

macroeconomía del desarrollo

Long run economic development in Latin America in a comparative perspective: Proximate and ultimate causes

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Abstract

This paper describes trends in economic growth and its causes in several Latin American countries in the 20th century. In the explanatory scheme, a distinction is made between “proximate” and “ultimate” causes of economic growth. Proximate causes are those areas of causality where models and quantification is possible, whereas ultimate causes are much more difficult to quantify. Some elements in the realm of the ultimate causes (like institutions and income distribution) will be analysed in an historical perspective and others, especially total factor productivity and growth accounting, in the proximate scheme. Latin America’s performance is also compared to developed and other developing countries.

The paper provides a quantitative assessment of Latin American economic growth performance in the twentieth century in a comparative perspective. Within the region it was found that heterogeneity has not decreased and no clear tendencies of convergence can be detected. The reform process of the late 1980s and 1990s was implemented because of the profound crisis of the 1980s and the detection of some structural weaknesses in the Latin American economies. Some aggressive and early reformers show impressive growth results (e.g. Chile) but on the whole, the growth performance in the 1990s has been rather disappointing.

The paper stresses the fact that the proximate causes are not independent of the ultimate causes of growth as to a significant degree, proximate causes are dimensions through which ultimate causes can be seen to operate. At the proximate level, the interaction

between capital accumulation and technological progress is an example of this interdependence. At the ultimate level, there exists interaction between the institutional framework of a society and the implementation of economic policy. An example of interdependence between the ultimate and proximate levels is the relationship between technological progress and the institutional context.

The paper concludes with a description of some of the most important characteristics of Latin America in the realm of the ultimate causes. The interdependence between proximate and ultimate is mainly analysed in terms of growth. Besides the unsatisfactory growth performance, equity aspects are another worrying characteristic of contemporary trends in the region and institutional factors are probably key determinants in explaining the weak relationship between growth and equity.

I. Introduction

The theory and empirics of economic growth have come to be the focus of attention once again. Surveying the literature, one sees many new interesting ideas and the rediscovery of older, somewhat forgotten ones. This article provides an assessment of Latin America's twentieth century economic performance and policy from a comparative and historical perspective. The empirical work concentrates on determining trends and main sources of growth in a cross-section of countries. Economic growth in Latin America is explained on two levels: (a) proximate and measurable influences which are captured in the growth accounts; and (b) causes of a more ultimate character, that is, qualitative and institutional influences which are more difficult to measure.

The analysis of economic performance concentrates on the quantification of economic growth, long-run estimates of gross domestic product (GDP) growth and the measurement of factor inputs and total factor productivity. Another important element of this study is an international comparison with countries outside the region, both developed and developing. Maddison (1991: 11) defines proximate causes of growth as:

“...those areas of causality where measures and models have been developed by economists and statisticians. Here the relative importance of different influences can be more readily assessed. At this level one can derive significant insights from comparative macroeconomic growth accounts.”

Through growth accounting it is possible to identify and quantify the proximate causes of growth but no light is shed on the ultimate causes of growth. Growth accounting shows the contribution of factor inputs (capital, labour and land) and total factor productivity to output growth. For these quantitative growth accounts long-term GDP and capital formation series were required which permit analysis of GDP (*per cápita*) and labour productivity developments since 1900.

This kind of growth accounting exercise may serve different purposes such as explaining differences in growth rates between countries, illuminating the process of convergence and divergence, assessing the role of technical progress and calculating potential output losses. Growth accounting cannot provide a full causal explanation. It deals with proximate rather than ultimate causality and records the facts about growth components: it does not explain the underlying elements of policy or circumstance, national or international, but it does identify which facts need further explanation.

Ultimate causes are those factors related to economic growth which are difficult to quantify in economic or statistical models. They include the role of institutions, ideologies, pressures of socio-economic interest groups, historical accidents, and economic policy at the national level¹ (Maddison, 1991). They also involve consideration of the international economic order, foreign ideologies or shocks originating in friendly or unfriendly neighbours. The ultimate sources of Latin American performance are less clearly established than its proximate causes and constitute an extremely interesting area for further research. The contribution of this article to the understanding of the role of these ultimate sources in economic growth is only modest. It analyses some of the topics to be included in the realm of ultimate sources, such as the institutional set up, social capabilities and path dependency and the distribution of income and wealth.

It should be stressed that the proximate causes are not independent from the ultimate causes of growth. To a significant degree, proximate causes are dimensions through which ultimate causes can be seen to operate. However, the importance of interaction and interdependency between the different sources of growth is emphasised. At the proximate level the interaction between capital accumulation and technological progress is an example of this interdependence. At the ultimate level, there exists interaction between the institutional framework of a society and the implementation of economic policy. An example of interdependence between the ultimate and proximate levels is the relationship between technological progress and the institutional context.

¹ The analysis of these ultimate causes has been the domain of historians (e.g. Gibbon on the Roman Empire) or sociologists (e.g. Weber on the Protestant ethic).

II. Economic growth in Latin America in the 20th Century from a comparative perspective

The primary purpose of this paper is to provide a quantitative assessment of Latin American economic growth performance in the twentieth century. The growth performance of Latin America throughout this century is treated from a comparative perspective using growth rates of GDP, GDP *per cápita* and productivity. Our sample covers 8 countries of Latin America: Argentina, Bolivia, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. These had in 1998 a combined population of 410 million, equivalent to 80% of the region's total. They cover over 80% of the Latin American territory, and almost 90% of Latin America's GDP.

The sample was based on the availability of data and two major biases of the sample should be emphasised. First, it excludes several of the smaller countries of the Latin American continent. Second, it also excludes all 23 islands of the Caribbean which make up for around 5% of GDP in the area, and of which 15 have higher than average *per cápita* GDP.

The GDP growth rates, comparing Latin America with countries outside the region, presented in table 1 show a quite respectable performance by Latin America for the entire twentieth century. The slowest overall growth in Latin America was in Bolivia, with Brazil and Venezuela having the best performance. The medium performance group with average growth rates around 3.5% includes Argentina,

Chile, Mexico and Peru. A comparison of these results with countries of the sample outside Latin America shows that the average growth of 4.2 per annum was faster than the advanced and Iberian countries, both of which grew at an average of 2.8% a year. Growth in Latin America was slower than in the Asian group, which grew at 4.8% in the whole twentieth century.

Table 1
LATIN AMERICA: TOTAL GDP, 1900-1998
(Average annual compound growth rates)

	1900-1913	1913-1929	1929-1950	1950-1973	1973-1980	1980-1989	1989-1998	1900-1998
Argentina	6.4	3.5	2.5	4.0	3.0	-1.1	5.0	3.5
Bolivia	2.7	2.7	2.5	3.3	2.9	-0.3	4.3	2.7
Brazil	4.5	4.7	5.0	6.9	7.2	2.3	1.1	4.9
Chile	3.7	2.9	2.2	3.6	2.8	3.0	7.2	3.4
Colombia	4.2	4.7	3.6	5.1	5.0	3.3	3.7	4.3
Mexico	2.6	0.8	4.0	6.5	6.4	1.5	3.3	3.7
Peru	4.5	5.4	2.6	5.3	3.6	-0.7	3.5	3.8
Venezuela	3.3	8.2	5.9	6.4	4.1	0.0	3.6	5.2
Arithmetic average	4.1	4.1	3.9	5.4	4.8	1.5	4.0	4.2
Korea	2.0	3.0	0.7	7.5	7.1	8.7	5.9	4.5
Taiwan province of China	1.8	3.8	1.8	9.3	8.3	7.4	5.1	5.2
Arithmetic average	1.9	3.4	1.3	8.4	7.7	8.0	5.5	4.8
Portugal	1.7	0.6	2.6	5.5	3.2	2.5	2.7	2.8
Spain	2.3	2.4	0.1	6.1	2.1	2.8	2.2	2.7
Arithmetic average	2.0	1.5	1.4	5.8	2.7	2.7	2.5	2.8
France	1.7	1.9	0.6	5.1	2.8	2.2	1.7	2.4
Germany	3.0	1.2	1.4	5.9	2.2	1.9	2.4	2.8
Japan	2.5	3.7	1.1	9.6	2.9	4.0	1.6	4.2
Netherlands	2.3	3.6	1.5	4.7	2.4	1.8	2.8	2.9
UK	1.5	0.7	1.7	3.0	0.9	2.9	1.7	1.8
Arithmetic average	2.2	2.2	1.3	5.7	2.3	2.6	2.0	2.8
USA	4.0	3.1	2.6	3.7	2.1	3.0	2.4	3.1

Source: Latin America from Hofman (2000a), other countries from Maddison (1995); updated to 1998 with growth rates from the Organization for Economic Cooperation and Development (OECD) (1999) and the Taiwan Province of China, from Directorate General of Budget, Accounting and Statistics Executive Yuan (1999).

The 1950-1973 period was an golden age for the world economy. Almost all advanced countries grew very fast and also the Asian countries started their growth acceleration in this period. A notable exception is the USA which had its best performance at the beginning (1900-1913) and at the end of the 20th century. For the Latin American countries, however, the picture is more diverse. Several countries, Brazil, Colombia and Mexico, experienced fastest growth in 1950-1973, but some had better performance at the beginning of the century (Argentina, Peru and Venezuela) or at the end of the century, like Bolivia and Chile. Finally, there is a clear distinction between developing and advanced countries during 1973-1980. Growth performance deteriorated abruptly in all advanced countries after the Organisation of Petroleum Exporting Countries (OPEC) crisis, while the pace of growth remained high in Latin America and Asia.

