4	1,153.1	1,381.5
T.	VENEZUELA	411.9	676.1	949.4	1,211.8	1,238.9	1,024.0	961.8
	LATIN AMERICA[1]	326.5	404.8	501.0	652.7	877.2	829.6	851.4
	UNITED STATES	2,289.1	3,087.0	3,666.1	4,863.2	5,997.1	7,480.8	8,640.7

1. Population weighted.

SOURCE: Calculated from table B7.

Table B10
SALA SERIES: LATIN AMERICA, BRAZIL, MEXICO, AND CHILE GDP/C-PPP AS PERCENTAGE OF U.S. GDP/C-PPP, 1940–98

Year	Latin America	Brazil	Mexico	Chile
1940	14.3	8.5	14.7	21.5
1950	13.1	7.6	16.2	18.7
1960	13.7	9.3	17.2	18.5
1970	13.4	9.5	18.2	17.5
1980	14.6	12.5	21.6	15.0
1990	11.1	10.0	16.8	13.5
1998	9.9	8.8	14.3	15.9

SOURCE: Calculated from table B9.

attribution to leaders, investors, and organized civic groups or even labor unions. A sequel, with discussion of the active role played by governments, leaders, and people, would be a welcome companion to the 1998 book.

Because Thorp does not include her data on GDP-PPP, let us proceed directly to analysis of her view of GDP per capita, which she gives in dollars of 1970 (table B11). Her data suggest that the absolute economic gap between Latin America and the United States widened (according to our calculations) from $2,905 to $6,863.

Furthermore, the IDB announces with some fanfare in the description of the study on the back cover of the book that although per capita income in Latin America increased fivefold since 1900, in 1995 it was lower in proportion to that of the United States (Thorp's proxy for the industrial countries) than a century ago. Yet when we examine the percentages given in table B12, that assertion does not stand up. Thorp does not give total GDP-PPP for the first half century, but in 1950 Latin America's GDP-PPP/C as a percentage of U.S. GDP/C-PPP was 11.9 percent and in 1995 it was 11.4 percent of the U.S. figure—revealing a steady relationship, except for the temporary increase in 1980 to 14.0 percent. Brazil's GDP/C as a percentage of U.S. GDP/C rose dramatically from 6.5 to 10.4 percent, climbing to 12.3 percent during the 1980 boom. The relationship, in per capita terms, for Mexico and Chile remained fairly stable over the forty-five-year period; as in Brazil, the percentages increased in 1980 to 18.4 for Mexico and 15.2 percent for Chile. By 1995 Mexico and Brazil stood at approximately 14 and 18 percent, respectively, only a slight increase since 1950. So where is the evidence for the IDB's claim of a widening economic gap?

Although the IDB has chosen to emphasize that Latin America's share of world trade has been halved since 1900, Thorp gives no systematic data to support that assertion nor does her study note that all countries have lost market share since 1950. After World War II and the end of the Cold War, the number of competing countries has grown

Table B11
THORP SERIES: GDP/C-PPP, 20 L AND UNITED STATES, 1950–95
(US 1970, Three-Year Averages)

	Country	1950	1960	1970	1980	1990	1995
A.	ARGENTINA	773	852	1,191	1,377	1,147	1,402
B.	BOLIVIA	261	215	294	352	289	310
C.	BRAZIL	215	324	450	775	788	809
D.	CHILE	576	679	851	959	1,098	1,392
E.	COLOMBIA	360	420	536	674	749	856
F.	COSTA RICA	371	469	655	884	808	880
G.	CUBA[1]	380	390	373	649	686	480
H.	DOMINICAN REP.	244	298	379	543	509	545
I.	ECUADOR	230	285	358	542	520	549
J.	EL SALVADOR	274	329	407	409	355	429
K.	GUATEMALA	309	337	419	514	447	475
L.	HAITI	129	120	121	157	118	85
M.	HONDURAS	227	237	280	307	276	294
N.	MEXICO	458	611	879	1,163	1,107	1,090
O.	NICARAGUA	219	288	426	314	193	175
P.	PANAMA	457	561	892	1,098	943	1,099
Q.	PARAGUAY	295	302	359	619	563	559
R.	PERU	370	485	613	702	497	562
S.	URUGUAY	864	915	971	1,156	1,155	1,351
T.	VENEZUELA	974	1,128	1,328	1,533	1,248	1,248
	LATIN AMERICA	394	487	649	884	837	879
	UNITED STATES	3,299	3,844	5,153	6,301	7,379	7,742

1. Cuba data are in U.S. dollars of 1965.

a. For six countries, 1900–40, see table B35.

SOURCE: Thorp, p. 353.

Table B12
THORP SERIES: LATIN AMERICA, BRAZIL, MEXICO, AND CHILE GDP/C-PPP AS PERCENTAGE OF U.S. GDP/C-PPP, 1950–95

Year	Latin America	Brazil	Mexico	Chile
1950	11.9	6.5	13.9	17.5
1960	12.7	8.4	15.9	17.7
1970	12.6	8.7	17.1	16.5
1980	14.0	12.3	18.4	15.2
1990	11.3	10.7	15.0	14.9
1995	11.4	10.4	14.1	17.9

SOURCE: Calculated from table B11. For previous years, see table B35.

remarkably, and the United States has also seen its share of world trade reduced as well.

An examination of trade data in SALA, 37–2601 shows that in 1950 Latin America's exports accounted for 10.9 percent of world exports compared with the U.S. total of 16.9 percent. The totals for 1995 were 3.6 percent and 11.5 percent, respectively. It is within these general declines in shares that we can see Latin America's exports falling from 64.5 to 31.3 percent of U.S exports. Here we find decline by half, but not in Thorp.

If Thorp's data do not depict the elusive gap in GDP between Latin America and the United States, then perhaps Angus Maddison's data, the longest series yet developed, will do so.

Maddison Series, 1820–1994

To further test the nature of the economic gap, we turn to the work of Angus Maddison (1995). Maddison publishes data for the period from 1820 through 1994 from which he extrapolates the total for Latin America based on seven countries: Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela. Although the sample falls well short of the twenty countries used in our study, it did account for 76 percent of the population of Latin America in 1820, 83 percent in 1900, and 84 percent in 1990. In economic terms, the sample totaled 82 percent of Latin America's GDP in 1940 and 89 percent of GDP in 1998. The sample constitutes a relatively consistent proxy for Latin America.

Maddison's sample of data on U.S. and Latin American GDP-PPP is presented in table B13 (1990 dollars) and table B14 (converted to percentage share of U.S. GDP). While Latin America's GDP-PPP was almost 91 percent of the U.S. figure in 1820, this percentage decreased to 17.9 percent in 1900, increased to 22.8 percent in 1950, and increased further still to 35.4 percent in 1994. The improvement since 1900 can be attributed to the fact that GDP-PPP of the seven Latin American countries in the sample grew at an annualized rate of 3.9 percent

Table B13
MADDISON SERIES: GDP-PPP, 7 L AND UNITED STATES, 1820–1994
(M US 1990)[1]

	Country	1820	1900	1938	1950	1994
A.	ARGENTINA	~	12,932	55,883	85,524	282,408
C.	BRAZIL	3,018	12,668	50,970	86,909	787,009
D.	CHILE	~	5798	15,430	23,274	108,220
E.	COLOMBIA	~	3,891	16,038	24,955	184,928
N.	MEXICO	5,066	15,744	29,951	57,069	474,202
R.	PERU	~	3,096	10,705	17,270	76,309
T.	VENEZUELA	~	2,087	15,015	37,377	181,316
	LATIN AMERICA[2]	11,264	56,216	193,991	332,379	2,094,392
	UNITED STATES	12,432	312,866	800,295	1,457,624	5,903,015

1. Called "Geary-Khamis Dollars;" see Maddison (1995:163).
2. Proxy total for Latin America is based upon the trend for the seven countries listed. Maddison adjusted the data to impute the value of the informal sector if not imputed by national source.

SOURCE: Maddison (1995:166, 182–183, 188–189, 222–223).

Table B14
MADDISON SERIES: LATIN AMERICA, BRAZIL, MEXICO, AND CHILE GDP-PPP AS PERCENTAGE OF U.S. GDP-PPP, 1820–1994

Year	Latin America	Brazil	Mexico	Chile
1820	90.6	24.3	40.7	~
1900	17.9	4.0	5.1	1.8
1938	24.2	6.4	3.7	1.9
1950	22.8	5.9	3.9	1.6
1994	35.4	13.3	8.0	1.8

SOURCE: Calculated from table B13.

Table B15
MADDISON SERIES: GDP/C-PPP, 7 L AND UNITED STATES, 1820–1994

	Country	1820	1900	1938	1950	1994
A.	ARGENTINA	~	2,756	4,072	4,987	8,373
C.	BRAZIL	670	704	1,291	1,673	4,862
D.	CHILE	~	1,949	3,139	3,827	7,764
E.	COLOMBIA	~	973	1,843	2,089	5,359
N.	MEXICO	760	1,157	1,380	2,085	5,098
R.	PERU	~	817	1,757	2,263	3,232
S.	VENEZUELA	~	821	4,144	7,424	8,389
	LATIN AMERICA[1]	715	1,134	1,975	2,614	5,479
	UNITED STATES	1,287	4,096	6,134	9,573	22,569

1. Total Latin America for 1994 calculated by adding Maddison's country totals and dividing by the total for his population data (Maddison 1995:106–107, 112–113, 210–211).

SOURCE: Maddison (1995:196–197, 202–203).

Table B16
MADDISON SERIES: LATIN AMERICA, BRAZIL, MEXICO, AND CHILE GDP/C-PPP AS PERCENTAGE OF U.S. GDP/C-PPP, 1820–1994

Year	Latin America	Brazil	Mexico	Chile
1820	55.6	52.1	59.1	~
1900	27.6[a]	17.2	28.2	47.6
1938	32.2	21.0	22.5	51.2
1950	27.3	17.5	21.8	39.9
1994	24.3	21.5	22.6	34.4

a. Thorp gives 12.5 percent (see table B36, herein).

SOURCE: Calculated from table B15.

from 1900 to 1992, compared to 3.2 percent for the United States (table B29). If Maddison's data are correct, in the nineteenth century Latin America either suffered a terrible economic collapse after independence, as many surmise, or stopped growing while the United States economy grew dramatically. Some combination of the two hypotheses is likely. Recovering from a disastrous nineteenth century, since 1900 Latin America's GDP as a percentage of U.S. GDP almost doubled, Brazil's tripled, Mexico's grew from 5 to 8 percent, and Chile's share remained steady at about 2 percent (table B14).

Turning to Maddison's per capita data (table B15) allows us to calculate GDP/C-PPP (table B16) to see the extent to which population has eaten away at the total GDP-PPP available in Latin America. A comparison of Maddison's data for U.S. and Latin American GDP/C confirms the trend since 1940 shown by Thorp's data (table B12): an improvement in comparative terms in GDP/C-PPP from 1940 to 1980, followed by a slight decline through the 1990s.

Using Maddison's data to examine the entire century, however, shows that Latin America's GDP/C-PPP relative to the United States has remained fairly constant, ranging from 23 to 30 percent of U.S. GDP/C. Latin American GDP/C has increased and decreased, relative to the United States, several times over the century, while remaining in a fairly consistent range (table B16). In 1900 Latin America's GDP/C-PPP was 27.6 percent of the U.S. total,

increasing to 32.2 percent in 1938, then declining to 24.3 percent in 1994.

