

REAL PRODUCT AND PRICE COMPARISONS BETWEEN LATIN AMERICA AND THE REST OF THE WORLD

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The purpose of this article is to add 12 Latin American countries to the Phase III of the United Nations International Comparisons Project (ICP). The data for Latin America was obtained through ECIEL. It has been demonstrated that the exchange rates do not usually reflect the relative purchasing power of currencies. When low-income countries are compared to higher income countries the exchange rate conversion tends to understate the relative income of the lower income countries. This is true for the total GDP and even more so for the GDP components. In per capita terms it is found that for low income countries their income is more than twice as great as is indicated by the exchange rate conversion.

INTRODUCTION

International comparisons of gross output and its components are usually based on nominal terms, as obtained by converting their values in national currencies to a common currency (usually the U.S. dollar) by means of the exchange rates. However, these comparisons have been found wanting, as they deviate substantially from comparisons based on the purchasing power of currencies. As many studies have shown, the purchasing power of the currencies of low-income countries, relative to those of high-income countries, is often two or three times as great as their exchange rates would indicate. Therefore, if exchange rate comparisons are used, they will lead to a large underestimation of the real income of low-income countries. It has also been found that exchange rate comparisons distort certain kinds of structural comparisons because the deviation of purchasing power parities from exchange rates is not uniform for all kinds of goods.

The purpose of this article is to add 12 Latin American countries to the Phase III results of the United Nations International Comparisons Project (ICP). The third phase of the ICP provided benchmark comparisons of Gross Domestic Product (GDP) *per capita* at international prices for 34 countries in 1975, using the U.S. as a base. Product and price comparisons were given also for personal consumption, capital formation, and public consumption.

Latin American prices and purchasing power parities (PPP) comparison with the United States, with Europe, and with other developing countries, were given and analyzed in a previous article by Salazar-Carrillo, published by EDCC in July 1983.¹ The present article updates and supplements the earlier results in several important aspects.

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¹Salazar-Carrillo, Jorge. Real Product and Price Comparisons for Latin America and Other World Countries, *Economic Development and Cultural Change*, 31 (4), 1983.

In the first place, the year of reference or benchmark is now the year 1975 rather than 1970. In the second place, the linkage between the ECIEL² project and the ICP³ study has been enriched. The initial study linked Latin America and the rest of the world via the U.S.–Colombia comparisons. The new study included three other Latin American countries besides Colombia, namely Brazil, Mexico, and Uruguay. In this way we are able to link both projects using a richer and more stable bridge. In the third place the most recent comparisons are undertaken using a geometric mean formulation rather than the simple bridge index used before. In the fourth place, the preceding article included eleven Latin American countries, while we now have sixteen. In particular, five Central American countries have been added to the Latin American group.

METHODOLOGY

The data used here for the 12 Latin American countries was calculated through ECIEL. During the early stages of the ICP project an understanding was reached with Brookings Institution and corresponding ECIEL project, by which the results of the benchmark world comparisons and those of Latin America could be linked. Although the studies were conducted independently since the beginning, the methodologies used were quite similar. The main methodological difference was in the definition of the components of the GDP. The ICP project included as part of private consumption expenditures, government expenditures on health, education and recreation, while the ECIEL project followed the new System of National Accounts (SNA)⁴ concepts, where these expenditures are included as part of the government sector. Since the ICP project provides information under both methodologies, we have used the SNA concepts throughout in order to compare the 46 countries.

The ICP study included four Latin American countries Brazil, Colombia, Mexico and Uruguay, which were also included in the ECIEL project. Our study takes as given the values for GDP and its components, in the total and *per capita* versions, for those countries included in the ICP study. Therefore, there are no differences between the results presented here and those independently reported by the ICP for the four overlapping Latin American countries, except for minute differences resulting from our rounding to a higher number of significant digits. In order to link both the ICP and the ECIEL studies we have utilized a geometric mean of the price index number values provided by the four Latin American countries included in the ICP, used alternatively as bridges to estimate the indexes for the remaining Latin American countries. In other words, we have used the following formula:

$$\frac{PI_{LA}}{PI_{US}} = \sqrt[4]{\prod_{i=1}^4 \frac{PI_{LA}}{PI_i} \times \frac{PI_i}{PI_{US}}}$$

²ECIEL stands for Program of Joint Studies on Latin American Economic Integration, an organization engaged in planning and conducting studies useful to the economic development and integration of Latin America.

³Kravis, Irving B., Heston, Alan, and Summers, Robert, *et al. World Product and Income: International Comparisons of Real Gross Product*, Phase III, The Johns Hopkins University Press, Baltimore, Maryland, 1982.

⁴United Nations, *A System of National Accounts*, United Nations, New York, 1968.

where

- PI = Price Index
- i = the base country
- 1 = Brazil
- 2 = Colombia
- 3 = Mexico
- 4 = Uruguay
- LA = The Latin American country being linked
- US = The United States.

In the case of Argentina, for example:

$$\sqrt[4]{\left(\frac{PI_{Arg}}{PI_{Col}} \cdot \frac{PI_{Col}}{PI_{US}}\right) \left(\frac{PI_{Arg}}{PI_{Br}} \cdot \frac{PI_{Br}}{PI_{US}}\right) \left(\frac{PI_{Arg}}{PI_{Mex}} \cdot \frac{PI_{Mex}}{PI_{US}}\right) \left(\frac{PI_{Arg}}{PI_{Uru}} \cdot \frac{PI_{Uru}}{PI_{US}}\right)}$$

where the first part within the parentheses corresponds to the price index of each one of the 12 Latin American countries not included in the ICP in terms of the four base countries taken from the ECIEL results, and where the second part is the price index of each one of the four Latin American countries included in the ICP study in terms of the U.S. From these chains we have obtained a price index for each one of the 12 Latin American countries with the U.S. as base.

In the geometric formula used for linking the ICP and the ECIEL results, the different country bridges are given equal weights, because there is no reason to believe that any of them would be superior in their bridging qualities. Given the values for Brazil, Colombia, Mexico and Uruguay in the ICP study, each of these countries constitutes an equally valid estimator of the values of the group of Latin American nations covered by ECIEL, if they would have been included in the ICP study. Additionally, there is no basis for belief in the greater reliability of the estimates for any of these countries in either the ICP or the ECIEL research efforts.