The inter-war period was by far the worst in terms of total GDP growth for most countries in the twentieth century. Six countries (France, Japan, the Netherlands and Spain of the advanced countries, and Korea and Chile) experienced their lowest point in the 1929-1950 period, while the

United Kingdom, Germany, Portugal and Mexico had their low period from 1913-1929. Latin America, with the exception of Chile and Mexico, experienced its major crisis during the lost decade of the 1980s.² For the Asian countries 1900-1913 and 1929-1950 were the worst periods.

Table 2 shows the long-term *per cápita* growth record since 1900. The final years of the liberal world order (1900-1913) were years of prosperity for most countries in our sample. On a comparative basis with the rest of the world, it was the best period of the twentieth century for Latin America. On the contrary, *per cápita* growth was very low in the Asian developing countries, which grew at a rate of 0.6% before World War I. The Iberian countries grew at 1.3%, about the same rate as the more advanced European countries. The United States performed even better with a growth rate of 2.0%.

Table 2
GDP PER CÁPITA, 1900-1998
(Average annual compound growth rates)

	1900-1913	1913-1929	1929-1950	1950-1973	1973-1980	1980-1989	1989-1998	1900-1998
Argentina	2.5	0.9	0.6	2.3	1.4	-2.5	3.7	1.3
Bolivia	1.7	1.6	1.3	1.1	0.5	-2.4	1.9	1.0
Brazil	2.3	2.5	2.6	3.9	4.7	0.2	-0.6	2.5
Chile	2.4	1.6	0.6	1.4	1.2	1.4	5.6	1.7
Colombia	2.1	2.1	1.6	2.2	2.7	1.3	2.0	2.0
Mexico	1.9	0.1	1.6	3.3	3.5	-0.7	1.5	1.7
Peru	3.4	4.1	0.8	2.5	0.9	-3.1	1.6	1.8
Venezuela	2.3	7.3	3.8	2.6	0.5	-2.5	0.4	2.7
Arithmetic average	2.3	2.0	1.5	2.4	2.0	-1.0	2.2	1.9
Korea	0.8	1.3	-1.3	5.2	5.3	7.4	6.6	2.7
Taiwan province of China	0.4	2.1	-0.9	6.2	6.2	5.9	5.2	3.0
Arithmetic average	0.6	1.7	-1.1	5.7	5.7	6.6	5.9	2.8
Portugal	0.9	-0.1	1.5	5.4	1.3	2.6	1.4	2.2
Spain	1.6	1.5	-0.7	5.1	1.0	2.3	1.4	1.9
Arithmetic average	1.3	0.7	0.4	5.3	1.2	2.5	1.4	2.0
France	1.5	1.9	0.5	4.1	2.3	1.7	0.8	2.0
Germany	1.6	0.8	0.4	4.9	2.3	1.8	1.8	2.1
Japan	1.3	2.4	-0.2	8.3	1.8	3.4	2.0	3.1
Netherlands	0.9	2.1	0.3	3.4	1.7	1.3	1.6	1.7
UK	0.7	0.3	1.3	2.5	0.9	2.7	0.4	1.4
Arithmetic average	1.2	1.5	0.4	4.6	1.8	2.2	1.3	2.1
USA	2.0	1.7	1.5	2.2	1.0	2.0	1.2	1.8

Source: Latin America from Hofman (2000a), other countries from Maddison (1995); updated to 1998 with growth rates from the Organization for Economic Cooperation and Development (OECD) (1999) and the Taiwan Province of China, from Directorate General of Budget, Accounting and Statistics Executive Yuan (1999).

The period 1913-1950 can be divided into three different sub-periods with benchmark years in 1929, the year the Great Depression began, and 1938, the dividing point between the Great Depression and World War II. From 1913-1929, when the liberal world trading order broke down, the expansion of *per cápita* real income among different regions was quite similar, with Asia as the laggard. Latin America experienced fast growth during the first years of the twentieth century.

² This result, of course, depends on the periodisation, since the Great Depression in Latin America was rather short-lived, that by 1938 most countries were approaching, or were above the previous total GDP peak level. In the 1980s, the crisis lasted much longer, and several countries only recovered to pre-crisis levels at the end of the decade.

In the period 1929-1950 when growth was interrupted by the collapse of international trade and World War II, most areas suffered major setbacks and their growth performance was generally very poor, or as in the case of Asia,³ negative.

In contrast with most of the rest of the world, 1929-1950 were remarkably good years in Latin America. Unlike other areas, GDP *per cápita* accelerated. The engine of growth in Latin America during the 1930s was import substituting industrialisation. There is truth in the assertion that the Latin American countries that performed reasonably well during the 1930s were those which had large domestic markets and some industrial base prior to 1929, as was the case in Argentina, Brazil, Colombia and Mexico. One may conclude that a substantial domestic market and a degree of autonomy with regard to exchange rates, fiscal and monetary policy were conditions required for industrialisation in Latin America in the 1930s. Analysis of table 3, on comparative levels of performance, clearly reveals that the whole period 1900-1950 was, comparatively, a very prosperous one for Latin America. Its *per cápita* GDP increased somewhat compared to the United States while all other countries show a big relative decline. The figure for the Asian group fell from an average of 17% in 1900 to 8% in 1950. The Iberian level had fallen to 21% by 1950. Also, the advanced countries' level had fallen drastically. The detrimental effects of World War II on most countries, and the relatively sheltered position of Latin America, explain this performance to a great extent.

Since 1950, Latin America's performance has been systematically lower than that of most other areas. The period 1950-1973 witnessed great expansion in Latin America, with growth *per cápita* averaging 2.6% a year (faster than the 1.8 average for 1929-1950). However, most other areas had a golden age with a much greater acceleration of growth. Asian growth averaged 5.7% a year from 1950-1973, Iberia 5.3%, and the advanced European countries 4.7%. US performance was much more modest at 2.2% a year. Table 4 presents labour productivity in Latin America for the 1913-1998 period (1913 being the earliest year for which data were available).

In the post-war period, Latin America did not enjoy positive growth to the same extent as other countries which were enjoying reconstruction and catch up, rapid expansion of international trade and the commercial exploitation of a backlog of technological advances made during the war. An additional important factor in explaining Latin America's lackluster performance was the fact that Latin America had grown faster than any other region during the first half of the twentieth century and was thus much closer to its potential, while many other countries had much larger scope for recovery.

In 1973, the period of post-war expansion abruptly came to an end. The advanced and the Iberian countries settled into a much lower pace of growth. The Asian countries continued growing at extremely high average *per cápita* rates of above 5.0%. Latin America experienced first a modest slow down between 1973-1980, and then a complete collapse in the 1980s.

The crisis of the 1980s was triggered off by the rapid increase of interest rates in the international market and affected Latin America profoundly as many of its countries had rapidly increased their foreign debt in the 1970s when international liquidity was very high. The debt crisis forced them to reevaluate their development strategy and in many cases a more outward looking, private sector oriented strategy was adopted.

³ The Asian countries selected are, of course, not at all representative of Asia, and therefore summarising them as "the Asian case" is misleading. This is even more the case in the period before 1950 when Korea and the Taiwan province of China were colonies of Japan.

Table 3
LEVELS OF GDP PER CÁPITA, 1900-1998
(International 1980 dollars, USA = 100)

	1900	1913	1929	1950	1973	1980	1989	1998
Argentina	52	55	49	41	42	43	29	35
Bolivia	15	14	14	14	11	10	7	7
Brazil	10	11	12	15	22	29	24	20
Chile	38	40	39	33	27	28	26	37
Colombia	18	18	19	19	19	22	21	22
Mexico	35	35	27	27	35	42	33	33
Peru	14	17	25	21	23	23	15	15
Venezuela	10	10	24	38	41	40	26	24
Arithmetic average	27	28	28	29	31	34	26	28
Korea	19	16	15	8	16	22	35	47
Taiwan province of China	15	12	13	8	19	27	38	48
Arithmetic average	17	14	14	8	17	24	36	47
Portugal	25	22	16	16	33	34	36	40
Spain	43	41	40	25	48	48	50	55
Arithmetic average	34	31	28	21	41	41	43	48
France	55	52	54	44	68	74	73	71
Germany	58	55	47	37	69	75	74	76
Japan	23	21	24	17	64	67	77	75
Netherlands	74	64	69	53	71	74	69	74
UK	96	81	65	62	68	67	72	71
Arithmetic average	61	55	52	43	68	71	73	73
USA	100	100	100	100	100	100	100	100

Source: Latin America from Hofman (2000a), other countries from Maddison (1995); updated to 1998 with growth rates from the Organization for Economic Cooperation and Development (OECD) (1999) and the Taiwan Province of China, from Directorate General of Budget, Accounting and Statistics Executive Yuan (1999).