Therefore, Latin America's GDP/C for the entire century (through 1994) improved in relative terms during the first eighty years, but from 1900 through 1994 it declined slightly. Although this is a slight overall decrease, it is hardly a "widening gap." As the comparison above demonstrates, Latin American GDP/C as a percentage of the U.S. figure has alternately increased and decreased, yet has remained in a fairly constant range relative to the United States over the course of the twentieth century.

From 1900 through 1992 Latin America's GDP/C-PPP grew at almost the same pace as U.S. GDP/C, averaging 1.7 percent annually compared to the U.S. rate of 1.8 percent, a fairly constant position (table B30). The true widening gap in GDP/C was evident in the nineteenth century (as was the case with GDP) when Latin America's GDP/C grew at a paltry .6 percent on an annualized basis, while the U.S. annualized rate was 1.5 percent. The difference in growth rates resulted in a real widening gap in the nineteenth century when GDP/C-PPP in Latin America, relative to the United States, decreased from 55.6 percent in 1820 to 27.6 percent in 1900 (table B16).

Angus Maddison's data (table B26) show, with respect to GDP relative to the United States, that Latin America has improved its condition during the twentieth century. In GDP/C terms (table B28), although declining slightly, Latin America has maintained a fairly consistent position relative to the United States over the century. Even a slight decline, however, is an important achievement given the strength of the U.S. economy since 1900. In the meantime Eastern Europe and Africa experienced a disastrous decline in GDP/C in comparison with the United States (table B28), while Europe maintained a fairly consistent position.

W-R2 IMF Implicit Series, 1950–98

The following section develops what we call the W-R2 series, which is based on IMF implicit data for GDP-DER and GDP/C-DER. We make calculations in current U.S. dollars from IMF data, which IMF itself does not make. Although the absolute data for the W-R2 series do not discount inflation (and thus are misleading for comparisons over time), the results are excellent for calculating Latin America's share of U.S. totals for a given year. The percentage for specific years is not affected by inflation and is "accurate" for determining what each country can actually buy and earn in international markets, which are dollar dominated.

The IMF is "prevented" from making such conversions because of understandings and agreements with its member nations that it will not make its own judgments about GDP and GDP/C values but will use data provided to it by the governments concerned. ECLA has taken the same position in presentations of its GDP-PPP data since the 1980s; such presentations focus on percentage change rather than absolute data, which are needed to understand the relative size of economies. Neither the IMF nor ECLA is permitted to make, at least officially or in print, the calculations presented here to test the extent to which Latin America's economy is converging with that of the United States.

Table B17 gives our calculations of GDP-DER for the W-R2 series, excluding Cuba (not an IMF member country). Clearly, the totals are affected by inflation.

The data in table B18, however, enable us to calculate the "gap" between Latin America and the United States and to see that it dramatically narrowed for specific years from 1950 to 1998, especially by 1980 when Latin America GDP-DER reached more than 30 percent of the U.S. total. By 1990 Latin America GDP-DER had decreased to almost 19 percent. Chile's percentage decreased by half, while Brazil experienced little decline between 1980 and 1990 (remaining at nearly 8 percent during the "lost decade"). Mexico fared less well—from 1980 to 1990 its GDP-DER fell from 6.9 percent of the U.S. total to about 4.5 in the 1990s.

Table B19 gives our calculations of GDP/C-DER for the W-R2 series. Again the data are heavily influenced by inflation and are not important in themselves except to calculate (table B20) percentage shares vis-à-vis the United States.

Table B20 shows Latin America's GDP/C-DER relative to the United States: 16.8 percent in 1950, 19.6 percent in 1980, and hovering in the 11–12 percent range in other years. Brazil's problems came in 1960 when GDP/C as a percentage of the U.S. figure fell to 8.3 percent, increasing only slightly to 9.0 percent by 1970. Meanwhile, Mexico's share gained steadily, reaching 22.7 percent in 1980, after which it fell to about 13.6 percent in the 1990s. Chile's decline came in 1960 when the percentage decreased

Table B17
W-R2 SERIES: GDP-DER, 20 L AND UNITED STATES, 1950–98[1]
(Calculated from IMF Data in Current Dollars)

	Country	1950	1960	1970	1980	1990	1998
A.	ARGENTINA	13,700	12,168	23,736.2	209,018.3	141,353.3	298,280.1
B.	BOLIVIA	77	377	1,041.2	5,012.2	4,867.5	8,570.6
C.	BRAZIL	14,828	17,024	42,324.3	236,296.2	465,003.0	775,354.2
D.	CHILE	3,315	4,066	8,726.8	27,571.0	30,322.8	72,949.5
E.	COLOMBIA	4,010	4,031	7,198.9	33,399.3	40,274.2	100,539.0
F.	COSTA RICA	258	509	984.8	4,831.4	5,709.2	10,479.1
G.	CUBA	~	~	~	~	~	~
H.	DOMICAN REP.	399	732	1,485.5	6,630.7	7,073.7	15,845.7
I.	ECUADOR	483	943	1,674.2	11,733.5	10,686.0	19,722.7
J.	EL SALVADOR	405	559	1,028.6	3,566.6	4,544.0	11,863.4
K.	GUATEMALA	645	1,044	1,904.0	7,879.4	7,650.2	18,941.9
L.	HAITI	222	273	410.9	1,383.8	2,982.0	3,522.4
M.	HONDURAS	226	336	723.0	2,566.0	3,048.9	5,371.4
N.	MEXICO	4,800	12,472	35,544.0	194,762.8	262,709.9	414,970.8
O.	NICARAGUA	151	334	772.6	2,066.7	1,565.0	2,122.8
P.	PANAMA	257	416	1,016.3	3,810.3	5,313.2	9,143.8
Q.	PARAGUAY	291	280	594.6	4,448.1	5,264.6	8,504.8
R.	PERU	1,013	1,957	6,219.6	20,806.3	33,914.2	62,744.7
S.	URUGUAY	882	1,200	2,423.4	10,163.0	8,366.1	20,831.5
T.	VENEZUELA	3,150	7,664	11,755.1	59,219.6	48,597.8	95,022.8
	LATIN AMERICA	49,112	66,385	149,564	845,165	1,089,246	1,954,781
	UNITED STATES	287,000	527,400	1,039,700	2,795,600	5,803,200	8,759,900

1. Calculated from IMF implicit data.

SOURCE: Calculated by converting national GDP series with IMF exchange rate data (yearly averages) in IMF-IFS, CD-ROM, 1999.

Table B18
W-R2 SERIES: LATIN AMERICA, BRAZIL, MEXICO, AND CHILE GDP-DER AS PERCENTAGE OF U.S. GDP-DER, 1950–98

Year	Latin America[1]	Brazil	Mexico	Chile
1950	17.1	5.1	1.6	1.1
1960	12.6	3.2	2.3	.7
1970	14.4	4.0	3.4	.8
1980	30.2	8.4	6.9	.9
1990	18.8	8.0	4.5	.5
1998	22.3	8.8	4.7	.8

1. Excludes Cuba.

SOURCE: Calculated from table B17.

from 28.9 in 1950 to 18.3 in 1960. By 1990 Chile's GDP/C in relation to the United States had fallen to 10.0 percent, but increased to 15.3 by 1998.

The last GDP series to be considered was developed by Juan Moreno-Pérez (1995). It is included in this study because it enables us to examine the result of changing the base year for calculating change. The series is also important because it includes data for Cuba. For the purposes of the analysis here, we include only his totals in the comparative tables that follow. (See Appendixes C and D for the complete Moreno-Pérez GDP and GDP/C data.)

Measuring the United States–Latin America Economic "Gap": A Comparison of Seven Approaches

The seven GDP series examined above are Jolly (for GDP/C only), W-R1, SALA, Maddison (1995), Thorp, W-R2, and summary totals in the Moreno-Pérez series (discussed in detail below).

The data in table B21 show that by the middle or late 1990s the GDP "gap" had narrowed according to six series after 1950, but not since 1980 in any of them. The Maddison series, the most optimistic view, puts Latin America's GDP after 1990 at 35.4 percent of U.S. GDP, much higher than in the Thorp (20.3 percent) or Moreno-Pérez (24.9 percent) data. The lowest percentage by the late 1990s appears in the W-R1 series (13.7 percent), much lower than the SALA series (17.7 percent). In the middle range is the W-R2 series, in which Latin America GDP is 22.3 percent of the U.S total.

The per capita figures in table B22 let us compare the widening gap in all series between 1938 and the middle or late 1990s. The Maddison data not only show the most change (from 32.1 percent to 24.3 percent of U.S. GDP/C, which is the highest

Table B19
W-R2 SERIES: GDP/C-DER, 20 L AND UNITED STATES, 1950–98
(Calculated from IMF Data in Current Dollars)

		1950	1960	1970	1980	1990	1998
A.	ARGENTINA	802.6	610.8	999.4	7,401.5	4,345.3	8,257.3
B.	BOLIVIA	25.5	98.7	227.3	895.0	740.9	1,077.1
C.	BRAZIL	284.2	244.2	457.5	1,948.2	3,213.1	4,675.0
D.	CHILE	546.1	536.4	931.4	2,472.7	2,314.7	4,921.0
E.	COLOMBIA	353.9	261.4	350.7	1,290.0	1,246.9	2,464.0
F.	COSTA RICA	321.9	407.6	569.3	2,147.3	2,031.8	2,728.2
G.	CUBA	~	~	~	~	~	~
H.	DOMINICAN REP.	178.3	240.8	365.9	1,218.9	986.6	1,924.9
I.	ECUADOR	150.9	216.2	280.9	1,445.0	1,041.5	1,619.9
J.	EL SALVADOR	217.9	228.1	299.0	790.8	903.4	1,966.7
K.	GUATEMALA	229.5	272.5	361.3	1,138.6	831.5	1,753.7
L.	HAITI	65.5	75.5	96.9	276.2	459.5	443.0
M.	HONDURAS	158.0	181.4	273.9	695.4	596.7	873.8
N.	MEXICO	186.1	346.0	701.2	2,795.9	3,180.9	4,330.2
O.	NICARAGUA	142.5	236.7	422.2	757.0	404.4	441.6
P.	PANAMA	321.0	392.3	710.7	1,944.0	2,213.8	3,304.6
Q.	PARAGUAY	207.7	160.2	258.5	1,412.1	1,247.5	1,628.6
R.	PERU	127.1	195.3	462.4	1,202.7	1,572.3	2,530.3
S.	URUGUAY	400.9	472.4	887.7	3,492.4	2,707.5	6,333.7
T.	VENEZUELA	633.9	1,042.7	1,143.5	3,942.7	2,514.1	4,088.4
	LATIN AMERICA	316.7	325.3	555.3	2,410.9	2,575.1	3,974.7
	UNITED STATES	1,884.8	2,919.0	5,070.5	12,274.3	23,221.2	31,967.2

SOURCE: Calculated from table B18 with IMF population data in SALA, 35–501 to 521 and IFM-IFS-Y, 1999.

Table B20
W-R2 SERIES: LATIN AMERICA, BRAZIL, MEXICO, CHILE GDP/C-DER AS PERCENTAGE OF U.S. GDP/C-DER, 1950–98

Year	Latin America[1]	Brazil	Mexico	Chile
1950	16.8	15.1	9.8	28.9
1960	11.1	8.3	11.8	18.3
1970	11.0	9.0	13.8	18.3
1980	19.6	15.8	22.7	20.1
1990	11.1	13.8	13.6	10.0
1998	12.4	14.6	13.5	15.3

1. Excludes Cuba.

SOURCE: Calculated from table B19.