The basic methodological approach of the ICP and of ECIEL has been to obtain indirectly quantity (Q) comparisons for final expenditure categories by means of price (P) and expenditure (E) comparisons. In other words, by definition, $E = PQ$, so that $Q = E/P$. For any pair of countries, j and k with respect to commodity i , it follows that:

$$\frac{E_{ij}}{E_{ik}} = \frac{P_{ij}}{P_{ik}} \times \frac{Q_{ij}}{Q_{ik}}$$

and therefore

$$\frac{Q_{ij}}{Q_{ik}} = \frac{E_{ij}}{E_{ik}} \div \frac{P_{ij}}{P_{ik}}$$

This procedure is essentially universal and its application yields a complete set of quantity comparisons for GDP and its components.

The price indices (P) have been defined as the Purchasing Power Parities (PPP) divided by the exchange rates. Therefore, when these indices are used, the GDP figures and its components (E) are deflated and expressed in international dollars. This is equivalent to taking the GDP figures in national currency and

dividing them by the PPP (instead of the exchange rate) in order to get the GDP and its components in real terms.

Finally, the data for the 34 countries covered by the ICP was supplied by these countries with respect to prices and expenditures. For the 12 Latin American countries we are adding, the purchasing parities and international price indices were provided by ECIEL, while the expenditure totals for 1975, and the official exchange rates, were obtained from World Bank statistics.

THE MAIN RESULTS

Table I shows the GDP of all the countries in U.S. dollars (Column 1), converted at official exchange rates. According to this measure, the GDP of all but five of the countries (Japan, France, Germany, Italy, and U.K.) was less than 10 percent of that of the U.S., and for 23 countries it was less than 1 percent; (thirteen of these countries are found in Latin America and the Caribbean). The

TABLE I
INDICES OF REAL TOTAL GROSS DOMESTIC PRODUCT FOR LATIN AMERICAN COUNTRIES,
THE U.S., EUROPE AND OTHER COUNTRIES, WITH THE U.S. AS BASE, 1975

Countries	GDP in U.S.\$	Price Index ¹	GDP in International Dollars	Relative Quantity Index	Rank ²
<i>Africa</i>					
Kenya (shillings)	3,231	0.5128	6,300	0.411	11
Malawi (kwacha)	696	0.3926	1,774	0.116	1
Zambia (kwacha)	2,461	0.6693	3,677	0.240	7
<i>Asia</i>					
India (rupees)	87,932	0.3091	284,477	18.561	42
Iran (rial)	51,954	0.5873	88,463	5.772	35
Japan (yen)	499,173	0.9131	546,679	35.668	45
Korea (won)	20,562	0.3926	52,372	3.417	32
Malaysia (ringgit)	3,489	0.1906	18,307	1.194	18
Pakistan (rupees)	13,297	0.3202	41,529	2.710	28
Philippines (pesos)	15,830	0.3989	39,683	2.589	26
Sri Lanka (rupees)	2,491	0.2764	9,013	0.588	14
Syria (pounds)	5,279	0.4000	13,198	0.861	17
Thailand (baht)	14,650	0.3725	39,329	2.566	24
<i>Europe</i>					
Austria (schillings)	37,716	1.0057	37,502	2.447	21
Belgium (francs)	61,693	1.1304	54,576	3.561	33
Denmark (kroner)	37,917	1.2713	29,825	1.946	20
France (francs)	338,803	1.0932	309,919	20.220	43
Germany (DM)	420,339	1.1423	367,976	24.008	44
Hungary (forint)	22,352	0.5942	37,616	2.454	22
Ireland (pounds)	8,360	0.8644	9,671	0.631	15
Italy (lire)	192,061	0.8915	215,436	14.056	40
Luxembourg (francs)	2,316	1.0924	2,120	0.138	2
Netherlands (guilders)	82,775	1.1225	73,741	4.811	34
Poland (zloty)	88,054	0.7236	121,688	7.939	36
Romania (lei)	37,017	0.7333	50,480	3.294	30
Spain (pesetas)	104,864	0.7369	142,305	9.385	37
U.K. (pounds)	231,707	0.9022	256,824	16.756	41
Yugoslavia (dinars)	33,445	0.6437	51,957	3.390	31

TABLE I (cont.)

Countries	GDP in U.S.\$	Price Index ¹	GDP in International Dollars	Relative Quantity Index	Rank ²
<i>Latin America and Caribbean</i>					
Argentina (peso)	36,566	0.7655	47,767	3.117	29
Bolivia (peso)	2,508	0.4690	5,348	0.349	9
Brazil (cruzeiro)	123,122	0.6341	194,168	12.668	39
Chile(escudo)	8,573	0.2166	39,578	2.582	25
Colombia (peso)	13,360	0.3495	38,226	2.494	23
Costa Rica (colones)	2,413	0.4433	5,442	0.355	10
Ecuador (sucre)	4,330	0.4370	9,908	0.646	16
El Salvador (colones)	1,791	0.4326	4,141	0.270	8
Guatemala (quetzal)	3,646	0.5291	6,891	0.450	12
Honduras (lempiras)	1,080	0.4046	2,668	0.174	3
Jamaica (dollars)	2,872	0.8163	3,519	0.230	5
Mexico (peso)	88,110	0.5920	148,834	9.711	38
Nicaragua (cordobas)	1,577	0.4811	3,278	0.214	4
Paraguay (guarani)	1,511	0.4254	3,553	0.232	6
Peru (sol)	13,616	0.5795	23,497	1.533	19
Uruguay (new peso)	3,639	0.4609	7,895	0.515	13
Venezuela (bolivar)	27,153	0.67644 0.6764	40,144	2.619	27
<i>North America</i>					
U.S. (dollars)	1,532,701	1.0000	1,532,701	100.000	46

Source: Calculations by the authors using ICP results and ECIEL data.

¹Price Index calculated as Purchasing Power Parity/Exchange Rate.