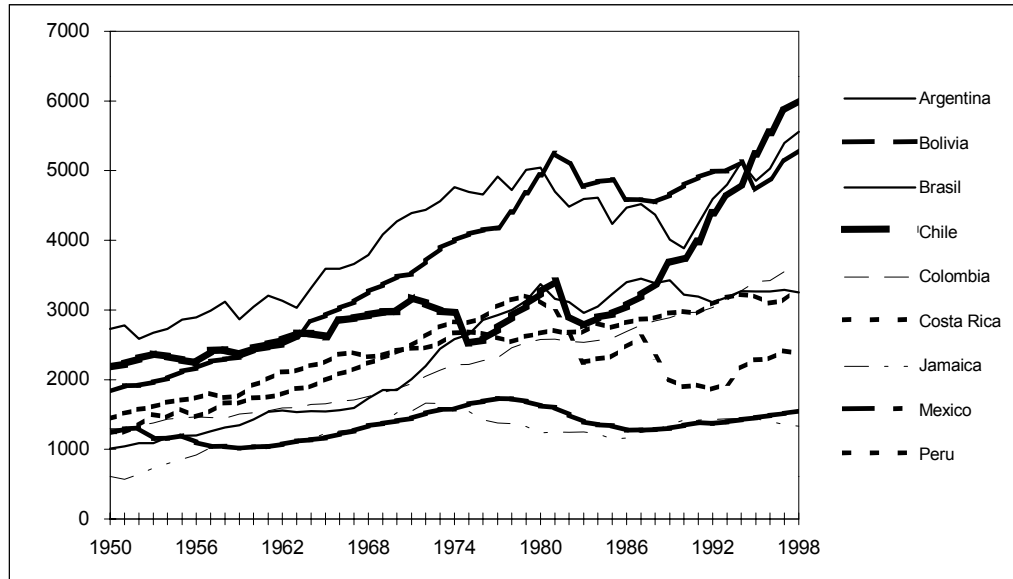
A. Convergence tendencies

In order to analyse whether the heterogeneity between Latin American countries has increased or decreased a check has been made for the sample of countries of the tendencies with respect to GDP *per cápita*. For a graphical inspection of convergence trends, figure 1 presents GDP *per cápita* for our 9 countries for the 1950-1998 period.

The concept we used to test the tendencies with respect to structural heterogeneity in the sample countries is convergence. The literature distinguishes different types of convergence:

- (i) Absolute convergence refers to the hypothesis that poor countries tend to grow faster *per cápita* than rich ones —without conditioning on any other characteristic of the economies. In the concept of conditional convergence the assumption that all countries have the same parameters and therefore the same steady-state position is dropped. Conditional convergence refers to the concept that an economy grows faster the further it is from its own steady state value.
- (ii) β -convergence refers to the concept that the poor countries tends to catch up with the rich one in terms of the *per cápita* level of income or product.
- (iii) The concept of s -convergence concerns cross-sectional dispersion, in this concept, convergence occurs if the dispersion, for example measured by the standard deviation of the logarithm of *per cápita* income across a group of countries, declines over time.

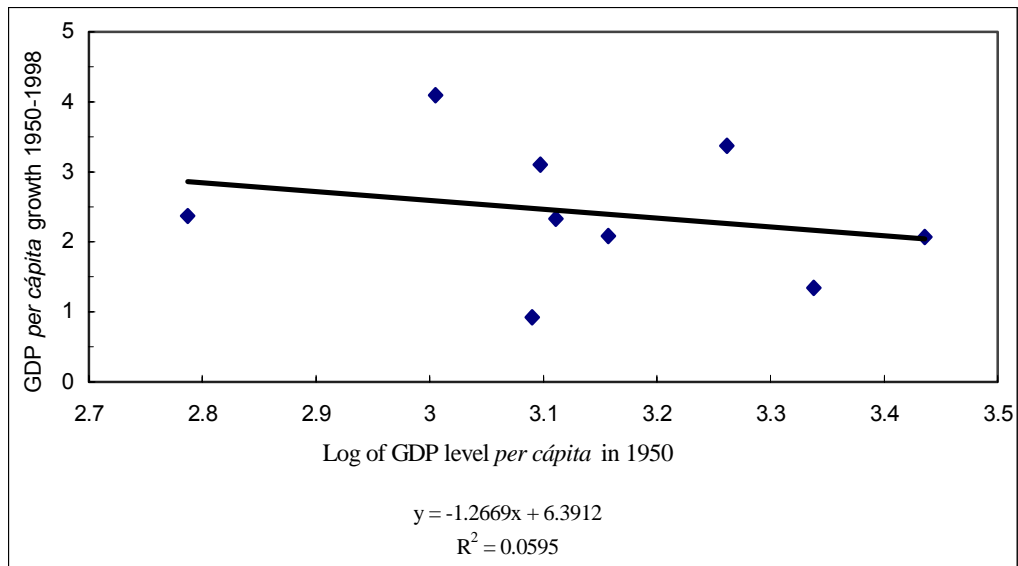
Figure 1
GDP PER CÁPITA, 1950-1998
 (1980 International dollars)



Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

In figures 2 and 3 we applied the formal tests for conditional β -convergence which relates the logarithm of GDP *per cápita* at the beginning of the period with the *per cápita* growth rate of the period. Figure 2, concerning the 1950-1980 base period, indicates a weak level of conditional β -convergence for our group of countries (insignificant on statistical grounds).

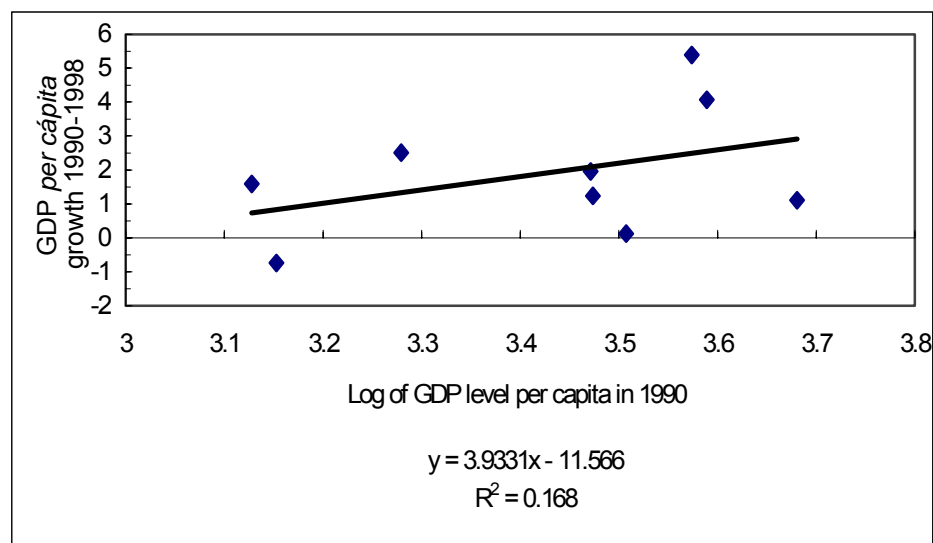
Figure 2
CONVERGENCE OF GDP PER CÁPITA, 1950-1980



Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

Figure 3 shows that no conditional β -convergence took place in the 1990s. This indicates to an increased heterogeneity between the countries of our sample in the post-crisis period and confirms at the country level what was found in terms of increasing heterogeneity at a more disaggregate level. Escaith and Morley (2000), using a larger sample of Latin American countries over the 1970-1996 period, could not confirm the presence of a significant β -convergence. Nonetheless, the data were consistent with s-convergence.

Figure 3
CONVERGENCE OF GDP *PER CÁPITA*, 1990-1998



Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

Barro and Sala-I-Martin (1995) state that the neo-classical model predicts that each economy converges to its own steady state and that the speed of this convergence relates inversely to the distance from the steady state. In other words, the model predicts conditional convergence in the sense that a lower starting value of real *per cápita* income tends to generate a higher *per cápita* growth rate, once we control for the determinants of the steady state.

In the endogenous growth theory several new elements have been introduced. One of the most important was the assumption of constant returns to production factors. Furthermore, new models have been developed regarding the incorporation of Research & Development (R&D), (creation and diffusion) and the assumption of imperfect competition. In these frameworks the long-run growth rate depends on governmental action, which were basically exogenous in the neo-classical framework.

B. Economic growth and reforms in Latin America

Our main interest in this section is the comparison of economic performance in the so-called post-crisis period and the 1990s with a base period in a selected group of countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Jamaica, Mexico and Peru). Latin America experienced steady economic growth in the three decades after the Second World War, total GDP growing at around 5%. This period is chosen as the base period against which we analyse the

developments in the 1980s and 1990s. The profound crisis of the 1980s revealed some of the structural weaknesses of the Latin American economic development and most countries of the region felt compelled to undertake structural reforms with the aim of creating more stable economies which would form a more integral part of the international context, and would be capable of significant and sustainable growth.

It is important to note that these countries have been selected on the basis of various criteria. A core group, Chile, Mexico and Bolivia with the longest experience in the implementation of structural reforms. It was also important to include some other large and medium sized countries, with shorter experience with the reform process, but some important conclusions can still be drawn. Costa Rica and Jamaica, from Central America and the Caribbean, have been selected to study the effects of size and geographical location.