GDP/C figure in relation to the United States), but the 24.3 figure for 1994 is approximately what Jolly had projected the gap would be at the end of the twentieth century. The SALA series (9.9 percent) and the W-R1 series also show a widening economic gap by 1998, the latter yielding the lowest percentage among all the series (7.6 percent).

The data for Latin America GDP/C in the late 1990s in the remaining three series (Thorp, Moreno-Pérez, and W-R2) are in the middle range, 11.4, 13.9, and 12.4 percent of the U.S. total, respectively. Since the only series that we can carry forward into the twenty-first century is W-R2, this may be the best one to use to measure long-term economic gap. Perhaps it is also the fairest method, since it shows (table B22) Latin America GDP/C as a percentage of U.S. GDP/C to be 12.4 percent, between the two extremes—Jolly (23.8 percent) and W-R1 (7.6 percent).

Before making this determination, however, it is important to note (1) factors such as population and base year that affect estimates and (2) the implications of the Maddison series, the series that goes back further than any of the others, to 1820.

Economic "Gaps" between World Regions since 1820

Of the series presented, only Maddison enables comparisons between countries and regions since 1820 and analyses of the extent of an economic gap among rich countries as a reference point for assessing Latin America's economy relative to the U.S. economy. Table B23 illustrates the economic gap between the United Kingdom and the United States. In 1820 U.S. GDP-PPP was only 36 percent of the United Kingdom's. By 1870, however, U.S. GDP exceeded United Kingdom GDP by $2.7 billion. In 1900 GDP-PPP in the United Kingdom was only 56.4 percent of the U.S. total, a percentage that declined to 35.5 percent by 1938 and to 16.3 percent by 1994.

With respect to GDP/C-PPP (table B24), the United States did not close the per capita economic

Table B21

COMPARATIVE VIEWS OF LATIN AMERICA GDP AS PERCENTAGE OF U.S. GDP, BY SERIES AND BASE YEAR, 1938–2000

Year	Jolly[1] (1960)	W-R1[2] (1970)	SALA[3] (1970)	Maddison[3] (1990)	Thorp[3] (1970)	Moreno-Pérez[4] (1980)	W-R2[2] (Current)
1938	~	~	~	24.2	~	~	~
1940	~	10.4	13.3	~	~	14.9	~
1950	~	10.4	13.4	22.8	12.4	15.1	7.1
1960	~	12.1	15.4	27.5	14.7	17.8	12.6
1970	~	13.7	17.6	30.1	16.8	20.5	14.4
1980	~	17.4	22.5	38.9	21.6	27.0	30.2
1990	~	14.5	18.8	33.6	19.6	23.6	18.8
1994	~	~	~	35.4	~	~	22.1
1995	~	~	~	~	20.3	~	22.6
1998	~	13.7	17.7	~	~	24.9[a]	22.3
2000	~	~	~	~	~	~	~

1. Share of GDP-DER in developing countries, not calculated by Jolly.
2. DER method.
3. PPP method: calculated using Thorp GDP/C and Thorp population data.
4. PPP method: Juan Moreno-Pérez data from Appendix C, herein.

a. Extrapolated using ECLA data.

SOURCE: Tables B3, B8, B12, B14, B18; IMF-IFS.

Table B22

COMPARATIVE VIEWS OF LATIN AMERICA GDP/C AS PERCENTAGE OF U.S. GDP/C, BY SERIES AND BASE YEAR, 1938–2000

Year	Jolly[1] (1960)	W-R1[2] (1970)	SALA[3] (1970)	Maddison[3] (1990)	Thorp[3] (1970)	Moreno-Pérez[4] (1980)	W-R2[2] (Current)
1938	~	~	~	32.1	~	~	~
1940	~	11.2	14.3	~	~	15.9	~
1950	29.0	10.2	13.1	27.3	11.9	14.8	16.8
1960	27.3	10.6	13.7	29.5	12.7	15.7	11.1
1970	~	10.4	13.4	28.2	12.6	15.6	11.0
1980	~	11.3	14.6	30.9	14.0	17.5	19.6
1990	~	8.3	11.1	23.5	11.3	13.5	11.1
1994	~	~	~	24.3	~	~	12.9
1995	~	~	~	~	11.4	~	13.2
1998	~	7.6	9.9	~	~	13.9[a]	12.4
2000	23.8	~	~	~	~	~	~

1. Share of GDP-DER in developing countries, calculated from figure B1.
2. DER method.
3. PPP method: calculated using Thorp GDP/C and Thorp population data.
4. PPP method: Juan Moreno-Pérez data calculated from Appendix D, herein.

a. Extrapolated here using ECLA data. For previous years, see table B35, herein.

SOURCE: Tables B5, B10, B12, B16, B20.

gap until 1936. In 1820 and 1900 U.S. GDP/C-PPP was 73.3 percent and 89.2 percent, respectively, of U.K. GDP/C. By 1994 U.K. GDP/C-PPP was 72.5 percent of the U.S. figure.

These calculations based upon the Maddison series show that there has always been an economic gap between the United Kingdom and the United States, but that the U.K.–U.S. relationship reversed between 1870 and 1936, the United Kingdom falling ever further behind. Interestingly, if Maddison is correct, where the United Kingdom amounted to only 16.3 percent of U.S. GDP-PPP in 1994 (table B23), it amounted to 72.5 percent of U.S. GDP/C-PPP (table B24). This contrast suggests that the United Kingdom had much more to allocate to social expenditure, a characteristic of its program of national expenditure for more than one hundred years. Given these findings about the United Kingdom, it is surprising that there seems to be little concern about the widening U.K.–U.S. gap or interest in the narrowing Latin America–United Kingdom gap.

To view Latin America's economic performance in global context, it is helpful to examine economic activity in other world regions in relation to the U.S. economy. In addition to Latin American data (seven countries), Maddison provides data (table B25) for five other world regions: Western

Table B23
TOTAL U.K.–U.S. ECONOMIC GAP, ABSOLUTE AND PERCENTAGE, 1820–1994

Country	1820	1900	1938	1994
PART A. ABSOLUTE GDP-PPP				
United Kingdom	34,829	176,504	284,165	961,014
United States	12,432	312,866	800,295	5,903,015
PART B. PERCENTAGE				
United States/United Kingdom	35.7	**	**	**
United Kingdom/United States[1]	**	56.4	35.5	16.3

1. By 1870 the United States GDP-PPP ($98.4 billion) had surpassed the United Kingdom ($95.7 billion).

SOURCE: Calculated from Maddison (1995:182–183).

Table B24
PER CAPITA U.K.–U.S. ECONOMIC GAP, ABSOLUTE AND PERCENTAGE, 1820–1994

Country	1820	1900	1938	1994
PART A. ABSOLUTE GDP/C-PPP				
United Kingdom	1,756	4,593	5,983	16,371
United States	1,287	4,096	6,134	22,569
PART B. PERCENTAGE				
United States/United Kingdom	73.3	89.2	**	**
United Kingdom/United States[1]	**	**	97.5	72.5

1. In 1936 the United States GDP ($6.2 billion) surpassed the United Kingdom ($5.8 billion).

SOURCE: Calculated from Maddison (1995:196–197).

Europe (twelve countries), Southern Europe (five countries), Eastern Europe (seven countries), Asia (eleven countries), Africa (ten countries) as well as seven Latin American countries. He also gives data on a region he calls "Western Offshoots" (Australia, Canada, New Zealand, and the United States). For our purposes we include only the data for the United States, the basis for world comparison in our analysis as well as for Maddison, Thorp, SALA, the W-R series, and Moreno-Pérez.

The GDP-PPP of the six regions in absolute terms is shown in table B25. By 1938 the United States was positioned to soon surpass the other world regions and did so by 1950. In 1820 Latin America had the lowest GDP of the seven regions (counting the United States as a region), but by 1900 Latin America had moved up in rank. By 1900 Latin America had surpassed Africa, by 1938 Southern Europe, and by 1992 Eastern Europe (including the USSR). In relative terms, however, since 1900 the gap between the United States and other world regions has widened, with the exception of Latin America (table B26). In 1992 Latin America GDP-PPP was 35.4 percent of the U.S. total, Western Europe 95 percent (up from 83.7 percent in 1950), and Asia 165.5 percent, up an astounding 103.9 percentage points since 1950. Note that Latin America is the only world region to have gained ground on the United States in terms of GDP-PPP during the twentieth century.

With respect to GDP/C–PPP, in absolute terms (table B27), Latin America ranked above Africa and Asia in 1820, above Asia by 1900, Southern Europe by 1938, and Eastern Europe by 1950. In percentage terms (table B28), however, in 1992 Latin America GDP/C as a percentage of the U.S. total was below that of Western Europe and Southern Europe. The latter experienced a huge gain between 1950 and 1992, with GDP/C-PPP increasing from 21.1 to 38.3 percent while the Latin American percentage dropped slightly, from 27.3 percent to 24.5 percent. Western Europe, almost the equal of the United States in 1820, went into decline in the early twentieth century, owing in part to the two world wars that took place in the region. Between 1950 and 1992, however, the region improved its GDP/C position in relation to the United States, reaching 80.6 percent in 1992, up from 75.4 percent in 1900.

With these comparative data as background, we can turn to the issue of growth rates. Unfortunately, international agencies such as the World Bank and IMF focus on percentage change because some member countries discourage size comparisons. And these countries, although small and not very influential in world affairs, still have one vote in the United Nations and many other international bodies. Comparing growth rates is problematic because, on the one hand, the smaller the absolute base (countries with small economies), the easier it is to show impressive growth rates. On the other hand, the higher the absolute base (large economies), the harder it is to achieve significant percentage change. Only when growth rates are viewed in conjunction with absolute data does it make sense to analyze them.

Table B29 shows growth rates calculated by Maddison for GDP-PPP from 1820 to 1992. Although the real widening gap in Latin America relative to the United States came in the nineteenth century, in absolute terms (table B25), other regions of the world fared worse. Therefore, although the economic gap between Latin America and the United States widened in the 1800s, Latin American

Table B25
MADDISON SERIES: GDP-PPP OF SIX WORLD REGIONS AND UNITED STATES, 1820–1992
(M US 1990)[1]

Year	Western Europe[2]	Southern Europe[3]	Eastern Europe[4]	Asia[5]	Africa[6]	Latin America[7]	United States[8]
1820	132,689	26,813	62,984	368,750	19,192	11,264	12,432
1900	550,612	69,389	247,306	550,243	27,820	56,216	312,866
1938	1,040,726	115,588	586,493	959,048	73,845	193,991	800,295
1950	1,220,373	137,165	694,037	898,513	103,103	332,379	1,457,624
1992	5,234,878	1,005,450	1,897,938	9,125,053	504,367	1,952,206	5,510,378

1. Called "Geary-Khamis dollars;" see Maddison (1995:163).
2. Twelve countries: Austria, Belgium, Denmark, Finland, France, Germany. Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom.
3. Five countries: Greece, Ireland, Portugal, Spain, Turkey.
4. Seven countries: Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Soviet Union, Yugoslavia.
5. Eleven countries: Bangladesh, Burma, China, India, Indonesia, Japan, Pakistan, Philippines, South Korea, Taiwan, Thailand.
6. Ten countries: Côte d'Ivoire, Egypt, Ethiopia, Ghana, Kenya, Morocco, Nigeria, South Africa, Tanzania, Zaire.
7. Seven countries: Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela.
8. Maddison includes the United States in "Western Offshoots" along with Australia, Canada, and New Zealand. Western Offshoots as a category is omitted here in order to focus on the United States.