²Ranks are from lowest to highest.

comparisons relying on exchange rates, however, do not reflect the differing relative purchasing power of the currencies over all goods and services. The benchmark comparisons, on the other hand, are obtained by applying a common set of prices representative of the world price structure, to the quantities of the commodities and services entering into each country's final expenditures on GDP.

Column 2 of Table I shows indices of prices for the GDP as a whole, with the U.S. as a base.⁵ There are seven European countries with prices higher than the U.S. The Asian countries have the lowest prices (except Japan), leaving Africa and Latin America in the middle.

Column 3 of Table I provides the GDP in international (real) dollars, i.e. deflated by the international price index. There is a clear tendency for the international dollar figures to be much higher for low-income countries when compared with their exchange rate converted figures. It is now found that seven of the countries have more than 10 percent of the U.S. GDP, and 17 countries have less than 1 percent of the U.S. GDP, with 10 of them in Latin America and the Caribbean. In other words, the exchange-rate converted GDP tends to understate the real GDP of low-income countries relative to high-income countries, specifically the U.S.

⁵These price indices were calculated dividing the purchasing power parity by the official exchange rate.

A relative quantity index is created in Column 4 of Table I (with U.S. = 100) and their respective ranks are provided in Column 5. The highest ranks are found in the U.S. and Japan. In Latin America the highest ranks are found in Brazil and Mexico. Latin America and the Caribbean have seven of the lowest ten ranks, while Europe has one of them (Luxembourg) and Africa the other two (Malawi and Zambia).

The data of Table I is transformed to per capita terms in Table II, which shows a wide diversity of income levels. Column 1 of Table II shows Denmark with a higher *per capita* GDP than the U.S., and Belgium, France, Germany, Luxembourg and the Netherlands with more than 75 percent of the U.S. GDP *per capita*. Eight of the 17 Latin American countries have less than 10 percent of the U.S. GDP *per capita*. In terms of international dollars (Column 3) none of the countries had a higher GDP *per capita* than the U.S., but Germany, Denmark, Luxembourg, and France had more than 80 percent of the figure corresponding to the U.S., while Japan had 68 percent of the U.S. level. All Latin American countries, except Chile, had less than 50 percent of the corresponding U.S. GDP *per capita*. In this respect African and Asian nations share the lowest 10 ranks, with the exceptions of Honduras and Bolivia in Latin America.

TABLE II
INDICES OF REAL GROSS DOMESTIC PRODUCT *PER CAPITA* FOR LATIN AMERICAN COUNTRIES,
THE U.S., EUROPE, AND OTHER COUNTRIES, WITH THE U.S. AS A BASE, 1975

Countries	GDP <i>per capita</i> U.S.\$	Price Index	GDP <i>per capita</i> in International Dollars	Relative Quantity Index	Rank
<i>Africa</i>					
Kenya (shillings)	241.12	0.5128	470.20	6.552	2
Malawi (kwacha)	138.05	0.3926	351.63	4.900	1
Zambia (kwacha)	494.11	0.6693	738.25	10.287	6
<i>Asia</i>					
India (rupees)	145.61	0.3091	471.00	6.564	3
Iran (rial)	1,586.77	0.5873	2,701.80	37.647	27
Japan (yen)	4,474.24	0.9131	4,900.05	68.277	38
Korea (won)	582.79	0.3926	1,484.44	20.684	16
Malaysia (ringgit)	292.68	0.1906	1,535.57	21.397	18
Pakistan (rupees)	189.26	0.3202	591.07	8.236	4
Phillipines (pesos)	376.26	0.3989	943.24	13.143	9
Syria (pounds)	717.87	0.4000	1,794.67	25.007	22
Sri Lanka (rupees)	184.60	0.2764	667.87	9.306	5
Thailand (baht)	349.90	0.3725	939.33	13.089	8
<i>Europe</i>					
Austria (schillings)	5,015.41	1.0057	4,986.98	69.488	39
Belgium (francs)	6,294.53	1.1304	5,568.41	77.590	41
Denmark (kroner)	7,493.42	1.2713	5,894.30	82.131	44
France (francs)	6,423.06	1.0932	5,875.47	81.869	42
Germany (DM)	6,798.41	1.1423	5,951.51	82.928	45
Hungary (forint)	2,120.44	0.5942	3,568.56	49.724	32
Ireland (pounds)	2,632.24	0.8644	3,045.16	42.431	30
Italy (lire)	3,440.11	0.8915	3,858.79	53.768	34
Luxembourg (francs)	6,433.27	1.0924	5,889.12	82.059	43

TABLE II (cont.)

Countries	GDP per capita U.S.\$	Price Index	GDP per capita in International Dollars	Relative Quantity Index	Rank
<i>Europe (cont.)</i>					
Netherlands (guilders)	6,059.64	1.1225	5,398.34	75.220	40
Poland (zloty)	2,588.14	0.7236	3,576.76	49.838	33
Romania (lei)	1,742.37	0.7333	2,376.07	33.108	24
Spain (pesetas)	2,952.68	0.7369	4,006.89	55.832	36
U.K. (pounds)	4,139.02	0.9022	4,587.70	63.925	37
Yugoslavia (dinars)	1,663.09	0.6437	2,583.64	36.000	26
<i>Latin America and Caribbean</i>					
Argentina (peso)	1,440.90	0.7655	1,882.30	26.228	23
Bolivia (peso)	512.53	0.4690	1,092.81	15.227	11
Brazil (cruzeiro)	1,122.17	0.6341	1,769.71	24.659	21
Chile (escudo)	840.52	0.2166	3,880.52	54.071	35
Colombia (peso)	566.68	0.3495	1,621.40	22.593	19
Costa Rica (colones)	1,227.79	0.4433	2,769.66	38.592	28
Ecuador (sucre)	628.24	0.4370	1,437.62	20.032	14
El Salvador (colones)	477.13	0.4326	1,033.59	14.402	10
Guatemala (quetzal)	600.36	0.5291	1,134.68	15.811	12
Honduras (lempiras)	348.79	0.4046	862.06	12.012	7
Jamaica (dollars)	1,405.97	0.8163	1,722.37	23.999	20
Mexico (peso)	1,487.69	0.5920	2,512.99	35.016	25
Nicaragua (cordobas)	697.48	0.4811	1,449.76	20.201	15
Paraguay (guarani)	570.13	0.4254	1,340.22	18.675	13
Peru (sol)	879.33	0.5795	1,517.39	21.143	17
Uruguay (new peso)	1,279.88	0.4609	2,776.91	38.693	29
Venezuela (bolivar)	2,145.98	0.6764	3,172.65	44.208	31
<i>North America</i>					
U.S. (dollars)	7,176.71	1.0000	7,176.71	100.000	46