Table 4
TOTAL GDP GROWTH IN SELECTED SUB-PERIODS
(Average annual compound growth rates)

	Base period	Crisis	Post-crisis		1990s
			Recovery	Growth	
Argentina	3.8	-1.1	10.1	4.5	5.8
Bolivia	3.5	-1.7	3.5	4.3	4.3
Brazil	7.0	1.3		2.4	1.8
Chile	3.9	1.4	5.2	7.6	7.7
Colombia	5.1	2.8		3.8	3.6
Costa Rica	6.5	0.2		4.0	4.0
Jamaica	5.5	-1.2		2.1	0.2
Mexico	6.5	1.0	2.4	3.3	3.1
Peru	4.9	-1.2	5.1	4.2	4.6
Arithmetic Average	5.2	0.2	5.3	4.0	3.9

Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

The results show that economic growth in the post-crisis period is somewhat lower than the growth rates experienced in the base period (5.2%). During the Lost Decade of the 1980s growth collapsed and growth rates in the post-crisis period are around a 4% average.

In table 5, growth of GDP *per cápita* is presented, which is an additional important performance indicator. Some important differences can be observed between tables 4 and 5.

1. *Per cápita* growth is very similar in the base period and the post-crisis period, with an average around 2.5%, as compared to bigger differences between periods in the total GDP estimates of table 4.

2. The fall in the population growth rate in the post-war period explains the difference between the results of total and GDP *per cápita* growth in terms of comparing base period and post-crisis period.

It is important to bear in mind that tables 4 and 5 present the arithmetic average of growth in the nine countries. However, the results shown above are rather sensitive to the weighting procedure used. Table 6 shows the results using as weights the proportion of each country's GDP in the total GDP of the sample. Base period growth amounts in that case to 6% and in the post-crisis period growth rates between 3 and 4% are found. In case of *per cápita* growth, the results are an average of 3.2 % growth in the base period and somewhat below 2% in the post-crisis period.

Table 5
GDP PER CÁPITA GROWTH IN SELECTED SUB-PERIODS
(Average annual compound growth rates)

	Base period	Crisis	Post-crisis		1990s
			Recovery	Growth	
Argentina	2.1	-2.6	8.7	3.2	4.6
Bolivia	1.2	-2.9	1.3	2.1	1.8
Brazil	4.1	-0.7		0.8	0.1
Chile	1.6	-0.2	3.5	5.4	6.1
Colombia	2.3	1.3		2.0	1.9
Costa Rica	3.1	-2.6		1.5	1.4
Jamaica	2.4	-1.5		1.2	-0.8
Mexico	3.5	-2.0	0.4	1.7	1.2
Peru	2.1	-2.7	3.3	2.4	2.8
Arithmetic Average	2.5	-1.5	3.5	2.2	2.1

Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

The basic unit of analysis used are countries and it seems therefore logical to give each country's reform process a similar weight as reflected in a simple average. When using a weighted average the results become very much influenced by the data of Brazil and Mexico as is shown in table 6. Therefore, the analysis in this paper will be based on the unweighted or simple averages of the countries.

Table 6
WEIGHTED GDP GROWTH IN SELECTED SUB-PERIODS
(Average annual compound growth rates)

	Base period	Crisis	Post-crisis		1990s
			Recovery	Growth	
Total GDP	6.0	0.8	4.9	3.4	3.2
GDP <i>per cápita</i>	3.2	-1.3	3.1	1.7	1.5

Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

However, what the averages do not show adequately is the fact that the relative performance of the countries between the periods has changed quite drastically. The three highest performers in the post-crisis period (Peru, Chile and Argentina) were very low performers in the pre-crisis period. Their average growth rate in the base period was 4.1%. This rate increased to 6.3% in the post-crisis growth period.

On the other hand, the high performers in the base period (Brazil, Mexico and Costa Rica) are among the lowest performers in the post-crisis period and are the countries with the highest deceleration of growth between the two periods. Average growth rates in the base period of these 3 countries was 6.7%, which falls to 3.8%.

Only Bolivia and Colombia show equivalent performances in both periods with medium to low growth rates. However, Colombia was also the least affected by the 1980s crisis. Jamaica is the country with the lowest performance of the sample group, in the base period (together with Argentina, Bolivia and Chile) as well as in the post-crisis period.

C. Productivity

In this part of the paper the evolution of labour and capital productivity growth will be analysed as well as the role of the residual in the growth process. One of the most important issues with respect to the economic growth is the role of technical progress in growth. It is important to evaluate the role of productivity and technical progress in comparison with previous periods. One of the major reasons for the implementation of the structural reforms was the rather disappointing productivity performance of Latin America in the past, especially in terms of total factor productivity.

The findings on labour and capital productivity reflect the other side of the coin compared to the findings with respect to factor accumulation. An important fall in labour productivity growth can be observed in table 7, which reflects the strong increase in labour inputs. At the same time the increase in capital productivity, which breaks the trend of low or even negative capital productivity of the past, reflects also the extremely low level of capital accumulation of the region.

Table 7

LATIN AMERICA: CAPITAL AND LABOUR PRODUCTIVITY IN SELECTED SUB-PERIODS, 1950-1998
(Average annual compound growth rates)

	Labour productivity (hours worked)			Capital Productivity		
	Base Period	Post-Crisis Growth	1990s	Base Period	Post-Crisis Growth	1990s
Argentina	2.5	2.9	4.3	-0.8	1.8	2.7
Bolivia	2.5	0.8	0.8	0.7	1.0	1.0
Brazil	3.9	1.0	0.4	-2.6	-0.3	-0.7
Chile	3.5	4.6	4.8	-0.3	1.3	0.9
Colombia	2.8	1.8	1.6	0.9	0.0	-0.2
Costa Rica	3.5	0.8	0.9	-0.7	-0.3	-0.6
Mexico	3.8	0.3	0.0	-1.1	0.9	0.7
Peru	2.9	1.3	1.6	-0.1	0.5	1.7
Average	3.2	1.7	1.8	-0.5	0.6	0.7

Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

The long-run growth rate of economies will increase with gains in capital and labour productivity and, more generally with gains in total factor productivity. In this sense, the interpretation of the results of table 8 is positive and point to a stable overall efficiency of the economy. A stable overall efficiency combined with an increase in capital accumulation could lead to higher growth rates in the Latin American countries.

Table 9 presents the contribution of the production factors, capital and labour, and total factor productivity to total GDP growth. The role of total factor productivity (TFP) growth remained stable, explaining 39% of GDP growth in the 1990s compared to 40% in the base period. It also reflects the change observed above between capital and labour contributions to economic growth as labour's contribution rose and capital's fell.

The interpretation of total factor productivity is still a matter of debate, the remaining residual includes advances of knowledge, it also picks up the net error (positive or negative) in the other estimates as well as the net contribution of other sources of growth for which no estimation was attempted. The step-by-step approach has been followed, starting with measurement of total factor productivity, including quantities of factor inputs and doubly augmented total factor productivity, which includes also the quality improvement of the factor inputs.

Table 8
TOTAL FACTOR PRODUCTIVITY IN SELECTED SUB-PERIODS

(Average annual compound growth rates)

	Total Factor Productivity			Doubly Augmented Total Factor Productivity		
	Base Period	Post-Crisis Growth	1990s	Base Period	Post-Crisis Growth	1990s
Argentina	1.5	2.4	4.0	0.6	1.6	3.2
Bolivia	2.0	1.2	1.2	0.9	0.0	0.0
Brazil	2.6	0.7	0.1	1.4	-0.2	-0.7
Chile	2.0	3.9	3.9	1.2	2.8	2.8
Colombia	2.4	1.2	1.1	1.4	-0.1	-0.3
Costa Rica	2.2	0.6	0.7	1.2	-0.4	-0.3
Mexico	1.8	0.9	0.7	0.5	0.0	-0.3
Peru	1.9	1.3	2.0	0.9	0.8	1.5
Average	2.0	1.5	1.7	1.0	0.6	0.8

Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

Table 9
**CONTRIBUTION OF PRODUCTION FACTORS
AND TOTAL FACTOR PRODUCTIVITY TO GDP GROWTH**

(As a % of total GDP growth)

	Base Period			Post-Crisis Growth			1990s		
	Labour	Capital	TFP	Labour	Capital	TFP	Labour	Capital	TFP
Argentina	18	43	39	24	30	45	9	23	68
Bolivia	19	24	57	49	23	28	49	23	28
Brazil	31	32	37	35	36	29	47	45	8
Chile	7	41	52	21	27	51	21	29	51
Colombia	24	29	47	26	41	32	27	43	29
Costa Rica	25	41	34	56	31	13	44	38	18
Mexico	19	53	28	32	39	29	35	42	22
Peru	23	38	39	40	28	32	37	20	42
Average	22	38	40	34	31	35	30	31	39

Source: Hofman (2000b), "Economic Growth and Performance in Latin America", Economic Commission for Latin America and the Caribbean (ECLAC), Serie Reformas económicas N° 54, Santiago de Chile.

The doubly augmented total factor productivity, which finally remains, can be considered as an approximate measure of the effect of disembodied technical progress on long-term growth, but it also includes other unmeasured influences, statistical and other errors. This productivity analysis makes it possible to estimate the contribution of capital and labour to economic growth and make an assessment of the relative importance of technical progress in economic growth before and after the reform period. Edwards (1995) indicates that recent growth models suggest that countries that are more open to the rest of the world exhibit a faster rate of technological improvement and productivity growth than countries that are isolated. This means that these countries should experience an increase in growth of total factor productivity.

III. Some ultimate causes of economic growth in Latin America over the long-run

There is a consensus among analysts that the origin of some of the most pressing problems of Latin America, for example unequal income distribution and macroeconomic instability, can be found in its history. The colonial period and the achievement of independence, which came rather early in Latin America compared to other developing regions, are important in understanding the Latin American reality. A short description is presented of some of the most important characteristics of Latin America especially in comparison with the United States, another ex-colony in the same hemisphere.