SOURCE: Maddison (1995:182–183, 211); U.S. data from table B23, above. Regions are discussed in Maddison (1995:62–63).

Table B26
MADDISON SERIES: GDP-PPP OF SIX WORLD REGIONS AS PERCENTAGE OF UNITED STATES GDP-PPP, 1820–1992

Year	Western Europe	Southern Europe	Eastern Europe	Asia	Africa	Latin America
1820	1,066.8	215.6	506.6	2,966.1	154.4	90.6
1900	175.9	22.2	79.0	175.8	8.9	17.9
1938	130.0	14.4	7.3	119.8	9.2	24.2
1950	83.7	9.4	47.6	61.6	7.1	22.8
1992	95.0	18.2	34.4	165.5	9.1	35.4

SOURCE: Calculated from table B25.

Table B27
MADDISON SERIES: GDP/C-PPP OF SIX WORLD REGIONS AND UNITED STATES, 1820–1992
(US)

Year	Western Europe	Southern Europe	Eastern Europe	Asia	Africa	Latin America	United States
1820	1,292	806	750	550	450	715	1,287
1900	3,092	1,575	1,263	681	500	1,134	4,096
1938	4,719	1,931	2,083	874	714	1,975	6,134
1950	5,123	2,025	2,604	727	792	2,614	9,573
1992	17,384	8,273	4,608	3,239	1,318	5,294	21,558

SOURCE: Maddison (1995:196–197, 212); U.S. GDP/C is from table B24.

Table B28

MADDISON SERIES: GDP/C-PPP OF SIX WORLD REGIONS AS PERCENTAGE OF UNITED STATES GDP/C-PPP, 1820–1992

Year	Western Europe	Southern Europe	Eastern Europe	Asia	Africa	Latin America
1820	100.3	62.6	58.2	42.7	34.9	55.6
1900	75.4	38.4	30.8	16.6	12.2	27.7[a]
1938	76.9	31.4	33.9	14.2	11.6	32.2
1950	53.5	21.1	27.2	7.5	8.2	27.3
1992	80.6	38.3	21.3	15.0	6.1	24.5

a. Thorp gives 12.5 percent for six countries (see table B35).

SOURCE: Calculated from table B27.

Table B29

MADDISON SERIES: ANNUALIZED GDP-PPP GROWTH RATES, WORLD REGIONS, 1820–1992 (Ranked in Order of Overall Growth)

Region	1820–1900	1900–92	1820–1992
United States[1]	4.1	3.2	3.6
Latin America	2.0	3.9	3.0
Western Europe	1.8	2.5	2.2
World Average	1.3	2.9	2.2
Southern Europe	1.2	3.0	2.1
Eastern Europe	1.7	2.2	2.0
Asia	.5	3.1	1.9
Africa	.5	3.2	1.9

1. Separated from Maddison's "Western Offshoots Region," which includes Australia, Canada, New Zealand (not included here).

SOURCE: Calculated from table B25.

Table B30

MADDISON SERIES: ANNUALIZED GDP/C-PPP GROWTH RATES, WORLD REGIONS, 1820–1992 (Ranked in Order of Overall Growth)

Region	1820–1900	1900–92	1820–1992
United States	1.5	1.8	1.7
Western Europe	1.1	1.9	1.5
Southern Europe	.8	1.8	1.4
Latin America	.6	1.7	1.2
Average[1]	.9	1.6	1.2
Eastern Europe	.6	1.4	1.1
Asia	.3	1.7	1.0
Africa	.1	1.1	.6

1. Population weighted.

SOURCE: Calculated from table B27.

economies actually performed better than those of other regions. Furthermore, Maddison's data on growth rates confirm that, compared with world regions, since 1900 Latin American economies have experienced the most growth.

The fact that Latin America narrowed the GDP-PPP gap in terms of both growth rate and in absolute terms is noteworthy for several reasons. First, Latin America gained on the United States during the 1900s, the period when the United States was emerging as the world's leading economic power. Second, Latin America fared better vis-à-vis the United States than Europe did even though Europe was the beneficiary of the Marshall Plan to rebuild the war-ravaged region. Third, given Latin America's second highest growth rate in the nineteenth century and highest since 1900 (table B29) among Maddison's seven regions, Latin America has moved up in rank (table B26) in terms of total GDP-PPP: while in 1820 the region was in last place in percentage terms, by the early 1990s it had risen to third place.

What do Maddison's data on GDP/C growth rates tell us? According to percentage change data (table B30), Latin America was hurt by its rapid population increase. Thus, we see a widening gap from 1820 to 1900 between Latin America and the United States. Table B30 also reveals that (1) during the nineteenth century all world regions except Western Europe experienced a widening GDP/C gap in relation to the United States and (2) the gap continued to widen after 1900 for all regions except Western Europe; but (3) owing to increases in GDP/C-PPP since 1900, in absolute terms (table B27), Latin America moved from fifth place in 1820 to fourth in 1992. The effect of population growth (table B30) thus reduces the impact of apparent gains in overall economic growth rates (table B29).

Counterfactual and Factual Issues in Analyzing GDP and GDP/C

Although most of the total GDP series examined (whether DER or PPP) show Latin America in relatively favorable terms, when the effect of population is taken into account in relation to GDP/C, Latin America is seen in a less positive, sometimes negative, light. This shift results from eightfold population growth since 1900, in absolute terms, in Latin America. U.S. population increase has been

less than half that. Whereas Latin America's annual average growth rate since 1900 has been about 2.2 percent, U.S. population growth has averaged only 1.3 percent.

Thus, since 1900 Latin America has had to absorb about 240 million more people than the United States has (table B31). Despite the added population, Latin America has still managed to increase GDP enough to make gains in per capita terms. Latin America's GDP/C-PPP growth rate since 1900 (1.7 percent) nearly matched that of the United States (1.8 percent) (table B30).

What if Latin America's population had grown at the same rate that the U.S. population did? Or vice versa? Although this is counterfactual, posing and trying to answer the question helps to understand the impact of population increase on GDP. Had the U.S. population increased at the Latin American rate, Latin America would have greatly narrowed the gap in GDP/C (table B32). In counterfactual terms, U.S. GDP/C-PPP in 1994 would have been $10,218 (in contrast to Maddison's calculation of $22,259). Had Latin America's population increased at the U.S. rate, Latin American GDP/C-PPP in 1994 would be $12,312 (in contrast to Maddison's calculation of $5,469). In both scenarios, Latin America's GDP/C-PPP would be higher.

Counterfactual analysis, then, suggests (if Maddison's data are correct) that were it not for the much greater population growth in Latin America compared to the United States, Latin America's GDP/C would be more than half that of the United States—not one-quarter. This analysis (table B32) shows that Latin America's population growth has "eaten" the region's economic output. Furthermore, political leaders who espouse population growth in order to achieve national and regional economic power doom the great majority of their populations to poverty.[24]

Table B31
POPULATION OF UNITED STATES AND LATIN AMERICA, 1900 AND 1998
(M)

Region	1900	1998
Latin America	59,570	491,809
United States	76,090	274,028

SOURCE: Calculated from SALA, 37–501 through 521.

Table B32
COUNTERFACTUAL AND FACTUAL SIZE OF GDP/C-PPP, 1994

PART A. U.S. PER CAPITA LEVEL USING LATIN AMERICA'S POPULATION GROWTH RATE

US of 1990		Latin American Percentage of U.S. Level	
Counterfactual[1]	"Factual"	Counterfactual	"Factual"
10,218	22,259	53.5	24.6

PART B. LATIN AMERICAN PER CAPITA LEVEL USING U.S. POPULATION GROWTH RATE

US of 1990		Latin American Percentage of U.S. Level	
Counterfactual[1]	"Factual"	Counterfactual	"Factual"
12,312	5,469	54.6	24.6

1. Calculation of the counterfactual data is problematic because, among other factors, the percentage of population actively contributing to GDP in the United States historically has been higher than that in Latin America. Latin America has traditionally experienced higher unemployment rates than the United States. Other activity, such as the informal economy and smuggling (excluded in this study), also affect the calculation of counterfactual data.

SOURCE: Calculated from tables B15 and B30 (Maddison's "factual" data on per capita absolute values and growth rates) and SALA population data in table B31, above.

The "Factual" Problem of Choosing the Appropriate Base Year for Deflating GDP Data to Constant Dollars

Of the seven series discussed here, six are presented in "constant" or "standard" U.S. dollars fixed on a base year. One series is given in U.S. dollars of 1960, three in dollars of 1970, one in dollars of 1980, and one in dollars of 1990. Only one series, W-R2, is presented in nondeflated, "current dollars."

Constant dollars are used by most analysts to remove the factor of inflation, thus theoretically facilitating long-term comparisons. The problem is that the output of all years must be repriced into that of the base year. Depending on which repricing or "deflator" data are used to "eliminate" inflation, different deflators give different results, one of which provides the basis of data for conversion into dollars, according to PPP or DER methods.

Choice of base year introduces the possibility of distortions. First, the choice of base year may lead to distortions depending upon how GDP components and key sources of income and expenditure (such as petroleum) are priced in that particular year. The cases of Colombia and Venezuela illustrate the "distortion" caused by choice of year upon which constant terms are measured in comparison to current or nondeflated terms. For example, in current

[24]High population growth yields surplus labor, which keeps wages depressed. One result is that countries focus on exports rather than on building domestic demand.

dollars, Colombia's GDP in 1996 was $89 billion and Venezuela's nearly $62 billion. (This greater importance of Colombia in current-dollar terms prevailed from 1994 through 1999.) Yet tracking the year 1996 by using five different base years to calculate constant dollars (table B33) shows that Colombia in 1996 can be either more economically important than Venezuela (two base years), less important than Venezuela (two base years), or about tied (one base year). Table B33, then, illustrates five sets of constant dollar results compared to current dollar results. Ratios between Colombia and Venezuela vary greatly.

The selection of base year for calculating constant dollars can create misimpressions (including differing growth rates and rankings) in and among countries. Change of base year can also change the value of currency rates, making them overvalued or undervalued, which results in differing absolute values and pricing of components in GDP. For many countries, the given exchange rate for the dollar is usually overvalued or undervalued owing to flawed government policy and poorly understood market realities. Some officials promote the use of an overvalued exchange rate claiming it may help show impressive GDP performance. When "caught," they refuse to acknowledge their strategy because disclosing such a maneuver can cause disruptive surges of capital out of (or into) a country.

Although in theory analysts prefer not to use current dollars but rather to convert currency into constant dollars (thus removing inflation even though it may misstate the amount of change in both domestic and comparative international terms), in practice the choice of base year can introduce distortions that can be avoided by maintaining dollars in current terms, at least for comparing ratios between countries in the same year. Another advantage of current dollar data is that such data tend to capture the inflation in local economies, an important factor in assessing the economic situation of the population. The poor are often the most affected by the "invisible tax" of inflation. To understand the economic well-being of a population in a given year, current dollars are necessary for comparison because people must buy their necessities in currency of that year, not an indexed year. Therefore, although the W-R2 series in current dollars does not show true percentage change over time, it does show the relationship among countries without introducing the potential problems resulting from choosing an unrepresentative base year or an atypical currency exchange rate.