Source: *Ibid.*

CONSUMPTION, INVESTMENT AND GOVERNMENT EXPENDITURES

The three principal components of the GDP, consumption, investment and government expenditures are presented in Tables III to VIII in both total and *per capita* terms. The same presentation as before is followed: Column 1 gives the U.S. dollar converted figure, Column 2 the price index, Column 3 the international dollar figure, Column 4 the relative quantity index and Column 5 its respective rank. It should be noted that, as most index formulations, and bridging procedures, the estimates at the component level do not add up to the total at the GDP level.⁶ Therefore, the estimates of consumption, investment,

⁶This property is called, in the statistics of index numbers, additive consistency. For further information on this index number test, and failure or success on fulfilling it, consult European Communities Statistical Office, *Comparison in Real Values of the Aggregates of ESA, 1975*, p. 31, Luxembourg, 1977; Orlando, Frank, A Theoretical and Empirical Analysis of Index Number Formulas for Multinational Purchasing Power and Real Product Comparison, in Salazar-Carrillo, Jorge, *The Methodologies of International Purchasing Power and Real Product Comparison*, forthcoming, 1988 and in Kravis, Heston and Summers, *op. cit.*, p. 72.

and government in international dollars, if added for any country, does not necessarily yield the estimate of GDP in international dollars.

A comparison of the price indexes for the three components shows that for low-income countries (Asia, Africa and Latin America) these three components are relatively inexpensive while in high-income countries (U.S. and Europe) relatively expensive. At the same time it is found that investment has higher price relatives than the other two components in the low-income countries. In Latin America, the only country in which investment is not very expensive, in relative terms, is Venezuela.

Investment is relatively cheap in the U.S. when compared with the price relatives in the consumption and government sectors. There are 13 countries with prices higher than those of the U.S. in terms of investment, while there are only 6 countries in this position in terms of consumption and government price relatives.

The government sector in poor-income countries has lower price relatives than those for GDP as a whole. Government, with its large component of employee compensation, tends to be inexpensive in the relative price structure of low-income countries, and high priced in the high income countries.

Utilizing the quantity index it is found, in terms of total private consumption (Table III), that Japan follows the U.S. with 31 percent of the level of consumption of the latter. The highest in Latin America are Brazil and Mexico with 12 percent and 10 percent respectively of the U.S. level. Thirty-seven of the 46 countries had less than 10 percent of the U.S. total private consumption. In *per capita* terms (Table IV) the picture changes, and it is found that only six of the countries had less than 10 percent of the corresponding U.S. figure. In Latin America the highest per capita consumption is found in Chile and the lowest in Honduras.

TABLE III
INDICES OF TOTAL PRIVATE CONSUMPTION FOR LATIN AMERICAN COUNTRIES, THE U.S., EUROPE, AND OTHER COUNTRIES, WITH THE U.S. AS BASE, 1975

Countries	Consumption in U.S.\$	Price Index	Consumption in International Dollars	Relative Quantity Index	Rank
<i>Africa</i>					
Kenya (shillings)	2,202	0.5420	4,064	0.412	11
Malawi (kwacha)	529	0.4457	1,187	0.120	1
Zambia (kwacha)	1,264	0.7298	1,732	0.176	3
<i>Asia</i>					
India (rupees)	61,372	0.3377	181,734	18.418	42
Iran (rial)	21,152	0.5311	39,827	4.036	34
Japan (yen)	284,935	0.9367	304,190	30.829	45
Korea (won)	14,297	0.4215	33,919	3.438	32
Malaysia (ringgit)	2,045	0.2047	9,989	1.012	18
Pakistan (rupees)	10,564	0.3625	29,143	2.954	29
Phillipines (pesos)	10,436	0.4017	25,981	2.633	25
Sri Lanka (rupees)	2,056	0.3557	5,779	0.586	14
Syria (pounds)	3,411	0.3811	8,949	0.907	17
Thailand (baht)	10,201	0.3725	27,385	2.775	28

TABLE III (cont.)

Countries	Consumption in U.S.\$	Price Index	Consumption in International Dollars	Relative Quantity Index	Rank
<i>Europe</i>					
Austria (schillings)	21,134	0.9195	22,984	2.329	23
Belgium (francs)	37,216	1.0788	34,497	3.496	33
Denmark (kroner)	20,461	1.2261	16,688	1.691	20
France (francs)	208,914	1.1049	189,080	19.163	43
Germany (DM)	257,003	1.1585	221,841	22.483	44
Hungary (forint)	11,787	0.6184	19,060	1.932	22
Ireland (pounds)	5,293	0.8467	6,252	0.634	16
Italy (lire)	124,826	0.8946	139,532	14.141	40
Luxembourg (francs)	1,367	1.0000	1,367	0.139	2
Netherlands (guilders)	46,979	1.0791	43,536	4.412	35
Poland (zloty)	43,966	0.7688	57,188	5.796	36
Romania (lei)	17,945	0.7333	24,472	2.480	24
Spain (pesetas)	71,457	0.7247	98,602	9.993	37
U.K. (pounds)	136,227	0.9111	149,519	15.153	41
Yugoslavia (dinars)	16,673	0.6264	26,617	2.698	26
<i>Latin America and Caribbean</i>					
Argentina (peso)	23,910	0.7246	32,997	3.344	31
Bolivia (peso)	1,764	0.4733	3,727	0.378	10
Brazil (cruzeiro)	84,674	0.7049	120,122	12.174	39
Chile (escudo)	7,202	0.2207	32,631	3.307	30
Colombia (peso)	9,923	0.3625	27,373	2.774	27
Costa Rica (colones)	1,602	0.4991	3,209	0.325	9
Ecuador (sucre)	2,823	0.4899	5,762	0.584	13
El Salvador (colones)	1,285	0.4738	2,712	0.275	8
Guatemala (quetzal)	2,875	0.5858	4,908	0.497	12
Honduras (lempiras)	831	0.4646	1,788	0.181	4
Jamaica (dollars)	1,910	0.8295	2,302	0.233	6
Mexico (peso)	60,473	0.6000	100,788	10.215	38
Nicaragua (cordobas)	1,236	0.5432	2,275	0.231	5
Paraguay (guarani)	1,122	0.4339	2,587	0.262	7
Peru (sol)	10,413	0.6256	16,644	1.687	19
Uruguay (new peso)	2,803	0.4783	5,860	0.594	15
Venezuela (bolivar)	12,730	0.7596	16,759	1.698	21
<i>North America</i>					
U.S. (dollars)	986,711	1.0000	986,711	100.000	46