A. Institutions

The institutional set up and its relation to economic growth, a subject normally located in the sphere of the so-called ultimate causality, is extremely important and, in the case of Latin America, further study of the relationship between growth and institutions can be very useful. Institutions provide the incentive structure of a society and they comprise the formal rules, constitutions, laws and regulations; and informal constraints, the conventions, norms of behaviour and self-imposed codes of conduct, and their enforcement characteristics (North, 1993). In a historical context, the comparison between Latin America and the United States in terms of the institutional set up might explain part of the difference in performance.

North refers to the idea of path dependence, originated by David (1985) and Arthur (1988), and applied it to institutional evolution, indicating that once on a particular path, economies find it very hard to fundamentally change direction because of the built-in characteristics of institutions. His comparison between the institutional evolution of Spain and England and the consequences for the subsequent course of events in Latin and North America provides a striking illustration of the role of path dependency (see also North, 1990).

In this respect, the social capability⁴ that enhanced growth in the successful Asian countries, is deficient in Latin America. Social capability refers to different elements such as the adequacy of the institutional framework, the role of government in designing and implementing economic policy and the skill level of the population.

During the conquest and the colonial period, Spain was to a large degree isolated from the forces important to modernisation in the rest of Europe, especially in Northern Italy. The Renaissance and Enlightenment made possible recognition of men's ability to transform the forces of nature through rational investigation and experiment. But Spain retained, to a great extent, medieval thinking and medieval ways. The wars of Reconquest against the Moors had allowed the Castilian Crown to obtain great wealth. Agriculture, crafts and commerce took second place to armed conquest as sources of wealth in the eyes of both hidalgos (noblemen) and peasants. It was this way of thinking which induced the followers of Hernán Cortés and Francisco Pizarro to seek fame and fortune in the new world. This behaviour and its modern, rent seeking variant, is still, in many Latin American countries, an important component of the behaviour of economic agents.

In a comparison of institutional development in Latin America and the United States during their respective colonial periods, several features become clear.⁵ The level of interference by the colonial power was much lower in the case of the English than in the case of the Spanish. As Smith (1776) noted:

The Spanish colonies, therefore, from the moment of their first establishment, attracted very much the attention of their mother country; while those of the other European nations were for a long-time in a great measure neglected. (p. 612)

Spain deliberately followed a policy of total conquest, modelling the colonies on the institutional structure of Spain and destroying the indigenous political and cultural institutions, together with indigenous religion and architecture. The Spanish Crown established a centralised, hierarchical system with several viceroys⁶, who also had responsibility for appointing bishops and therefore exercised control over the Church. The authority of these viceroys was hardly challenged during the entire colonial period.⁷ Underneath this centralised structure there was a complicated method for dispensing favours, land mineral concessions and so-on, which made it important to be close to power and which partially explains the absentee character of landownership.

The labour relations established under Spanish colonial rule were of an extremely dependent, debt peonage, and oppressive character. This impeded practically all forms of labour mobility and stands in marked contrast to the conditions experienced by settlers in the English colonies, who were basically independent, working their own land.

The mercantilist restrictions imposed on Latin America by the Spanish were much tougher than those on English colonies. They confined all their trade by their colonies to a particular port in

⁴ A term introduced by Okhawa and Rosovski (1973) but emphasised especially by Abramovitz (1986, 1990).

⁵ The comparison by Adam Smith (1776) of colonies in the Western Hemisphere was not the first but he concentrated on economics while other comparisons, for example Buffon (1761), de Pauw (1768) and Hegel (1820) were more of a theological-philosophical nature (Annino, 1995).

⁶ Around 1800 Latin America was divided in the Viceroyalties of New Spain, New Granada, Peru and Rio de la Plata (Lynch, 1991).

⁷ Between 1535 and 1816 there was a steady succession of 60 viceroys in New Spain (Maddison, 1995).

the mother country; ships were obliged to sail from that port, in convoy at a particular season, or if on their own, only once a special license had been granted, which in most cases was very expensive. Trade was limited to a few ports in Latin America and Cadiz and Seville in Spain. The monopolistic character of this trade had very detrimental effects on prices, production and trade.⁸ The mercantile policy of Spain and Portugal practically prohibited the development of manufacturing industries in Latin America.

An important distinction between the English and Spanish colonies concerns the fiscal burden imposed upon them by the colonial power. There are very clear indications that taxes in the Spanish colonies were much higher than in the English ones. The Crown taxed the production of agricultural estates and mines by levying a fifth. Remittances of profits to Spain were quite high. In the case of the English colonies, taxes were much lower and basically trade related. There was a big difference in the style of government between the English and the Spanish colonies in the Americas. The English colonies of North America were split up into 13 virtually autonomous colonies, while the Spanish featured a highly centralised power structure, and their top officials had a sumptuous lifestyle.

One of the institutional arrangements that changed as a result of independence was the new ability to raise capital on the international financial market, which had been impossible during the colonial period. It is interesting to note, however, that all Latin American governments were in default by the end of the 1820s for a myriad of reasons. The colonial period did not prepare them for financial independence.

The transformation and the strengthening of the economies of Latin American countries occurred at different moments in their national histories, depending on the export commodities involved and their relative success in state building. Chile's economy was affected by overseas demand as early as the 1850s (copper exports to Europe and wheat to California), and Argentina and Brazil followed in the 1860s. These countries, along with Mexico, then felt the full impact of the combined effects of the European economic expansion, which, as far as Argentina and Brazil were concerned, triggered an unprecedented level of European immigration. Chile established a constitutional regime in 1833 and was widely admired in Spanish America for its stability. Mexico and Argentina were not to have stable regimes until the late 1860s.

B. The distribution of income and wealth in Latin America

The distribution of income and wealth in Latin America is extremely unequal in comparison with most of the rest of the world, and these levels of inequality have been persistent over time. The roots of this situation can be found in the distribution of land, mineral rights and education during the colonial period. The relationship between income distribution and economic growth has a long tradition in economic research. Recently one witnesses a resurgence of interest in the determinants of economic growth and its distribution. This resurgence has to do with fashion waves in the economic science but also with the development of better data bases with respect to economic growth and income distribution.⁹ Kuznets, one of the pioneers of empirical research and

⁸ However, these detrimental effects of mercantilism on Latin American production, trade and development should not be overestimated; see the careful summary in Cardoso and Helwege (1992), emphasising that mercantilism may not have been as important in slowing industrial and agricultural growth as the distorting nature of the mineral boom itself. They also stress that most European countries were extremely protectionist until the late nineteenth century. This makes it difficult to assess how much trade would have occurred in the absence of mercantilism.

⁹ Mention can be made of the work of Angus Maddison and Summers and Heston regarding long-run economic growth data and Deininger and Squire and Londoño and Szelekely regarding income-distribution data. Maddison and Summers/Heston facilitate international comparisons as they use purchasing power parities (PPP's), either on a expenditures or industry-of-origin basis. These PPP's are essential for accurate cross-country comparisons of real incomes and expenditures.

the apparent inspirer of this conference summarised his view on the relation between economic growth and inequality as follows:¹⁰

“One might thus assume a long-swing in the inequality characterising the secular income structure: widening in the early phases of economic growth when the transition from the pre-industrial to the industrial civilization was most rapid; becoming stabilised for a while; and then narrowing in the later phases...”

However, a recent overview article comes to the conclusion that the relationship between inequality and the process of economic development is far from being well understood and a call for further empirical evidence is made (Aghion, Caroli and García-Peñalosa, 1999). Special importance should be given to the econometric specification and the type of estimation used such as cross-country growth regressions, panel estimation or longitudinal time series.

A good starting point on income distribution in the world is the data base developed by Deininger and Squire (1996). They present decadal averages of inequality indexes across regions. The regional averages are unweighted means of country averages during the period under concern. Deininger and Squire distinguish between three groups of regions, with considerable variation of Gini coefficients within regions.

- i) Latin America and Sub-Saharan Africa. Inequality is highest in Latin America and Sub-Saharan Africa, with the average Gini reaching almost 50.
- ii) East and South Asia. East and South Asia are characterised by average Gini coefficients in the middle to upper 30s that range from a high of about 50 in Malaysia and the Philippines to less than 30 in the Taiwan province of China.
- iii) Industrial and high income developing countries. Gini coefficients in the low 30s characterise the industrial and high income developing economies.

As can be seen in table 10 the distribution of income and wealth in Latin America is extremely unequal in comparison with most of the rest of the world, and these levels of inequality have been persistent over time in Latin America whilst in other continents an improvement can be observed.

Table 10
DECADAL MEDIANS OF GINI COEFFICIENTS
FOR THE INCOME DISTRIBUTION, BY REGION 1960-1990

	1960s	1970s	1980s	1990s
Eastern Europe	22.76	21.77	24.93	28.60
South Asia	31.67	32.32	32.22	31.69
OECD and high income	32.86	33.04	32.20	33.20
East Asia and Pacific	34.57	34.40	34.42	34.80
Middle East and North Africa	41.88	43.63	40.80	39.72
Sub-Saharan Africa	49.90	48.50	39.63	42.30
Latin America	53.00	49.86	51.00	50.00

Source: Deininger and Squire (1996), “A New Data Set Measuring Income Inequality”, *The World Bank Economic Review*, vol. 10, No. 3, September.