Table B33
GDP, IN CURRENT AND CONSTANT DOLLARS, 1996
(B US)

PART A. CURRENT DOLLARS

Country	GDP-DER
Colombia	89
Venezuela	62

PART B. CONSTANT DOLLARS WITH CHANGING BASE YEARS

	Base Year for Calculating GDP-DER				
Country	1995	1994	1993	1990	1980
Colombia	76	75	54	45	56
Venezuela	47	53	52	53	76

SOURCE: Calculated from IMF-IFS-Y, 1999.

Interpreting the Series

The in-depth analysis here of long-term series illustrates the numerous contradictions and problems involved in measuring the GDP "gap" between Latin America and the United States.

With regard to methodology, it is not possible to measure with precision historical change in GDP and GDP/C; we can only document long-term tendencies by decade. The seven different approaches to measuring change discussed here help to determine the dimensions of historical change for Latin America and to understand the region's place in the world. The United States is considered here as the most important "region" and the one that other regions and countries compare themselves with. Other analysts, such Thorp and Maddison, also use the United States as the standard for comparison.

Our test of the theory of the widening gap shows that although the gap has widened in absolute terms, this has not generally been the case in terms of Latin America's GDP and GDP/C as a percentage of U.S. total and per capita GDP. In both absolute and percentage terms, the gap narrowed, widened, and narrowed again. Were it not for the surge in population in Latin America, the region's GDP/C would be double the current figure in each series. The same would be true if the United States had experienced the same growth rate as Latin America has, rather than its much lower rate.

Figures B2 and B3 summarize Latin America's GDP and GDP/C as a percentage of the U.S. total according to the seven series analyzed here. In contrast to the Jolly projections in absolute terms

Figure B2
LATIN AMERICA GDP AS PERCENTAGE OF U.S. GDP ACCORDING TO SIX ANALYTICAL SERIES, 1938–2000

SOURCE: Table B21, above

(Figure B1), Figure B3 (in percentage terms) shows that Jolly's projection for 2000 matches almost exactly the percentage derived by Maddison for 1994. The difference is .5 percent!

In light of population pressures faced by Latin America, the region's economies have made remarkable strides. Relative to the United States, Latin America GDP has improved its position (table B21) and GDP/C has more or less kept pace over the long term (table B22). The idea of a widening economic gap between Latin America and the United States is closer to myth than to reality.

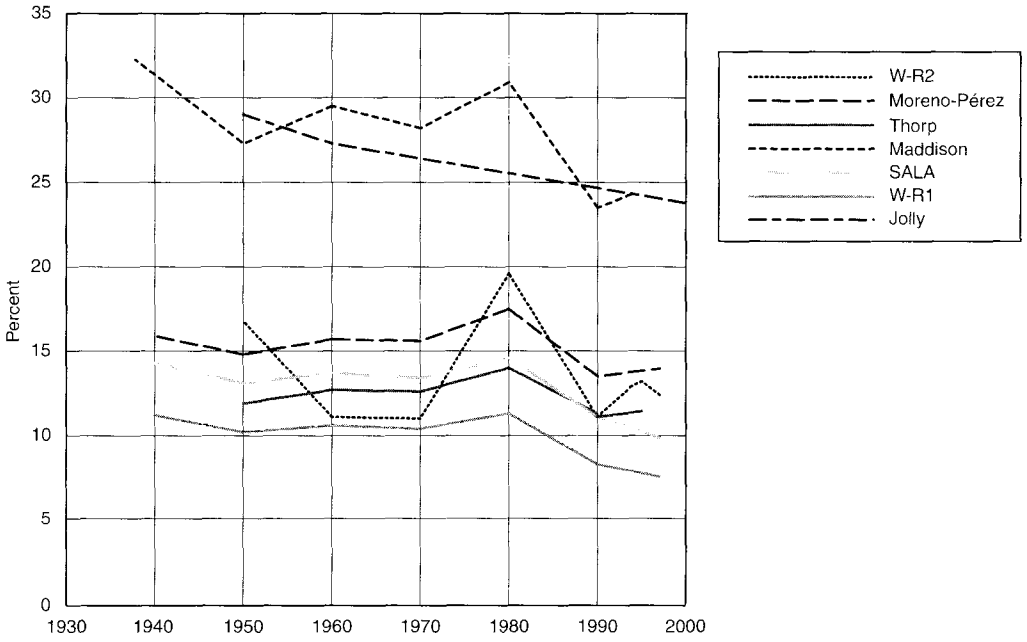
Analysis of the "gap" has come full circle, back to the original reason for which the Pearson Commission was convened in 1964—concern that foreign aid and capital for the developing world were drying up. The United Nations announced on December 15, 2000, that former Mexican president Ernesto Zedillo would chair a blue-ribbon commission established to recommend new ways to finance development in poor countries amid recent decreases in aid from the world's donor nations.[25]

Thus the U.N. announced that:

> Ernesto Zedillo is to head the panel, whose members will also include former U.S. Treasury Secretary Robert Rubin, former French Finance Minister and President of the European Commission Jacques Delors and others.
>
> The panel is expected to present recommendations by May [2001] on initiatives that governments, businesses and international institutions can take in trade, aid, debt relief and investment.
>
> Official government assistance, once the bulk of all development aid, has fallen dramatically over the past decade. It currently makes up

[25]["Zedillo Named Chair of U.N. Commission to Examine Decline in International Aid to Developing Countries"], *Mexico City News*, September 9, 2000; and *Wall Street Journal*, December 15, 2000. http://interactive.wsj.com/archive.

Figure B3
LATIN AMERICA GDP/C AS PERCENTAGE OF U.S. GDP/C
ACCORDING TO SEVEN ANALYTICAL SERIES, 1938–2000



SOURCE: Table B22, above

only 18% of financial flows to developing economies.

In 1990, the figure was 56%, U.N. statistics show.

The decrease has come despite unprecedented growth in trade and investment. Much of that growth, however, has been concentrated in the industrialized world, while the developing world still languishes in poverty compounded by debt and trade barriers.

The U.N. estimates that the cost to poor countries of high trade tariffs—in the neighborhood of $100 billion to $150 billion—exceeds the aid they receive.

The panel's recommendations are to be forwarded to a special U.N. meeting on financing for development in early 2002 to be attended by governments, the International Monetary Fund, the World Bank and the World Trade Organization.

The other panel members include: Abdulatif Al-Hammad of Kuwait, president of the Arab Fund for Economic Development; David Bryer of Britain, director of OXFAM; Mary Chinery-Hess of Ghana, former deputy director-general of the International Labor Organization; Rebeca Grynspan, former vice president of Costa Rica; Majid Osman, former finance minister of Mozambique; Manmohan Singh, former Indian finance minister.[26]

Olga M. Lazin (2001:250–252) takes the position that the U.N. Commission on Financing the Globalization of Underdeveloped Countries should be made a Permanent Commission, suggesting that it is unlikely that the Zedillo Commission will be able to fully identify the problems and complete its assignment by May 2001. In addition, it is important to note that the U.N. commission is operating under the same premise as the 1969 Pearson Commission—that the gap between rich and poor is widening. Perhaps the "new" commission will take a more sophisticated view.

In its report, the Pearson Commission did not emphasize population growth and its role in the erosion of GDP/C. The Pearson Report simply says:

> Some of the direct difficulties created by rapid population growth are the following:

[26] *Wall Street Journal,* December 15, 2000. http://interactive.wsj.com/archive. In Mexico, critics of Zedillo objected to his appointment because, in their view, his presidential administration drastically short-changed social welfare programs.

> – Expenditures for education, health, housing, water supply, and so forth increase sharply and create severe budget strains. . . .
> – Considerable resources are devoted to the support of a large dependent population which would otherwise be available to raise living standards and increase capital formulation. . . .
> – [Foreign] Aid requirements are larger.
> It is clear that there can be no serious social and economic planning unless the ominous implications of uncontrolled population growth are understood and acted upon. (Pearson 1969:57–58)

It is unfortunate that the administration of President George W. Bush does not understand that the great threat to GDP/C growth is rapid (and often unwanted) population increase. Ironically, the Pearson Report noted in 1969 that "Numerous field surveys of parents in developing countries indicate that birth rates would be reduced to one-third if parents had the knowledge and means to plan the size of their families" (Pearson 1969:57).

In addition to the issue of population, there is the difficulty inherent in measuring economic growth. We suggest that although PPP is used by analysts who attempt to create "international dollars," the result seems to be the inverse—they create "domestic dollars." Although theoretically PPP accounts for the fact that necessary items of consumption and most services have a dollar cost that varies greatly from official exchange rates to distort traditional GDP comparisons between developing and developed countries, in our view the PPP approach yields an exaggerated value of national currency for purchases both *within* countries as well as for trade *among* countries. Further, we suggest that PPP values are contradicted by our experiences of extensive travel upon which we have developed our own professional intuition about the "wealth" of developing nations.

Ironically, there is little in the "classic" literature about the statistics of economic growth. Some otherwise excellent sources do not take into account the factors and issues discussed here in measuring GDP (see, for example, Landes 1999 and Kennedy 1987). For the typical study that is generally weak on international economic comparisons, see Bairoch (1975).

The title of Haber's 1997 edited work, *How Latin America Fell Behind,* is misleading. In the introduction (p. 1), Haber points to only "one estimate" that shows that Latin America failed to keep up with the United States in the eighteenth and nineteenth centuries. However, because Haber does not include Maddison's data (1995), which we present here (tables B27, B28, and B36), he does not discuss the fact that although Latin America "fell behind," so did all other regions of the world. Thus, Haber's inquiry appears to be not so much "how Latin America fell behind" but rather "how unique internal factors permitted the United States to leap ahead of the rest of the world." The work should have been titled "How the United States Jumped Ahead in GDP and Has Stayed Ahead of Other Nations." Haber and his contributors should now do a sequel about "How Latin America Has Been Able to Maintain Its GDP Position vis-à-vis the United States since 1900." (See especially table B36, herein).

Except for the Engerman-Sokoloff long-term series for a few countries (Engerman and Sokoloff 1997:270), there are no additional long-term data nor serious analysis in the Haber volume of GDP or GDP/C to justify the conceptual framework of the collected essays. The Engerman-Sokoloff data, which relied on outdated sources at the time they were published, are shown in table B35. These absolute data suggest (when we calculate the percentages) that in 1700 Mexico's GDP/C was 91.8 percent of the U.S. figure. By 1850 the percentage had fallen to 22.7 percent and remained at that level in 1913. For Brazil, our calculations based on the Engerman-Sokoloff data indicate that Brazil's GDP/C was 91.4 percent of U.S. GDP/C in 1800, fell to 64.6 percent by 1850, and to 14.4 percent by 1913. When compared with Coatsworth's data (Coatsworth 1998), Maddison's long-term data for the pre-1900 period (Maddison 1995), and Thorp's data for the post-1900 period, the Engerman-Sokoloff data appear credible for only a few recent years.

With respect to Mexico and Brazil, table B35 reveals a great deal about the contradictory state of our knowledge about the GDP of these two countries. All series for the pre-1900 period show that Mexico and Brazil each had very high GDP compared with the United States, except for the Hofman-Mulder/Coatsworth series, which seems to be the most reasonable, albeit for reasons based upon our professional intuition.

By 1900 the Thorp series appears to be the most reasonable one for both Mexico and Brazil. The first year for which we have data in all series in

table B35 is 1913 (if one considers Thorp's data for 1910 "close" in time to 1913). Where her percentages for about 1913 are 4.8 for Brazil and 18.4 for Mexico, the percentages in the other series range from 11.0 to 15.8 for Brazil and from 22.7 to 35.0 for Mexico.