Source: *Ibid.*

TABLE IV

INDICES OF *PER CAPITA* PRIVATE CONSUMPTION FOR LATIN AMERICAN COUNTRIES, THE U.S., EUROPE, AND OTHER COUNTRIES OF THE WORLD, WITH THE U.S. AS BASE, 1975

Countries	<i>Per Capita</i> Consumption in U.S.\$	Price Index	<i>Per Capita</i> Consumption in International Dollars	Relative Quantity Index	Rank
<i>Africa</i>					
Kenya (shillings)	164.37	0.5420	303.27	6.564	3
Malawi (kwacha)	104.85	0.4457	235.25	5.092	1
Zambia (kwacha)	253.76	0.7298	347.71	7.526	4

TABLE IV (cont.)

Countries	Per Capita Consumption in U.S.\$	Price Index	Per Capita Consumption in International Dollars	Relative Quantity Index	Rank
<i>Asia</i>					
India (rupees)	101.63	0.3377	300.94	6.514	2
Iran (rial)	646.03	0.5311	1,216.40	26.328	23
Japan (yen)	2,553.96	0.9367	2,726.55	59.014	36
Korea (won)	405.22	0.4215	961.38	20.808	15
Malaysia (ringgit)	171.51	0.2047	837.84	18.134	14
Pakistan (rupees)	150.36	0.3625	414.79	8.978	5
Phillipines (pesos)	248.07	0.4017	617.54	13.366	8
Sri Lanka (rupees)	152.31	0.3557	428.20	9.268	6
Syria (pounds)	463.77	0.3811	1,216.92	26.339	24
Thailand (baht)	243.64	0.3725	654.06	14.157	9
<i>Europe</i>					
Austria (schillings)	2,810.38	0.9195	3,056.43	66.154	38
Belgium (francs)	3,797.12	1.0788	3,519.77	76.183	42
Denmark (kroner)	4,043.65	1.2261	3,297.98	71.382	41
France (francs)	3,960.60	1.1049	3,584.58	77.586	43
Germany (DM)	4,156.67	1.1585	3,587.98	77.659	44
Hungary (forint)	1,118.19	0.6184	1,808.19	39.137	31
Ireland (pounds)	1,666.67	0.8467	1,968.43	42.605	32
Italy (lire)	2,235.81	0.8946	2,499.23	54.094	34
Luxembourg (francs)	3,798.46	1.0000	3,798.46	82.215	45
Netherlands (guilders)	3,439.20	1.0791	3,187.10	68.982	39
Poland (zloty)	1,292.29	0.7688	1,680.92	36.382	29
Romania (lei)	844.69	0.7333	1,151.90	24.932	21
Spain (pesetas)	2,012.02	0.7247	2,776.35	60.092	37
U.K. (pounds)	2,433.44	0.9111	2,670.89	57.809	35
Yugoslavia (dinars)	829.09	0.6264	1,323.58	28.648	26
<i>Latin America and Caribbean</i>					
Argentina (peso)	942.19	0.7246	1,300.29	28.144	25
Bolivia (peso)	360.52	0.4733	761.71	16.487	11
Brazil (cruzeiro)	771.74	0.7049	1,094.82	23.697	19
Chile (escudo)	706.11	0.2207	3,199.42	69.249	40
Colombia (peso)	420.88	0.3625	1,161.05	25.130	22
Costa Rica (colones)	815.02	0.4991	1,632.98	35.345	28
Ecuador (sucre)	409.57	0.4899	836.03	18.095	13
El Salvador (colones)	320.72	0.4738	676.91	14.651	10
Guatemala (quetzal)	473.41	0.5858	808.14	17.492	12
Honduras (lempiras)	268.34	0.4646	577.56	12.501	7
Jamaica (dollars)	934.80	0.8295	1,126.94	24.392	20
Mexico (peso)	1,021.05	0.6000	1,701.75	36.833	30
Nicaragua (cordobas)	546.46	0.5432	1,006.01	21.774	17
Paraguay (guarani)	423.38	0.4339	975.76	21.119	16
Peru (sol)	672.43	0.6256	1,074.86	23.264	18
Uruguay (new peso)	985.79	0.4783	2,061.03	44.609	33
Venezuela (bolivar)	1,006.10	0.7596	1,324.52	28.668	27
<i>North America</i>					
U.S. (dollars)	4,620.17	1.0000	4,620.17	100.000	46

Source: *Ibid.*

Turning now to total investment or capital formation (Table V) it is seen that Japan follows the U.S. with 66 percent of the latter's figure. The next highest ranks correspond to Germany and France with 36 and 28 percent of the U.S. gross investment respectively. The remaining countries have 15 percent or less of total U.S. investment. In Latin America the greatest investment flows corresponds to Brazil and Mexico, and the lowest to Guatemala and Honduras. However, in per capita terms (Table VI) it is found that six countries (Japan, Germany, France, Netherlands, Venezuela and Luxembourg) had higher gross investment than the U.S. in 1975. The case of Venezuela is explained by heavy investment in the oil industry.