Note: Regions are ordered by increasing inequality in the 1990s.

¹⁰ See Kuznets (1955-18).

The differences between regional Gini coefficients translates into large differences in the amounts or shares of income going to the rich and the poor. In the 1990s in Latin America, the top 5% of the population received 25% of total income on average, while the bottom 30% got only 7.5%. In Southeast Asia the top 5% received only 16% of total income while the bottom 30% got 12.2%; comparable figures for Africa are 24% and 10.1% respectively. In the developed countries, the top 5% got only 13% of total income while the poorest 30% got 12.7%. These shares imply that in Latin America the average income of the richest 5% is 20 times that of the poorest 30%. In Southeast Asia, the richest 5% have average incomes only 8 times those of the poorest 30% (Morley, 2000).

Some of the roots of this situation can be found in the distribution of land, mineral rights and education during the colonial period. Labour relations inherited from the system of landownership, which tied the workers and their families to the land, also caused very uneven initial conditions and proved to be a major obstacle to a more equal distribution of income. Education of the masses was completely neglected during the colonial period; Spain even tried to prevent the population from becoming literate because this was deemed dangerous for religious and political reasons. Two particular facets of the colonial period provide a partial explanation of the uneven income distribution in Latin America. Unequal income distribution was a legacy from the old colonial system of labour exploitation, with slavery in Brazil and peonage elsewhere. Restricted access to education was another cause of inequality, and was more important than in many Asian countries (Maddison, 1989).

Cardoso and Helwege (1992) describe the roots of inequality in Latin America as follows: “The colonial division of property had implications not only for the usage of land but for the political structure of the region as well. The *encomienda* system established a landed aristocracy that dominated political life for centuries and then shared power as industry displaced agriculture as the central economic activity. It established a sharp division between the haves and the have-nots, creating a class structure that is extremely bifurcated by comparison to other cultures. Problems of unequal income distribution and widespread rural poverty that face the region today are rooted in events of the sixteenth and seventeenth centuries.” Thus, the problem of inequality in income and wealth was inherited from the colonial period, in which the distribution of assets (principally land) favoured a concentration of income, and for most of the post-independence period the dynamics of the dominant model of economic development have either preserved the existing level of inequality or have exacerbated it (Bulmer-Thomas, 1994).

Building a long-term indicator of Latin American income distribution is very difficult because of huge methodological difficulties in comparing data in time and in space.¹¹ Following Kuznets (1955) most authors give the minimum requirements for a good income distribution indicator such as: (i) to be obtained from household survey; (ii) containing information on all income sources; (iii) unit of observation is the household or the individual and (iv) represents the national level. In table 11 Gini coefficients¹² are presented for the 1950-1997 period based upon a methodology of linking appropriate pairs of Gini coefficients.

Altimir (1987) describes these pairs which were selected on the ground that they are comparable with regard to the concept of income, the procedure used for measuring income and the geographical coverage of the surveys used to collect the data, as well as the units and criteria used by the respective authors in processing or adjusting the survey data (see also Altimir, 1997).

¹¹ Among those most mentioned are: underestimation of income that affects differently both income level and their concentration, the technique for measuring income and the geographical coverage of the surveys, see Altimir (1987) for a review and discussion of the income measurements from different types of surveys in Latin America and their comparability problems.

¹² The Gini coefficient is a measure of income concentration presented in the range from 0 to 100, the larger the coefficient, the greater the inequality. Thus 0 represents perfect equality and 100 represents perfect inequality.

A first step in the preparation of table 11 was the selection of a base period Gini for which there were reliable estimates of income distribution in the specific country. This base period Gini estimate was linked over time to the other available estimates. The results indicate that income distribution in Latin America in the post-war period either remained the same or worsened. The worsening of the income distribution was especially marked after 1980.¹³

Our discussion of the income distribution in Latin America is based principally on two sets of interrelated data bases. The first one is the new data set measuring income inequality of Klaus Deininger and Lyn Squire. The second one is an expansion of the Deininger/Squire data set for Latin America by Londoño and Székely.

Deininger and Squire (1996) do not find a systematic link between growth and inequality, but they do find a strong positive relationship between growth and poverty reduction. The new data set they elaborated enabled them to better account for the time series dimension of the data. This is important because making inference on longitudinal relationships such as the Kuznets hypothesis from cross-sectional data is questionable. Deininger and Squire conclude that the data provide little support for an inverted relationship between levels of income and inequality when tested on a country-by-country basis, with no support for the existence of a Kuznets curve in about 90% of the countries investigated.

Table 11

LATIN AMERICA: INEQUALITY IN PRE-TAX^a INCOME DISTRIBUTION, 1950-1997
(Gini coefficients around benchmark years)

	1950	1960	1970	1980	1990	1997
Argentina	39.6	41.4	41.2	47.2	54.7	43.9
Bolivia	n.a	n.a	n.a	53.4	43.0	45.5
Brazil	n.a	57.0	63.0	61.9	63.1	62.1
Chile	n.a.	48.2	50.5	52.6	52.0	51.5
Colombia	40.3	42.7	53.9	52.5	49.5	50.2
Mexico	55.0	60.6	58.6	51.9	57.3	56.3
Peru	n.a.	n.a.	48.5	43.0	44.9	46.9
Venezuela	61.3	46.2	49.4	42.1	44.2	45.1
Average Gini	49.1	49.4	52.2	50.6	51.1	50.2

Source: Oscar Altimir (1987), "Income Distribution Statistics in Latin America and their Reliability", *Review of Income and Wealth*, Series 33, No. 2, New Haven, Connecticut, June. Altimir kindly provided access to his extensive data base on income distribution. The estimates were made by Sebastian Herreros and the author. The 1950 estimate for Venezuela is a direct interpolation based upon estimates for 1944 and 1962 from Baptista (1991). The 1957 estimate (0.802) of Baptista (1991) was not used, because it seemed unreasonably high, especially compared with his 1962 estimate (0.462).

^a In the strict sense it is difficult, especially in the case of the Latin American countries, to differentiate between pre- and post-tax income distribution, again, see Altimir (1987).

An important additional finding of Deininger/Squire is that changes in the absolute income received by different quintiles reveal additional information that is not captured in our aggregate measure of inequality. In particular, although they do not find significant correlation between aggregate growth and changes in equality, there is a strong correlation between aggregate growth and changes in all the quintiles except the top one.

With respect to the relationship between income distribution and economic growth, Londoño and Székely summarise their results as follows:

¹³ It cannot be stressed enough that these estimates give only an indication of a broad tendency as the procedure involved linking series of different coverage, definition and quality.

“.....First, regarding macroeconomic performance, the decade of the 1970s was one of economic expansion, ending in 1981. The early 1980s were characterised first by recession and later by stagnation, while the 1990s show a recovery. Also income distribution improved substantially from 1970 to 1982 (the Gini was reduced by 5 points), while the 1980s coincided with a sharp deterioration in income distribution (the Gini peaked at 58.3 in 1990). With regard to the 1990s, the distribution of income seems to have fluctuated around the level registered in 1990. Therefore, contrary to expectation, income inequality has not improved during the recovery process....”

A reason why there has not been significant improvement during the present decade is that the individuals located at the lower tail of the distribution do not seem to have benefited from growth to the same extent as other sectors of the population.”

A study from the World Bank (2000) comes to similar conclusions:

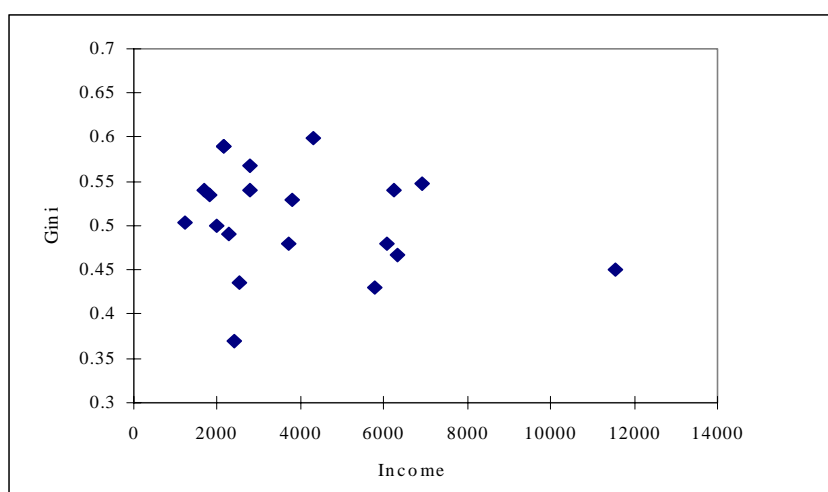
“.....Many studies show that on average there is no systematic relationship across countries between growth and summary statistics of income inequality such as the Gini coefficient.....”

.....other things being the same, growth leads to less poverty reduction in unequal societies than in egalitarian ones.....”

In contrast to the evolution of absolute poverty, there has been little change in income distribution in Latin America. High levels of inequality persist, and in several countries the concentration of income distribution is among the highest in the world. With very few exceptions, inequality has remained at high levels in the past decade, even in countries that have achieved high economic growth rates (ECLAC, 2000).