Given these disparities, let us examine the existing long-term series back to 1820 for "all" of Latin America—all being represented by 6, 7, or 44 countries, depending on the source (table B36). Although the consensus appears to be 3 to 1 against Thorp, this does not seem to make sense, mainly because the three sources repeat each other. Only Thorp appears to have developed a new series, and indeed it corroborates our professional intuition. But the meaning of GDP and GDP/C data remains unclear.

The Poverty of Latin American Economic History

Analysis of the economic history of Latin America is particularly problematic because studies in Latin American history suffer from two competing shortcomings. First, most historians include little or no quantitative data about the performance of Latin America and simply assume a widening GDP and GDP/C gap between Latin America and the "developed world." Second, the few writers who recognize this deficiency and attempt to develop quantitative data select only one series and examine that series in isolation without comparing it to competing series to show how alternate data can cloud the meaning (see, for example, tables B34, B35, and B36).

In addition to the problems with many historical studies of Latin America, most writings on the economies of Latin America (with or without data, internal or external to the region) have sought to arrive at a summary judgment about Latin America's condition. Because such work has often relied on incomplete or one-sided data, in many cases the result is more opinion than sound conclusion supported by adequate data. Such opinions have led, sadly, to a variety of "global judgments" depicting Latin America as: a land of wealth; a backward region; a region where the poor are exploited by national elites and/or national elites serve as "lackeys for foreign investment"; a region plagued by dependency on developed countries; a region that needs to become self-sufficient and nationalize its industries; a region that needs to liberalize and privatize its businesses; a region where political, institutional, and geographical barriers are the major obstacles to progress.

Such judgments are, in economic terms, "normative statements," that is, opinions about how Latin America ought to be, based on an implicit comparison with some standard. Yet, what epitomizes the poverty of Latin American economic history is the failure of most writers to show in "positive economic" terms where Latin America stands. It is impossible to make a qualified normative statement about how Latin America ought to be without first thoroughly examining where it stands in realistic terms—as well as in positive terms where appropriate. In addition, if a normative statement is to be made, the implicit comparison must also be shown in positive terms. For example, it is not enough to say that Latin America has underperformed because of institutional obstacles. One must first be explicit, quantitatively, about what Latin America's performance has been and explain the standard used to judge performance. Lacking a solid understanding of the positive economic situation of Latin America, most Latin American economic historians have emulated seedy physicians who bypass a physical exam and take the patient straight to surgery.

To be fair, Latin American economic history has improved greatly over the past few decades. It has progressed from being dominated by wholly relativist projections to at least some attempts to include and analyze quantitative data.[27] During the 1990s several serious works analyzed GDP data as well as other economic factors. Among these, the best are by Maddison and Thorp, which, as the comparison presented here shows, display very different historical trajectories. Of all the authors who have studied GDP and GDP/C, it appears that we should deflate Maddison's data by about half (or simply use the Thorp series). Although Maddison's methodology overstates the summary situation of Latin America and of most countries of the world, its importance cannot be minimized. Maddison's is the most complete series and the one that includes GDP and GDP/C data for other parts of the world. Maddison's worldwide comparisons suggest that it is

[27] Among the problems that have characterized the work of the past few decades is the use of partial data to extrapolate entire trends. The *dependista* school, for example, based its entire theory on examining terms of trade over a limited time period. Even more recent work in Latin American economic history suffers from this practice of developing theories based on partial or fragmentary data (or in some cases no data at all).

Table B34

COMPARISON OF PERCENTAGE INCREASE IN GDP/C GAP FOR SIX SERIES AND THE JOLLY PROJECTION

Series	Type	Percentage Increase[1]	Period	Base Year	Text Table
Jolly	PPP	564.3	1950–2000	1960	B1
W-R1	GDP-DER	188.1	1940–98	1970	B4
SALA	GDP/PPP	190.4	1940–98	1970	B9
Thorp	PPP	136.0	1950–95	1970	B11
Maddison	PPP	145.5	1950–94	1990	B15
W-R2	Current	1,685.0[a]	1950–98	None	B19
Moreno-Pérez	PPP	142.9	1940–98	1980	Appendix D

1. Percentage increase calculated from absolute difference between U.S. and Latin American absolute data.

a. The W-R2 series is neither comparable nor usable in this format because the absolute data are in current (nondeflated) terms; this series is valid only to calculate the gap for specific years in absolute and percentage GDP/C and GDP in terms that examine Latin America in relation to the United States. It is presented here only to show what happens to data if they are not deflated for analysis of absolute data over time.

Table B35

BRAZIL AND MEXICO GDP/C-PPP AS PERCENTAGE OF U.S. GDP/C-PPP, ACCORDING TO MADDISON, THORP, ENGERMAN-SOKOLOFF (E-S), AND HOFMAN-MULDER/COATSWORTH (H-M/C), 1700–1995

	Brazil				Mexico			
Year	Maddison	Thorp[1]	E-S[2]	H-M/C[3]	Maddison	Thorp[1]	E-S[2]	H-M/C[3]
1700	~	~	~	~	~	~	91.8	89.0
1800	~	~	91.4	36.0	~	~	55.8	50.0
1820	52.1	~	~	~	59.1	~	~	~
1850	39.1	~	64.6	39.0	36.7	~	22.7	37.0
1870	29.1	~	~	~	28.9	~	~	~
1890	22.7	~	~	~	29.2	~	~	~
1900	17.2	4.9	~	10.0	28.2	17.7	~	35.0
1910	16.0	4.8	~	~	28.9	18.4	~	~
1913	15.8	~	14.4	11.0	27.6	~	22.7	35.0
1920	16.9	5.1	~	~	~	18.2	~	~
1921	17.6	~	~	~	29.2	~	~	~
1929	16.0	~	~	12.0	21.6	~	~	27.0
1930	17.1	5.9	~	~	22.4	14.6	~	~
1931	17.8	~	~	~	24.4	~	~	~
1932	21.0	~	~	~	23.4	~	~	~
1933	23.1	~	~	~	26.6	~	~	~
1934	22.6	~	~	~	26.0	~	~	~
1936	20.1	~	~	~	21.9	~	~	~
1938	21.0	~	~	~	22.5	~	~	~
1940	18.6	6.4	~	~	22.2	14.4	~	~
1950	17.5	6.5	~	15.0	21.8	13.9	~	27.0
1960	20.9	8.4	~	~	24.8	15.9	~	~
1970	20.6	8.7	~	~	25.4	17.1	~	~
1973	~	~	~	22.0	~	~	~	35.0
1980	28.7	12.3	~	29.0	28.82	18.5	~	42.0
1989	23.6	~	23.2	24.0	22.5	~	19.2	33.0
1990	22.0	10.7	~	~	22.9	15.0	~	~
1994	21.5	~	~	22.0	22.6	~	~	33.0[a]
1995	~	10.4	~	~	~	14.1	~	~

1. Three-year averages, except Mexico 1909–10 and 1921–22.
2. Engerman and Sokoloff (base year = 1985) imply that at least some of their data are in PPP because one of their principal sources is Maddison (1991).
3. Composite series based on data in Hofman and Mulder (1998) and Coatsworth (1998), with the exception noted in note a, below.

a. Coatsworth's data agree with the Hofman-Mulder data except for 1994: Coatsworth's figure for 1994 is 23.0 and Hofman-Mulder give 33.0.

SOURCE: Maddison (1995:196–197, 202–203); Thorp (1998:353); Engerman and Sokoloff (1997:270); Hofman and Mulder (1998:88); Coatsworth (1998:26).

Table B36

OTHER VIEWS OF LATIN AMERICA GDP/C-PPP AS PERCENTAGE OF U.S GDP/C-PPP: MADDISON, THORP, AND HOFMAN-MULDER, 1820–1995[a]

Year	Maddison 7 Countries[1]	Maddison 44 Countries[2]	Thorp 6 Countries[1,3]	Hofman-Mulder 6 Countries[1]
1820	55.6	52.8	~	~
1870	32.6	41.9	~	~
1900	27.7	26.3	12.5	27.0
1910	~	~	13.3	~
1913	28.5	27.1	~	28.0
1920	~	~	12.4	~
1929	27.9	26.5	~	28.0
1930	~	~	12.9	~
1932	32.4	~	~	~
1938	32.2	~	~	~
1940	~	~	12.9	~
1950	27.3	26.1	12.5	29.0
1960	29.5	27.5	13.6	~
1970	28.2	26.1	13.7	~
1980	30.9	28.3	15.4	~
1990	23.5	21.7	12.7	~
1992	24.6	22.3	~	~
1994	24.3	21.4	~	27.0
1995	~	~	12.8	~

1. The Maddison-7, Thorp, and Hofman-Mulder series include the same six countries (Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela), except that Maddison also includes Peru and Thorp does not. Base years: Maddison = 1990; Thorp = 1970; Hofman-Mulder = 1980.
2. Data extrapolated by Maddison backward from 1950. In addition to the 7 Latin American countries (table B13, above), the 44 countries also include 13 Latin American countries (Bolivia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Paraguay, Uruguay) and 24 non–Latin American countries (Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Puerto Rico, St. Lucia, St. Vincent, Suriname, Trinidad and Tobago, Antigua and Barbuda, Bermuda, Guadeloupe, French Guiana, Martinique, Netherlands Antilles, St. Kitts–Nevis, Aruba, Falkland Islands, St. Pierre and Miquelon, Turks and Caicos). Many of these are not independent countries, such as Puerto Rico (part of the United States) and Martinique (a province of France).
3. Thorp sees these 6 countries as representing about 75 percent of Latin America's regional GDP.

a. Coatsworth (1998:26) calculates the total as the "arithmetic mean" for 7 countries since 1900, but the total is not weighted for population, making it useless. (Coatsworth suggests as much when he notes that the total in 1800 for the 6 countries is 66 but when weighted for population the figure is 51.)

SOURCE: Data in table B22, above; and our calculations from Maddison (1995:196, 212, 215, 228) and Thorp (1998:353), except that data for Maddison-44 are either extrapolated by Maddison (1820-1929) or are from OECD Development Centre Data Bank (since 1950). The Hofman-Mulder data are from Hofman and Mulder (1998:88).

time to stop investigating Latin American history in a vacuum.

While there are signs that scholars are approaching the study of Latin America in relation to the United States (Thorp, Maddison, Coatsworth, for example, along with the present work), it is clearly time to develop worldwide comparisons (as in tables B23–B30) and to pursue counterfactual analysis (as in tables B32 and B33).

Although Coatsworth (1998) claims to study "Latin America and the World Economy Since 1800," this edited volume does not move much beyond Latin America, except for a few references to the "Asian" countries, Australia, Canada, and the United Kingdom. Other than references to Portugal and Spain there are few world comparisons, except for passing references to China, Germany, South Africa, and Turkey. Although the contributors convened in Bellagio and Madrid, that fact, mentioned several times, does not by itself give the book the world focus suggested by the title. Beyond the region of Latin America and the Asian tigers, the concept of regions is not mentioned. Nor do any of the essays in the Coatsworth volume discuss the analysis and data presented in recent studies.[28]

While there are signs of progress toward expanding data coverage (Maddison, Thorp, and Coatsworth, for example),[29] in-depth comparative research on GDP and GDP/C remains problematic, primarily because, as these recent works show, the available statistics are imprecise for many reasons—methods of data collection, indexing, choice of exchange rates, and so on.