Considering now the total government or public consumption sector (Table VII), it is seen that the U.K. and India are ranked behind the U.S., with 28 percent of the corresponding figure for this country. In Latin America the highest rank corresponds to Brazil, with 12 percent of the U.S. total government expenditures and the lowest to Paraguay, with less than 1 percent. Thirty-seven of the countries spent less than 10 percent of the U.S. total.

In *per capita* terms, (Table VIII), it is found that Chile, Denmark, and the U.K. spent more in government expenditures than the U.S. in 1975. In these terms, only three countries (Ireland, Malawi, and India) spent less than 10 percent of the U.S. consumption of public goods. In Latin America, apart from Chile which has the highest rank,⁷ it is also found that Costa Rica and Uruguay spent 66 and 51 percent respectively of the U.S. in government totals in real terms.

SOME CONCLUSIONS

It has been shown by the ICP studies that the exchange rates do not usually reflect the relative purchasing power of currencies. The same conclusion holds for the 12 Latin American countries we have added. When the low income countries are compared to the higher-income countries the exchange rate conversion tends to understate the relative income of the lower income countries. This is true for the total GDP and even more so for the GDP components. In the case of capital formation it has been shown that the purchasing power of currencies

TABLE V
INDICES OF TOTAL REAL INVESTMENT FOR LATIN AMERICAN COUNTRIES, THE U.S., EUROPE,
AND OTHER COUNTRIES OF THE WORLD, WITH THE U.S. AS BASE, 1975

Countries	Investment in U.S.\$	Price Index	Investment in International Dollars	Relative Quantity Index	Rank
<i>Africa</i>					
Kenya (shillings)	434	0.8367	519	0.205	11
Malawi (kwacha)	88	0.6200	142	0.056	2
Zambia (kwacha)	517	0.8991	575	0.227	13

⁷In the case of Chile this can be explained by the extraordinary reductions in real wages experienced by government employees from the end of 1973 up to the year surveyed here.

TABLE V (cont.)

Countries	Investment in U.S.\$	Price Index	Investment in International Dollars	Relative Quantity Index	Rank
<i>Asia</i>					
India (rupees)	17,833	0.4928	36,187	14.295	41
Iran (rial)	18,709	0.7914	23,640	9.339	35
Japan (yen)	163,652	1.0074	162,450	64.173	45
Korea (won)	4,417	0.4442	9,336	3.688	29
Malaysia (ringgit)	832	0.2047	4,064	1.606	21
Pakistan (rupees)	1,289	0.4139	3,114	1.230	20
Phillipines (pesos)	3,822	0.8047	4,750	1.876	22
Sri Lanka (rupees)	181	0.2274	796	0.314	14
Syria (pounds)	749	0.5378	1,393	0.550	17
Thailand (baht)	2,931	0.5392	5,436	2.147	23
<i>Europe</i>					
Austria (schillings)	10,070	1.3736	7,331	2.896	27
Belgium (francs)	14,220	1.2391	11,476	4.533	31
Denmark (kroner)	7,224	1.2870	5,613	2.217	24
France (francs)	80,294	1.1678	68,757	27.161	43
Germany (DM)	102,144	1.1626	87,858	34.707	44
Hungary (forint)	6,986	0.8502	8,217	3.246	28
Ireland (pounds)	1,298	1.0822	1,199	0.474	16
Italy (lire)	36,616	0.9789	37,405	14.776	42
Luxembourg (francs)	617	1.3668	451	0.178	8
Netherlands (guilders)	20,341	1.1542	17,623	6.962	34
Poland (zloty)	31,147	0.9849	31,625	12.493	38
Romania (lei)	15,017	1.0750	13,969	5.518	32
Spain (pesetas)	23,707	0.9111	26,020	10.279	36
U.K. (pounds)	37,558	1.1600	32,378	12.790	39
Yugoslavia (dinars)	9,818	0.9828	9,990	3.946	30
<i>Latin America and Caribbean</i>					
Argentina (peso)	8,915	1.5508	5,749	2.271	26
Bolivia (peso)	460	0.8746	526	0.208	12
Brazil (cruzeiro)	26,304	0.7293	36,067	14.248	40
Chile (escudo)	245	0.5409	453	0.179	9
Colombia (peso)	2,453	0.4369	5,615	2.218	25
Costa Rica (colones)	425	0.5317	799	0.316	15
Ecuador (sucre)	1,073	0.6062	1,770	0.699	18
El Salvador (colones)	306	0.6566	466	0.184	10
Guatemala (quetzal)	52	0.6751	77	0.030	1
Honduras (lempiras)	110	0.5065	217	0.086	3
Jamaica (dollars)	436	1.1298	386	0.152	6
Mexico (peso)	18,451	0.6800	27,134	10.719	37
Nicaragua (cordobas)	198	0.6289	315	0.124	4
Paraguay (guarani)	294	0.7918	371	0.147	5
Peru (sol)	1,354	0.7384	1,834	0.724	19
Uruguay (new peso)	351	0.8783	400	0.158	7
Venezuela (bolivar)	10,702	0.6720	15,926	6.291	33
<i>North America</i>					
U.S. (dollars)	253,143	1.0000	253,143	100.000	46

Source: *Ibid.*

TABLE VI

INDICES OF REAL *PER CAPITA* INVESTMENT FOR LATIN AMERICAN COUNTRIES, THE U.S., EUROPE, AND OTHER COUNTRIES OF THE WORLD, WITH THE U.S. AS BASE, 1975