Figure 4 plots the level of *per cápita* income measured in constant purchasing power dollars against recent Gini estimates for some 20 Latin American countries. Disregarding some of the countries, which are outliers either on the income or on the distribution dimension, Morley (2000) concludes that the two variables do not demonstrate any relation at all.

Figure 4
THE RELATION BETWEEN INEQUALITY AND INCOME IN LATIN AMERICA



Source: Morley (2000), *La Distribución del Ingreso en América Latina y el Caribe*, Fondo de Cultura Económica and Economic Commission for Latin America and the Caribbean (ECLAC), Santiago de Chile.

C. Inflation

The issue of inflation has generated intense debate in Latin America, especially between the so-called monetarists and structuralists. The former see inflation as detrimental, and contend that a stable price level is a necessary condition for economic growth, whilst the structuralist school regards inflation as an inevitable by product of economic growth. Simonsen (1964) differentiates the monetarist and the structuralist school by the sign of the correlation between growth and inflation. For the structuralists this is positive while the monetarists expect it to be negative.

In comparative terms Latin American inflation has been higher than in Organisation for Economic Cooperation and Development (OECD) countries, particularly since World War II. One of the most interesting findings is the fact that the acceleration of inflation had started well before the 1950s. Table 12 presents the inflationary experience in the twentieth century of a sample of 17 countries, and shows that Latin America had the highest inflation of all regions in most periods. It also makes clear that the Latin American inflationary experience was, surprisingly, not very different from that of the advanced countries during the first half of the twentieth century. The advanced countries witnessed more or less the same levels of inflation before the Great Depression, and the acceleration of inflation during the 1938-1950 period was greater than in the case of the Latin American countries. However, with the exception of Japan (the country that had by far the highest inflation in this period), inflation in the advanced countries was somewhat less than in Latin America.

Table 12
EXPERIENCE OF INFLATION, 1900-2000
(Annual average compound growth rates)

	1900-1913	1913-1929	1929-1938	1938-1950	1950-1973	1973-1980	1980-1994	1994-2000
Argentina	n.a	2.2	-0.7	30.6	30.5	189.1	629.1	0.5
Brazil	-1.6	6.4	-0.2	12.3	31.6	47.0	748.6	15.6
Chile	7.3	5.1	6.5	16.4	48.6	236.2	22.3	5.7
Colombia	4.6	7.7	3.1	11.7	10.8	27.2	26.4	16.7
Mexico	5.3	2.9	2.2	10.0	5.7	22.5	58.9	21.6
Venezuela	3.0	1.7	-4.4	6.0	1.8	11.3	28.9	45.2
Arithmetic average	3.7	4.3	1.1	14.5	21.5	88.9	252.4	17.5
Korea					30.1	20.0	8.7	4.1
Taiwan province of China					7.2	13.0	3.2	2.8
Arithmetic average					18.6	16.5	6.0	3.4
Portugal					3.4	23.9	16.7	2.9
Spain					6.7	19.6	9.7	3.0
Arithmetic average					5.0	21.7	13.2	2.9
France	0.9	12.1	1.4	28.1	5.0	11.1	5.5	1.3
Germany	1.3	2.5	-2.2	3.8	2.7	4.8	2.8	1.4
Japan	2.8	4.8	1.2	82.4	5.2	9.7	2.1	0.2
Netherlands	1.1	2.0	-2.1	7.4	4.1	7.1	2.6	2.1
UK	0.9	3.3	-0.7	5.3	4.6	15.8	6.4	2.8
USA	1.3	3.1	-2.1	4.5	2.7	8.9	4.5	2.5
Arithmetic average	1.4	4.7	-0.7	21.9	4.1	9.6	4.0	1.7

Source: Maddison (1989), *The World Economy in the 20th Century*, Paris, Organisation for Economic Cooperation and Development (OECD), Development Centre; and International Monetary Fund (IMF), *International Financial Statistics*, various issues.

Note: For the Asian and the Iberian countries, no information for the pre-war period was available.

Table 12 shows that the big difference occurred after World War II when all areas, except Latin America, experienced a reduction in inflationary momentum. In the period 1973-80 inflation accelerated in all countries, with Latin America again recording the highest rates. While inflation abated in the rest of the world after 1980, Latin American inflation accelerated further. In the early 1990s, in the context of economic stabilisation and restructuring, most Latin American countries were able to drastically reduce their rates of inflation. In particular, Argentina and later Brazil which had recorded extremely high rates succeeded in stabilising their economies; Chile and Colombia reduced inflation even further, while in Mexico and Venezuela inflation increased somewhat. At the start of the Third Millennium inflation has gone down even further, reaching an average rate of below 7%.

D. From open to closed economies, 1929-1980s

Latin America's role in the world economy is a story of ups and downs. During the colonial period trade was officially limited only to Spain and Portugal, although smuggling became increasingly important. After independence there was freer trade and although initial political instability did not help the export sector, exports increased in some countries, for example Chile. Latin America's terms of trade also probably improved as prices of imports fell after the termination of the colonial monopoly.

At the end of the nineteenth and the beginning of the twentieth centuries, Latin America was relatively open to world trade, exporting primary products and importing capital goods and consumer durables. The Great Depression marked a change in trade history as, first, the de facto exclusion from the world market, and second, import substitution policies caused Latin America to turn away from international trade. More recently, as a result of the debt crisis but also due to severe problems with the import substitution strategy, there has been a renewed trend to use trade as an engine of growth.

In table 13, the export performance of Latin America, in terms of volume growth rates, is compared with other regions. At the beginning of the century Latin America's performance was similar to the rest of the world. The 1913-1950 period was much better for Latin America, among other reasons, because it was not that directly affected by the World Wars.

In the 1950-1973 period the export performance of Latin America in comparison with the rest of the world was poor. Latin America did not profit from the rapid expansion of trade opportunities, indeed Latin American trade barriers and protection were increased. The data presented for the 1973-1994 period were disaggregated in the case of Latin America to show somewhat higher overall growth rates in the 1980-1994 period. Argentina, Colombia and Venezuela had higher growth rates in 1980-1994 than in 1973-1980. Brazil had similar growth rates in both periods and Chile and especially Mexico had lower growth rates in the 1980-1994 period.

The last years of the 20th Century show an increase in the volume of exports in almost all countries. In Latin America the growth rate of export volume fell only in Brasil.

Table 13
VARIATIONS IN VOLUME OF MERCHANDISE EXPORTS, 1870-2000
(Average annual compound growth rates)

	1870-1913	1913-1950	1950-1973	1973-1994	1994-2000
Argentina	5.2	1.6	3.1	5.8	9.0
Brazil	1.8	1.7	4.7	8.9	3.9
Chile	3.4	1.4	2.4	8.8	8.8
Colombia	2.0	3.9	3.8	5.7	5.8
Mexico	5.9	-0.5	4.3	9.7	16.6
Venezuela	4.1	5.4	4.1	-1.9	3.8
Arithmetic average	3.7	2.3	3.7	6.2	8.0
Korea	0.0	-1.3	20.3	12.6	18.0
Taiwan province of China	4.8	2.6	16.3	10.8	6.6
Arithmetic average	2.4	0.7	18.3	11.7	12.3
Portugal	2.1	2.0	5.7	8.5	7.9
Spain	3.5	-1.6	9.4	8.2	3.0
Arithmetic average	2.8	0.2	7.5	8.4	5.5
France	2.8	1.1	8.2	4.4	7.5
Germany	4.1	-2.8	12.4	4.0	7.1
Japan	8.5	2.0	15.4	6.2	3.8
Netherlands	2.3	1.5	10.3	4.3	7.1
UK	2.8	0.0	3.9	3.9	6.8
USA	4.9	2.2	6.4	5.1	7.1
Arithmetic average	4.2	0.7	9.4	4.7	6.6

Source: Maddison (1995), *Monitoring the World Economy, 1820-1992*, Paris, Organisation for Economic Cooperation and Development (OECD), Development Centre, and International Monetary fund (IMF), *International Financial Statistics*, various issues; Maddison (2001), "The World Economy – A Millennial Perspective", Organisation for Economic Cooperation and Development (OECD), Development Centre, Paris, and ECLAC (Economic Commission for Latin America and the Caribbean) (2001), *Economic Survey of Latin America and the Caribbean*, Santiago de Chile.

IV. Conclusions

Economic growth in Latin America in this article is explained on two levels: (a) proximate and measurable influences which are captured in the growth accounts, and (b) causes of a more ultimate character, that is, qualitative and institutional influences which are more difficult to measure. The paper stresses the fact that the proximate causes are not independent of the ultimate causes of growth. To a rather significant degree, proximate causes are dimensions through which ultimate causes can be seen to operate. At the proximate level, the interaction between capital accumulation and technological progress is an example of this interdependence. At the ultimate level, there exists interaction between the institutional framework of a society and the implementation of economic policy. An example of interdependence between the ultimate and proximate levels is the relationship between technological progress and the institutional context.

The paper provides a quantitative assessment of Latin American economic growth performance in the twentieth century from a comparative perspective. Within the region it was found that heterogeneity has not decreased and no clear tendencies of convergence can be detected. The reform process of the late 1980s and 1990s was implemented because of the profound crisis of the 1980s and the detection of some structural weaknesses in the Latin American economies. Some aggressive and early reformers show impressive growth results (e.g. Chile) but on the whole the growth performance in the 1990s has been rather disappointing.