Our purpose here has been to advance the idea of examining Latin America's GDP and GDP/C in proportion to the United States. This approach establishes a meaningful and constantly changing standard to which all countries compare themselves—perhaps even Cuba, if only implicitly.

Ideally, comparative data should be used as supporting evidence. It is our hope that this work will make a qualitative contribution in this direction. Toward this end, we have provided an extensive set of GDP data for analysis, alternate data sources that employ different methodologies, and a comparison of these data through proportional analysis.

Conclusion

Because we have analyzed seven complete GDP/C series, including extensive examination of Maddison's data (tables B13 through B16 and B23 through B32) as well as data for some countries provided by Engerman and Sokoloff and Coatsworth, we can now return to the Jolly GDP/C series presented at the outset (table B1). In analyzing Jolly's projection of a growing per capita gap from 1950 to 2000, we calculated his implied percentage increase—564.3 percent (see note 11). Table B34

[28]Coatsworth (1998) does not cite Maddison (1995) or Thorp (1998).

[29]Thorp (1998) and Coatsworth (1998) contain a wealth of economic data on many sub-themes within the GDP concept, such as productivity, stock prices, and income distribution, but it is Maddison and Thorp who delve deeply into the summary or GDP data.

compares Jolly's percentage increase in GDP/C with the increases shown in the six other GDP/C series.

Clearly, Jolly's projection is completely out of line with the other six estimates (table B34). The smallest increase in gap (136.0 percent) is Thorp's, which is close to that calculated by Moreno-Pérez (142.9) and Maddison (145.5). The W-R1 increase in the gap is 188.1 percent. The W-R2 increase (1,685.0 percent) is not presented for discussion but simply to show why it is not comparable (table B34).

Ironically, however, Jolly's figure for GDP/C as a percentage of U.S. GDP/C (table B22) differs from Maddison's by only .5 percent—Maddison showing 24.3 percent and Jolly showing 23.8. Jolly's estimate, which Pearson used to show Latin America in a "bad light," turns out to have shown the region in a "good light."

We conclude, therefore, that there is no single measure of GDP that serves all purposes. Although we believe, for example, that the W-R2 series clearly cannot be used to analyze the percentage increase in economic gap (table B34), it is perhaps the best series for understanding Latin American GDP and GDP/C as a percentage of the United States totals because the data fall between the high and low extremes (see tables B21 and B22). In addition, the W-R2 series can easily be carried forward into the twenty-first century, thus providing consistent data since 1950. Because the only long-term data since 1820 are Maddison's, however, that series has to be the most useful for studying the period from 1820 through 1994 (or 1992, depending on the type of calculations Maddison makes). We eagerly await an update of the Maddison series.

We prefer the GDP-DER method in the W-R2 series (which has no base year) to measure the economic gap for specific years because it is important to understand for specific times the comparable size of economies and their power to purchase in the world market the goods and services of other countries. In our view, domestic investors and consumers take into account the exchange rate in the year they live, as do foreign investors and politicians who are susceptible to the impact of internal political decisions and world economic factors that encourage inflow or outflow of capital. DER in current terms allows us to understand the dollar value of a country's GDP at specific moments in time (but not over time) which is subject not only to flows of funds worldwide as investors seek advantage but also to the revaluation of the exchange rate by a country's authorities, thus subjecting currency to sudden changes. Neither politicians nor investors, let alone consumers, think in terms of standard dollars (for example, 1970 or 1990). The idea of three-year averages (used by Thorp) is convenient only for academics, not people in real life.

In this age of globalization, it is a mistake to focus exclusively on PPP data because, in our view, such analysis looks inward, away from the world, rather than outward, toward the world, in order to understand what each country can buy in the international markets. PPP data do not necessarily help analysts carry out a meaningful test of the nature of the economic gap between Latin America and the United States as well as other regions.

Finally, our proportional approach to the analysis of quantitative data offers a coherent method for measuring the so-called GDP gap between the United States and Latin America. We have shown that the GDP gap has not always followed a continuously widening path, as many analysts have believed, and, in per capita terms, when the GDP/C gap widens, this has been attributable to high population growth. If population growth in Latin America had resembled the U.S. pattern of relatively slow growth, Latin America would have fared very well, as we have discussed in counterfactual terms. According to our proportional analysis, the gap widened during the nineteenth century, stabilized by the beginning of the twentieth century, and over the course of the century it narrowed, widened, and narrowed again.

Appendix A
METHODOLOGY AND SOURCES

Methodological Problems in Interpreting Quantitative Economic Comparisons

Data on Gross Domestic Product

The focus of our economic comparisons is on gross domestic product—the value of all goods and services produced within a country regardless of ownership. Despite considerable faith in the ability of GDP to reveal accurately conditions in Latin America, GDP data merely approximate economic activity. The fact that estimates of a country's GDP can vary widely from one source to another (both locally and outside the country) is evidence of the imperfect art of estimating and measuring economic activity. Therefore, although we use GDP data in discussing Latin America, it is not the intent of this study to provide a definitive portrayal of economic "reality." The use and discussion of GDP data can only hope to partially reflect the economic reality.

There are a number of difficulties in measuring GDP. One involves the variation of data collection methods from country to country. Another involves the reliability of data for early years in long-term data even if chain-linked. Yet a third type of problem arises when statistical agencies seek to portray their country in a positive light by manipulating data on GDP growth rates, thus distorting the representation of countries that report their data as honestly as possible. Furthermore, even when countries seek to earnestly gather their data, miscalculations and varying estimates can emanate from different sectors within the government, with errors magnified as the data pass through multiple levels of the bureaucracy.

Another related concern is the often-ignored issue of what to count in measuring GDP. In addition to the formal economy, some countries attempt to incorporate the informal economy and even the black market, while others do not, thus including or omitting a substantial amount of economic activity. For example, during the 1990s Colombia attempted to include the informal economy in its GDP estimates. Such discrepancies can produce invalid comparisons between countries. Another variation is that some countries use market prices, which include taxes and subsidies, to present their GDP, while others use factor prices, which exclude taxes and therefore give a lower figure. These are only a few of the difficulties in measuring GDP and analyzing the data, yet they raise some important issues to consider when making cross-country comparisons.

The series presented here exclude both the informal and illegal economy, except to the extent that money-laundering investments formalize its role.

Converting National Currencies to a Common Standard

In order to make international comparisons, GDP must be converted into a common currency, generally the dollar (which we use here). A country's GDP converted for any given year yields "current dollars." Once the data are converted to the dollar, worldwide country GDP data can be compared. We discuss two types of common currency here, each with variations: "current dollars" and "base-year dollars."

CURRENT DOLLARS

The process of conversion to dollars creates distortions. The question is what exchange rate to use: the official rate, a floating rate, the year-end rate, an average exchange rate for the entire year, or the rate at which most of each country's major exports are sold? The choice of exchange rate can even be more problematic when a country's currency is artificially set by its central bank, the peg often being fixed at an overvalued rate to increase the size of GDP. (Countries that allow their currency to float, with the value set by the market, are often penalized when their GDP is compared with that of countries that set an artificial rate.) The alternative is to attempt to use an adjusted exchange rate, black market rates, for example, yet the difficulty of gathering sufficient data (especially for past years) and the precision of such data make such a "solution" problematic.

Even when a market rate is used, the conversion to dollars can always create distortions because the market rate may not capture the true value of a local currency. For example, an exchange rate in theory should take into account the inflation inherent in the local currency, yet it can easily underestimate inflation or can even over-account for expected

inflation, hence causing an over- or undervaluation of GDP.

In spite of such caveats, and for reasons discussed in the text, we believe that the current dollar DER method presented in the W-R2 series is the most helpful approach to comparing and ranking economies for comparisons in a single year (tables B17 and B19) and for measuring the economic gap in percentage terms over time (tables B21 and B22). It is not suitable for examining absolute data over time.

BASE-YEAR DOLLAR RATES

There are two kinds of base-year dollar rates—DER and PPP. Instead of the "current dollar" DER approach, discussed above, during recent decades most analysts have used PPP rates of exchange in an attempt to create a more meaningful comparison between developing and developed countries. Purchasing power parity attempts to account for the fact that in many developing countries the dollar price of basic consumer products and services is lower and more difficult to measure than in developed countries. Hence PPP creates a basket of items and adjusts country exchange rates for those items to equate them to developed-country prices.

With regard to comparing the DER and PPP approaches, see table B6, which shows that in 1996 Japan's GDP/C in DER terms was higher than the U.S. GDP, but lower when calculated in PPP terms.

Specific Methods and Sources

Sources for W-R1 Series, 1940–98

The W-R1 series is calculated as described below.

Latin American Data.—The series links ECLA data for Latin America given since 1940 in SALA, 26–3301 through 3321 to data in SALA, 32–3401 through 3421, updated with the CEPAL (ECLA) *Economic Survey of Latin America.* Data from SALA, vol. 26, were used through 1985. Growth rates from SALA, vol. 32, were used to project the data through 1993. The CEPAL growth rates were then used to project the data from 1993 to 1998. All of the SALA data used factor cost GDP at 1970 prices, while the CEPAL data used 1995 dollars, non-factor cost. Although this is a break in consistency, a comparison of CEPAL growth rates and the factor cost growth rates in SALA, vol. 32, to 1993 shows them to be nearly identical.

Nine Countries Lacking 1940 Statistics.—To develop estimates for four countries (Bolivia, the Dominican Republic, Haiti, and Panama) for 1940, we used 1945 ECLA data and the average rate of growth for the rest of Latin America (sixteen of twenty countries) to project back to 1940.

Data for four countries (El Salvador, Costa Rica, Guatemala, and Nicaragua) are from Bulmer-Thomas (see Thorp, pp. 320–321), whose methodology is similar to ours. Data for Peru are from Hofman (1997), a study that Thorp commissioned for her book.

Cuba Data, Lacking Reliable GDP Statistics.—All of the Cuban data are also from Thorp (pp. 320 and 353). Data are in 1965 prices.

United States Data.—The basic U.S. series is taken from IMF-IFS-Y. Because the IMF data go back only to 1948, for 1940 we used data in Maddison after using the IMF's deflator for 1970 to convert it DER dollars.

DER Conversions.—All data have been converted to IMF official rates from IMF-IFS-Y. We have converted all data not given in dollars of 1970 to dollars of that year by using the IMF deflator for 1970. For comparison of DER and PPP exchange rates, see Table A:1, below.

Table A:1

EXCHANGE RATES OF 1970 USED IN THORP AND W-R1 SERIES TO CALCULATE GDP AND GDP/C AT PURCHASING POWER PARITY (PPP) AND DOLLAR EXCHANGE RATE (DER)
(Local Currency per U.S. Dollar, 1970)

	Country	PPP[1]	Year-End Official[2]	Yearly Average Official[3]
A.	ARGENTINA	3.0	4.0	3.8
B.	BOLIVIA	9.0	11.9	11.9
C.	BRAZIL	4.1	5.0	5.0
D.	CHILE	10.9[e]	12.2	12.2
E.	COLOMBIA	10.7	19.1	18.4
F.	COSTA RICA	5.1	6.6	6.6
G.	CUBA	**	1.0[a]	1.0[a]
H.	DOMINICAN REP.	.9	1.0	1.0
I.	ECUADOR	14.0	25.0	20.9
J.	EL SALVADOR	1.7	2.5	2.5
K.	GUATEMALA	.9[b]	1.0	1.0
L.	HAITI	4.0	5.0	5.0
M.	HONDURAS	1.8[c]	2.0	2.0
N.	MEXICO	8.9	12.5	12.5
O.	NICARAGUA	6.4	7.0	7.0
P.	PANAMA	.8	1.0	1.0
Q.	PARAGUAY	85.4	126.0	126.0
R.	PERU	30.7	39.0	38.7
S.	URUGUAY	200.0[d]	250.0	248.0
T.	VENEZUELA	4.0	4.5	4.5

1. PPP rates are from SALA, 26–3324.
2. Year-end rate (based on Wilkie 1974:239–240) is used by Thorp, p. 317.
3. Yearly average rate used in W-R1 series is from IMF-IFS-Y, 1999, using "rf" (period average) rates.

a. Thorp, p. 317.
b. Thorp uses .9 for PPP.
c. Thorp uses 1.7 for PPP.
d. Thorp uses 198.7 for PPP.
e. From Thorp, p. 317. SALA gives .01 old pesos.