Countries	<i>Per Capita</i> Investment in U.S.\$	Price Index	<i>Per Capita</i> Investment in International Dollars	Relative Quantity Index	Rank
<i>Africa</i>					
Kenya (shillings)	32.37	0.8367	38.69	3.264	3
Malawi (kwacha)	17.40	0.6200	28.06	2.368	2
Zambia (kwacha)	103.81	0.8991	115.46	9.741	11
<i>Asia</i>					
India (rupees)	29.53	0.4928	59.93	5.056	7
Iran (rial)	571.39	0.7914	722.00	60.913	33
Japan (yen)	1,466.86	1.0074	1,456.09	122.845	46
Korea (won)	117.55	0.4442	264.63	22.326	23
Malaysia (ringgit)	69.75	0.2047	340.74	28.747	25
Pakistan (rupees)	18.34	0.4139	44.31	3.738	4
Phillipines (pesos)	90.85	0.8047	112.90	9.525	10
Sri Lanka (rupees)	13.39	0.2274	58.87	4.966	6
Syria (pounds)	101.80	0.5378	189.29	15.970	19
Thailand (baht)	70.01	0.5392	129.84	10.954	14
<i>Europe</i>					
Austria (schillings)	1,339.12	1.3736	974.90	82.249	37
Belgium (francs)	1,450.92	1.2391	1,170.95	98.789	39
Denmark (kroner)	1,427.74	1.2870	1,109.35	93.593	38
France (francs)	1,522.22	1.1678	1,303.49	109.971	44
Germany (DM)	1,652.05	1.1626	1,420.99	119.885	45
Hungary (forint)	662.71	0.8502	779.47	65.762	35
Ireland (pounds)	408.62	1.0822	377.58	31.855	26
Italy (lire)	655.85	0.9789	669.98	56.524	32
Luxembourg (francs)	1,714.67	1.3668	1,254.52	105.840	41
Netherlands (guilders)	1,489.10	1.1542	1,290.16	108.847	43
Poland (zloty)	915.50	0.9849	929.54	78.422	36
Romania (lei)	706.87	1.0750	657.55	55.476	31
Spain (pesetas)	667.53	0.9111	732.66	61.813	34
U.K. (pounds)	670.90	1.1600	578.36	48.795	30
Yugoslavia (dinars)	488.22	0.9828	496.76	41.910	29
<i>Latin America and Caribbean</i>					
Argentina (peso)	351.32	1.5508	226.54	19.113	20
Bolivia (peso)	93.98	0.8746	107.46	9.066	9
Brazil (cruzeiro)	239.74	0.7293	328.72	27.733	24
Chile (escudo)	24.00	0.5409	44.38	3.744	5
Colombia (peso)	104.03	0.4369	238.12	20.089	21
Costa Rica (colones)	216.45	0.5317	407.09	34.345	27
Ecuador (sucre)	155.64	0.6062	256.74	21.660	22
El Salvador (colones)	76.39	0.6566	116.33	9.815	12
Guatemala (quetzal)	8.56	0.6751	12.68	1.070	1
Honduras (lempiras)	35.54	0.5065	70.17	5.920	8
Jamaica (dollars)	213.24	1.1298	188.74	15.923	18
Mexico (peso)	311.53	0.6800	458.13	38.651	28
Nicaragua (cordobas)	87.56	0.6289	139.23	11.747	15
Paraguay (guarani)	110.91	0.7918	140.07	11.818	16
Peru (sol)	87.44	0.7384	118.42	9.991	13

TABLE VI (cont.)

Countries	Per Capita Investment in U.S.\$	Price Index	Per Capita Investment in International Dollars	Relative Quantity Index	Rank
<i>Latin America and Caribbean (cont.)</i>					
Uruguay (new peso)	123.42	0.8783	140.52	11.855	17
Venezuela (bolivar)	845.82	0.6720	1,258.67	106.190	42
<i>North America</i>					
U.S. (dollars)	1,185.32	1.0000	1,185.32	100.000	40

Source: *Ibid.*

TABLE VII

INDICES OF REAL GOVERNMENT EXPENDITURES FOR LATIN AMERICAN COUNTRIES, THE U.S., EUROPE, AND OTHER COUNTRIES OF THE WORLD, WITH THE U.S. AS BASE, 1975

Countries	Government Expenditures in U.S.\$	Price Index	Government Expenditures in International Dollars	Relative Quantity Index	Rank
<i>Africa</i>					
Kenya (shillings)	595	0.2940	2,023	0.693	14
Malawi (kwacha)	80	0.1536	519 ²	0.178	3
Zambia (kwacha)	677	0.4317	1,568	0.537	11
<i>Asia</i>					
India (rupees)	8,726	0.1205	72,416	24.797	44
Iran (rial)	12,093	0.4867	24,847	8.508	37
Japan (yen)	50,172	0.9468	52,991	18.145	43
Korea (won)	2,117	0.2459	8,610	2.948	26
Malaysia (ringgit)	613	0.1438	4,264	1.460	18
Pakistan (rupees)	1,444	0.1360	10,620	3.637	31
Phillipines (pesos)	1,506	0.1541	9,770	3.345	28
Sri Lanka (rupees)	255	0.0896	2,847	0.975	16
Syria (pounds)	1,120	0.3514	3,186	1.091	17
Thailand (baht)	1,518	0.2402	6,319	2.164	21
<i>Europe</i>					
Austria (schillings)	6,511	0.9253	7,037	2.410	22
Belgium (francs)	10,154	1.3967	7,270	2.490	23
Denmark (kroner)	10,106	1.3043	7,748	2.653	25
France (francs)	48,899	1.1026	44,349	15.186	41
Germany (DM)	60,843	1.3008	46,773	16.016	42
Hungary (forint)	3,410	0.3333	10,230	3.503	30
Ireland (pounds)	169	0.7244	233	0.080	1
Italy (lire)	30,619	0.8195	37,363	12.794	40
Luxembourg (francs)	331	1.3940	238	0.081	2
Netherlands (guilders)	15,082	1.4980	10,068	3.447	29
Poland (zloty)	12,293	0.3970	30,965	10.603	38
Romania (lei)	4,054	0.3583	11,314	3.874	32
Spain (pesetas)	9,683	0.6812	14,214	4.867	33
U.K. (pounds)	55,584	0.6733	82,555	28.269	45
Yugoslavia (dinars)	6,948	0.4195	16,563	5.672	34

TABLE VII (cont.)