The paper concludes with a description of some of the most important characteristics of Latin America in the realm of the ultimate causes: institutions, income and wealth distribution, inflationary tendencies and the openness of the economies. In the paper, the interdependence between proximate and ultimate is mainly analysed in terms of growth. It is also shown that besides the unsatisfactory growth performance, equity aspects are another worrying characteristic of contemporary trends in the region. Institutional factors are probably key determinants in explaining the weak relationship between growth and equity.

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Methodological note

This note presents a brief formalisation of the model used in this paper and the derivation of four total factor productivity variants that were estimated. It also gives a description of the basic data used in the model.

A. Model

Description	Formula
In this growth accounting exercise a simple Cobb-Douglas function was applied	$Y = A L^{\alpha} K^{(1-\alpha)}$
Y represents GDP, L labour, K capital, A technical progress and α the factor share of labour. In its logarithmic version	$\ln Y = \alpha \ln L + (1 - \alpha) \ln K + A$
In the case of the production factors capital and labour quantity and quality of inputs was considered. The physical increase in labour was estimated by the increase in the amount of hours worked and the quantity increase in capital by fixed capital formation. The increase in quality of labour was estimated through the educational level of the population, measured as the growth rate of the years of education and through a vintage effect in the case of the capital stock. Having incorporated these effects four different measures of total factor productivity (TFP) can be differentiated. Equation (3) presents the most elaborate version in which L represents quantity of labour (hours), l labour quality	$\ln Y = \alpha \ln(L + l) + (1 - \alpha) \ln(K + k) + A$

Description	Formula
The 4 TFP estimates are (in a simplified annotation with growth rates, g):	
- Only physical increases in capital and labour	$A1 = g_Y - \alpha g_L - (1 - \alpha) g_K$
- Adding to the physical effects the quality effect of capital (capital augmented joint factor productivity).	$A2 = g_Y - \alpha g_L - (1 - \alpha) g_{(K+k)}$
- Adding to the physical effects the quality effect of labour (labour augmented joint factor productivity).	$A3 = g_Y - \alpha g_{(L+l)} - (1 - \alpha) g_K$
- Adding to the physical effects the quality effects of labour and capital (doubly augmented joint factor productivity).	$A4 = g_Y - \alpha g_{(L+l)} - (1 - \alpha) g_{(K+k)}$

B. Capital Estimation

A model layout for capital stock estimation was developed to make all procedures transparent and to facilitate the replication of these results by other researchers presenting the basic algebra involved in the procedures.

Description	Formula
The initial end-year gross capital stock was calculated as follows:	$GGI_t^i = a_t^i * GDP_t$ $GK_b^i = \sum_{m=b-\theta^i+1}^b GGI_m^i$
Where:	
- Gross increment to capital stock of asset i during period t	GGI_t^i
- Gross domestic product in t	GDP_t
- Gross initial capital stock of asset i at b	GK_b^i
- Ratio of total gross fixed investment of asset i to GDP at constant prices in t	A_t^i
- Initial year	b
- Length of life of asset i	θ^i
- Type of asset	i
- Time	t
Net mid-year capital stock was calculated as follows:	$D_t^i = \frac{1}{\theta^i} \sum_{m=t+1-\theta^i}^t GGI_m^i$ $NK_b^i = \sum_{m=b-\theta^i+1}^b \frac{(m - b + \theta^i)}{\theta^i} * GGI_m^i$
Where:	
- Depreciation of asset i during t	D_t^i
- Net initial capital stock of asset i at b	NK_b^i
The respective net and gross end-year capital stock series were calculated as follows:	$GK_t^i = GK_{t-1}^i + GGI_t^i - GGI_{t-\theta^i}^i \quad (t > b)$ $NK_t^i = NK_{t-1}^i + GGI_t^i - D_t^i$

Description	Formula
Where: - Gross capital stock of asset i at t - Net capital stock of asset i at t	GK_t^i NK_t^i
Finally, the formulas for total gross and net capital stock aggregation and total gross and net capital stock average age calculation are presented:	$AAGK_t^i = \frac{\sum_{m=t-\theta^i+1}^t (t-m)^* GG_t^i}{GK_t^i}$ $AANK_t^i = \frac{\sum_{m=t-\theta^i+1}^t \left(\frac{m-t+\theta^i}{\theta^i}\right)^* (t-m)^* GG_t^i}{NK_t^i}$ $GMK_t^i = \frac{GK_{t-1}^i + GK_t^i}{2}$ $NMK_t^i = \frac{NK_{t-1}^i + NK_t^i}{2}$ $TGK_t = \sum_{i=1}^n GK_t^i$ $TNK_t = \sum_{i=1}^n NK_t^i$ $AAGK_t = \frac{\sum_{i=1}^n AAGK_t^i * GK_t^i}{TGK_t}$ $AANK_t = \frac{\sum_{i=1}^n AANK_t^i * NK_t^i}{TNK_t}$
Where: - Average age of gross capital stock of asset i in t - Average age of net capital stock of asset i in t - Gross capital stock, mid-year t - Net capital stock, mid-year t - Total gross capital stock in t - Total net capital stock in t - Average age of total gross capital stock in t - Average age of net capital stock in t - Number of assets i	$AAGK_t$ $AANK_t^i$ GMK_t NMK_t TGK_t TNK_t $AAGK_t$ $AANK_t$ N

C. Data

1. GDP

As the output measure gross domestic product (GDP) at market prices was used because it is the most easily available aggregate for comparative purposes and also widely used in growth accounting, see Maddison (1987) for a comparison of different output measures. The series used for Latin America are derived from currently collected official estimates by ECLAC corresponding to the most recent revision of the United Nations System of National Accounts (SNA).

In order to compare levels of output, capital and income *per cápita* and productivity in different countries it is useful to have a unit (purchasing power parities (PPP)), which expresses the comparative value of their currencies better than exchange rates. The latter reflect purchasing power over tradable goods and services, and are subject to a good deal of fluctuations as a result of capital movements. In this study the results of the United Nations International Comparisons Project (ICP) IV were used which generated PPP for GDP and the different types of capital formation. The PPPs were expressed in “international dollars” 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 expenditure on GDP. The PPPs for Latin America were provided by Alan Heston of the University of Pennsylvania and former director of the ICP. These PPPs differ somewhat from the ones published in United Nations (1987) which contained some computational errors.

2. Employment

In order to analyse the labour market in Latin America some basic quantification is necessary. There are many institutes working on this theme, either regional like the former Programa Regional del Empleo para América Latina y el Caribe (PREALC), as well as in the different countries. A general source note is given which presents the data bases and other general information we used in common for all countries. Male and Female activity rates for 1950-1980 from the Comisión Económica para América Latina y el Caribe CEPAL (1985). These activity rates were calculated on the basis of population censuses and household surveys. However, the population figures of the Centro Latinoamericano de Demografía (CELADE) are adjusted for undercounting, especially for males, in the censuses. This adjustment causes small changes in total activity rates. We used ECLAC’s sexe-specific activity rates for the respective population and calculated the total activity rate. For 1990 I used population censuses when available. For Brazil and Colombia CELADE (1992) was used. The employment rates for 1950-1980 come from the Projections Center of ECLAC and are based upon population censuses. The 1990 estimate was elaborated by the author using population censuses.

Annual hours per person employed were calculated on the basis of the number of days worked per year and the average number of hours worked per day. Number of days worked during the year on the basis of public and statutory holidays from the International Labour Organisation (ILO) (1982), and estimated for missing years. The estimates for average years of formal education of the population between 15 and 64 years were estimated on the basis of the population census of the countries. In many cases the information of the census had to be adjusted which in generally has been done as follows:

In the case the census presented only data of educational level of 15 years and older the information of previous census was used to estimate the cohort 65-75 and the census was adjusted with this information. If information within the 50-64 was failing we tried to apply the same procedures. We adjusted for differences in the number of years in especially primary and secondary education. The first six years were considered primary education and the second six years secondary education. If, for example, Argentina has 7 years of primary education and 5 years of secondary than we considered the seventh year of primary as the first year of secondary etc. In case the census was not available; national sources, the World Bank data base on capital stock, which was kindly provided to us by the World Bank, or the estimates of Maddison (1989) were used.

3. Factor Shares

Factor shares are necessary in the calculation of total factor productivity, as each factor input has to be weighted by its respective factor share. The factor weights used in growth accounting affect the results of the exercises substantially, because rather big differences exist in growth rates of labour and capital stocks. The three main components of GDP are fixed capital consumption, compensation of employees and operating surplus. This last component must be divided between capital, labour and land income.

In Latin America an important part of the operating surplus, much more than in the advanced countries, consists of labour compensation for the self-employed and these earnings have to be attributed to labour's share. The total capital share has been disaggregated into the capital shares of its three components, residential and non-residential capital and machinery and equipment. In some growth accounting exercises, the individual items in the capital stock are weighted at their total stock value. However, the service flow per unit of capital in machinery and equipment is much higher than from a unit of residential capital. Therefore, the components of the capital stock have been weighted by their asset life, and the resulting disaggregated capital stock shares were multiplied by the national accounts total capital share. For the standardised capital shares the disaggregation of Maddison (1991) has been used. For land income, used as a proxy for natural resource endowment, it was impossible to obtain estimates for all countries and a 10% share was assumed for the whole period based on national accounts estimates available for some years.



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