SOURCE: PPP rates are from SALA, 26–3324. Official rates are from IMF-IFS-Y, 1999, using "rf" (period average) rates.

Appendix B
POPULATION DATA

Various sources of population data are used to calculate GDP/C in the six long-term series discussed here:

a. The W-R1 and W-R2 series use population data from table B:1, below.
b. The SALA series through 1980 is based on the ECLA series (constructed from data provided by national statistical agencies) in SALA, 26–3324; subsequent data are calculated by SALA with ECLA percentage change rates in SALA, 32–3401 and ECLAC-SY. We add Cuba to the SALA series using Thorp's per capita data for Cuba, which are converted here to total data (GDP/C *x* population = GDP); and we add Cuba to the SALA Latin American totals. U.S. data for 1940 and 1950 are derived from Wilkie (1974:ch. 8); the data for 1960 and 1970 are derived from IMF-IFS-Y, 1980; data for 1980, 1990, and 1998 are from UN-DY, 1992–97.
c. The Thorp population series is from Mitchell (1993).
d. The Maddison per capita data (1995) are based on his population series, which he includes in full (pp. 112–113) from various sources (listed on p. 99), including the *Cambridge History of Latin America* (1985–1986).
e. The Jolly series is based on data in ECLA (E/CN.12/825), March 12, 1969, and growth rates in Pearson (1969:358). Projections for 2000 are a continuation of 1960–67 per capita growth rates based on population estimates in Pearson (p. 56). The low estimate of Latin American (including the English-speaking Caribbean) population for 2000 was 650 million; the high was 700 million, which greatly exceeds the twenty-country Latin American data in table B:1, below.

Table B:1
POPULATION SERIES, 20 L AND UNITED STATES, USED TO CALCULATE GDP/C IN W-R1 AND W-R2 SERIES, 1940–98
(T)

	Country	1940	1950	1960	1970	1980	1990	1998
A.	ARGENTINA	14,170	17,070	19,920	23,750	28,240	32,530	36,123
B.	BOLIVIA	2,700	3,010	3,820	4,580	5,600	6,570	7,957
C.	BRAZIL	41,110	52,180	69,720	92,520	121,290	144,720	165,851
D.	CHILE	5,060	6,070	7,580	9,370	11,150	13,100	14,824
E.	COLOMBIA	9,100	11,330	15,420	20,530	25,890	32,300	40,803
F.	COSTA RICA	620	800	1,250	1,730	2,250	2,810	3,841
G.	CUBA	4,290	5,510	7,030	8,550	9,720	10,630	11,116
H.	DOMINICAN REP.	1,760	2,240	3,040	4,060	5,440	7,170	8,232
I.	ECUADOR	2,470	3,200	4,360	5,960	8,120	10,260	12,175
J.	EL SALVADOR	1,630	1,860	2,450	3,440	4,510	5,030	6,032
K.	GUATEMALA	2,200	2,810	3,830	5,270	6,920	9,200	10,801
L.	HAITI	2,830	3,390	3,620	4,240	5,010	6,490	7,952
M.	HONDURAS	1,150	1,430	1,850	2,640	3,690	5,110	6,147
N.	MEXICO	19,650	25,790	36,050	50,690	69,660	82,590	95,831
O.	NICARAGUA	830	1,060	1,410	1,830	2,730	3,870	4,807
P.	PANAMA	620	800	1,060	1,430	1,960	2,400	2,767
Q.	PARAGUAY	1,110	1,400	1,750	2,300	3,150	4,220	5,222
R.	PERU	6,680	7,970	10,020	13,450	17,300	21,570	24,797
S.	URUGUAY	1,970	2,200	2,540	2,730	2,910	3,090	3,289
T.	VENEZUELA	3,710	4,970	7,350	10,280	15,020	19,330	23,242
	LATIN AMERICA	123,660	155,090	204,070	269,350	350,560	422,990	491,809
	UNITED STATES	132,590	152,270	180,680	205,050	227,760	249,910	274,028

SOURCE: 1940 and 1950 are derived from Wilkie (1974:ch. 8); 1960 and 1970 data are derived from IMF-IFS-Y, 1980; 1980, 1990, and 1998 data are from UN-DY, 1992–97.

Appendix C
MORENO-PEREZ SERIES: GDP-PPP, ABSOLUTE DATA

Table C:1
MORENO-PEREZ SERIES:[1] ABSOLUTE GDP-PPP, 1940–98
(M US 1980)

	Country	1940	1950	1960	1970	1980	1990	1998
A.	ARGENTINA	24,057.70	33,550.70	44,110.80	65,859.60	84,988.50	74,826.40	117,709.90
B.	BOLIVIA	1,348.00	1,637.70	1,749.60	2,986.70	4,380.00	4,317.30	6,020.70
C.	BRAZIL	18,299.50	31,383.30	60,740.20	106,481.40	243,500.10	280,962.60	350,149.90
D.	COLOMBIA	5,055.00	7,257.20	11,423.60	19,149.20	32,479.00	46,687.70	60,217.60
E.	COSTA RICA	402.00	625.90	1,168.30	2,078.60	3,545.00	4,445.10	5,961.50
F.	CHILE	6,525.60	9,152.00	13,468.10	20,159.60	25,798.90	34,230.40	58,767.80
G.	CUBA	5,588.20	8,428.80	10,828.90	15,565.80	26,080.00	35,824.20	27,777.10
H.	DOMINICAN REP.	714.50	1,150.00	2,011.20	3,310.30	6,437.80	7,832.80	11,323.60
I.	ECUADOR	889.60	1,670.10	2,704.10	4,566.40	11,489.90	14,310.30	18,259.10
J.	EL SALVADOR	593.30	946.20	1,506.30	2,581.90	3,496.70	3,461.50	5,006.40
K.	GUATEMALA	1,612.10	1,654.00	2,377.00	3,965.60	6,798.10	7,377.00	10,290.10
L.	HAITI	595.30	673.60	823.60	869.30	1,373.40	1,339.00	1,171.50
M.	HONDURAS	479.80	676.00	891.60	1,448.30	2,494.10	2,935.80	3,935.70
N.	MEXICO	15,932.90	27,814.20	48,900.10	93,866.90	175,917.70	206,073.60	261,870.60
O.	NICARAGUA	402.70	627.00	1,063.10	1,998.60	2,069.50	1,736.00	2,179.80
P.	PANAMA	558.10	601.90	966.50	2,048.60	3,455.10	3,599.30	5,256.50
Q.	PARAGUAY	629.30	842.20	1,108.80	1,767.90	4,067.50	5,551.80	6,666.60
R.	PERU	4,067.50	5,237.80	8,816.00	14,062.30	20,581.00	18,396.70	27,099.40
S.	URUGUAY	2,411.00	3,536.00	4,377.50	5,100.80	6,661.40	6,702.40	9,105.40
T.	VENEZUELA	7,364.20	16,190.20	30,268.30	50,365.40	60,777.60	63,235.80	80,470.70
	Latin America Total	97,519.40	153,654.70	249,303.70	418,233.20	726,391.30	823,845.70	1,069,239.90
	United States Total	656,011.00	1,019,726.00	1,404,424.00	2,044,237.00	2,688,468.00	3,486,544.00	4,289,471.00
	Total Gap	85.4	84.9	82.2	79.5	73.0	76.4	75.1

1. Based on ECLA data (1950–90) in SALA, 32–3423 and Moreno-Pérez estimates for 1940. Data for all years include his estimates for Cuba. Data for 1998 extrapolated here using ECLA-S, 1999.

SOURCE: Moreno-Pérez (1995).

Appendix D
MORENO-PEREZ SERIES: GDP/C-PPP, ABSOLUTE DATA

Table D:1
MORENO-PEREZ SERIES:[1] ABSOLUTE GDP/C-PPP, 1940–98
(US 1980)

	Country	1940	1950	1960	1970	1980	1990	1998
A.	ARGENTINA	1,697.3	1,965.5	2,214.4	2,773.0	3,009.5	2,300.2	3,258.6
B.	BOLIVIA	499.3	544.1	458.0	652.1	782.1	657.1	756.7
C.	BRAZIL	445.1	601.4	871.2	1,150.9	2,007.6	1,941.4	2,111.2
D.	COLOMBIA	555.5	640.5	740.8	932.7	1,254.5	1,445.4	1,475.8
E.	COSTA RICA	648.4	782.4	934.6	1,201.5	1575.6	1,581.9	1,552.1
F.	CHILE	1,289.6	1,507.7	1,776.8	2,151.5	2,313.8	2,613.0	3,964.4
G.	CUBA	1,302.6	1,529.7	1,540.4	1,820.6	2,683.1	3,370.1	2,498.8
H.	DOMINICAN REP.	406.0	513.4	661.6	815.3	1,183.4	1,092.4	1,375.6
I.	ECUADOR	360.2	521.9	620.2	766.2	1,415.0	1,394.8	1,499.7
J.	EL SALVADOR	364.0	508.7	614.8	750.6	775.3	688.2	830.0
K.	GUATEMALA	732.8	588.6	620.6	752.5	982.4	801.8	952.7
L.	HAITI	210.4	198.7	227.5	205.0	274.1	206.3	147.3
M.	HONDURAS	417.2	427.7	481.9	548.6	675.9	574.5	640.3
N.	MEXICO	810.8	1,078.5	1,356.5	1,851.8	2,525.4	2,495.1	2,732.6
O.	NICARAGUA	485.2	591.5	754.0	1,092.1	758.1	448.6	453.5
P.	PANAMA	900.2	752.4	911.8	1,432.6	1,762.8	1,499.7	1,899.7
Q.	PARAGUAY	566.9	601.6	633.6	768.7	1,291.3	1,315.6	1,276.6
R.	PERU	608.9	657.2	879.8	1,045.5	1,189.7	852.9	1,092.8
S.	URUGUAY	1,223.9	1,607.3	1,723.4	1,868.4	2,289.1	2,169.1	2,768.4
T.	VENEZUELA	1,985.0	3,257.6	4,118.1	4,899.4	4,046.4	3,271.4	3,462.30
	Latin America Average	788.60	990.70	1,221.70	1,555.00	2,064.10	1,890.80	2,174.10
	United States Total	4,965.20	6,696.80	7,773.00	9,969.50	11,805.70	13,951.20	15,653.40

1. The Moreno-Pérez series is based on his own estimates for 1940 and on ECLA data (1950–90) in SALA, 32–3423. Data for all years include Moreno-Pérez's estimates for Cuba. Data for 1998 extrapolated here using Appendix C, above. Population data used for these calculations are from SALA, 26–601 through 621.

SOURCE: Moreno-Pérez (1995).

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