Countries	Government Expenditures in U.S.S	Price Index	Government Expenditures in International Dollars	Relative Quantity Index	Rank
<i>Latin America and Caribbean</i>					
Argentina (peso)	3,740	0.4262	8,776	3.005	27
Bolivia (peso)	284	0.1995	1,423	0.487	10
Brazil (cruzeiro)	12,116	0.3268	37,075	12.695	39
Chile (escudo)	1,126	0.0483	23,314	7.983	36
Colombia (peso)	985	0.2168	4,542	1.555	19
Costa Rica (colones)	386	0.2171	1,777	0.608	12
Ecuador (sucre)	434	0.1648	2,636	0.903	15
El Salvador (colones)	200	0.1598	1,254	0.429	9
Guatemala (quetzal)	250	0.2571	972	0.333	8
Honduras (lempiras)	139	0.1592	873	0.299	6
Jamaica (dollars)	527	0.5644	934	0.320	7
Mexico (peso)	9,080	0.4960	18,305	6.268	35
Nicaragua (cordobas)	143	0.1949	735	0.252	5
Paraguay (guarani)	95	0.1690	562	0.193	4
Pero (sol)	1,850	0.3355	5,514	1.888	20
Uruguay (new peso)	485	0.2435	1,993	0.682	13
Venezuela (bolivar)	3,721	0.4890	7,609	2.605	24
<i>North America</i>					
U.S. (dollar)	292,037	1.0000	292,037	100.000	46

Source: *Ibid.*

TABLE VIII

INDICES OF REAL *PER CAPITA* GOVERNMENT EXPENDITURES FOR LATIN AMERICAN COUNTRIES, THE U.S., EUROPE, AND OTHER COUNTRIES OF THE WORLD, WITH THE U.S. AS BASE, 1975

Countries	Government Expenditures <i>Per Capita</i> in U.S.S	Price Index	Government Expenditures <i>Per Capita</i> International Dollars	Relative Quantity Index	Rank
<i>Africa</i>					
Kenya (shillings)	44.40	0.2940	151.01	11.043	5
Malawi (kwacha)	15.80	0.1536	102.84	7.521	2
Zambia (kwacha)	135.92	0.4317	314.85	23.025	17
<i>Asia</i>					
India (rupees)	14.45	0.1205	119.92	8.769	3
Iran (rial)	369.35	0.4867	758.88	55.497	36
Japan (yen)	449.70	0.9468	474.97	34.735	27
Korea (won)	60.01	0.2459	244.04	17.846	12
Malaysia (ringgit)	51.43	0.1438	357.64	26.154	22
Pakistan (rupees)	20.56	0.1360	151.15	11.054	6
Phillipines (pesos)	35.78	0.1541	232.22	16.982	11
Sri Lanka (rupees)	18.90	0.0896	210.95	15.427	9
Syria (pounds)	152.26	0.3514	433.30	31.687	25
Thailand (baht)	36.25	0.2402	150.92	11.036	4

TABLE VIII (cont.)

Countries	Government Expenditures <i>Per Capita</i> in U.S.\$	Price Index	Government Expenditures in <i>Per Capita</i> International Dollars	Relative Quantity Index	Rank
<i>Europe</i>					
Austria (schillings)	865.88	0.9253	935.79	68.434	41
Belgium (francs)	1,036.06	1.3967	741.79	54.247	34
Denmark (kroner)	1,997.22	1.3043	1,531.26	111.981	45
France (francs)	927.93	1.1026	840.76	61.485	38
Germany (DM)	984.05	1.3008	756.49	55.322	35
Hungary (forint)	323.45	0.3333	970.46	70.969	42
Ireland (pounds)	53.18	0.7244	73.41	5.368	1
Italy (lire)	548.43	0.8195	669.22	48.940	31
Luxembourg (francs)	920.06	1.3940	660.02	48.267	30
Netherlands (guilders)	1,104.09	1.4980	737.04	53.900	33
Poland (zloty)	361.33	0.3970	910.14	66.559	40
Romania (lei)	190.81	0.3583	532.54	38.945	28
Spain (pesetas)	272.64	0.6812	400.24	29.269	24
U.K. (pounds)	992.92	0.6733	1,474.70	107.845	44
Yugoslavia (dinars)	345.52	0.4195	823.64	60.233	37
<i>Latin America and Caribbean</i>					
Argentina (peso)	147.40	0.4262	345.84	25.291	20
Bolivia (peso)	58.03	0.1995	290.89	21.273	14
Brazil (cruzeiro)	110.43	0.3268	337.91	24.712	19
Chile (escudo)	110.41	0.0483	2,285.92	167.169	46
Colombia (peso)	41.77	0.2168	192.64	14.088	8
Costa Rica (colones)	196.32	0.2171	904.27	66.129	39
Ecuador (sucre)	63.04	0.1648	382.50	27.972	23
El Salvador (colones)	50.02	0.1598	313.05	22.893	16
Guatemala (quetzal)	41.17	0.2571	160.12	11.709	7
Honduras (lempiras)	44.91	0.1592	282.11	20.630	13
Jamaica (dollars)	257.93	0.5644	457.00	33.420	26
Mexico (peso)	153.30	0.4960	309.08	22.603	15
Nicaragua (cordobas)	63.39	0.1949	325.24	23.785	18
Paraguay (guarani)	35.84	0.1690	212.08	15.509	10
Peru (sold)	119.46	0.3355	356.06	26.039	21
Uruguay (new peso)	170.67	0.2435	700.91	51.257	32
Venezuela (bolivar)	294.05	0.4890	601.34	43.976	29
<i>North America</i>					
U.S. (dollars)	1367.43	1.0000	1367.40	100.000	43

Source: *Ibid.*

in low income countries is much lower relative to the exchange rate than that of other components of GDP. In *per capita* terms it has been demonstrated that for low income countries their income is more than twice as great as it is indicated by the exchange rate conversion.

Of the 17 Latin American and Caribbean countries, Brazil and Mexico had the highest ranks in terms of the total GDP and its components. Ten of the 17 countries had less than 1 percent of the U.S. level of GDP, private consumption and government expenditures, while 12 of them had less than 1 percent of the U.S. capital formation.

In per capita terms the situation for Latin America is different. The highest ranks for the GDP and the private consumption corresponded to Chile and Uruguay. For capital formation and government expenditures, Venezuela and Chile respectively had higher ranks than those corresponding to the United States. The number of Latin American countries with less than 25 percent of the U.S. figure is as follows: eleven in terms of the GDP, ten in terms of the private consumption, thirteen in terms of capital formation and nine in terms of government expenditures.

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