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Latin America and the “High Performing Asian Economies”:  
Growth and Debt  
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# Latin America and the “High Performing Asian Economies”: Growth and Debt\*

## Abstract

Prior to the Asian financial crisis, it was accepted wisdom to compare the growth of Latin America unfavourably to that of a selection of East and Southeast Asian countries (the so-called High Performing Asian Economies). This paper presents statistics that indicate that the differences in performance may have been less than as commonly presented. A modified Harrod-Domar model is applied to the Latin American countries, and the results suggest that a major determinant of slower growth in Latin America was the debt service burden.

## 1. Introduction

The purpose of this paper is to consider the relative growth records of two groups of countries, eighteen in Latin America and the so-called High Performing Asian Economies (HPAEs),<sup>1</sup> which, if miracles no longer, have been famously presented as models of outstanding economic performance.<sup>2</sup> If something could be made true through repetition of the proposition, the hypothesis that the HPAEs put Latin America to shame by their economic record would be beyond challenge. It is said that the difference in growth rates has been vast, not only in recent years, but over decades. The difference in performance is usually attributed to fundamental differences in policy-orientation: that the HPAEs pursued “sound” macro “fundamentals” and “market-friendly” policies, while Latin American governments persisted with “closed economy”, import substitution regimes characterised by heavy state intervention.

This paper does not enter into the debate over the policies followed by the governments of the HPAEs, which have been worked over in some detail.<sup>3</sup> It considers the empirical issues, what does a detailed review of the evidence reveal about relative performances? Inspection of the statistics yields somewhat unexpected conclusions. Some of the oft-quoted “stylised facts” prove invalid: on average, fiscal deficits were not higher in the Latin American countries, and nor did government expenditure take a significantly larger share of national income. Further,

there is a clear difference in the behaviour of most macro variables (GDP growth, investment, and exports) in the 1960s and 1970s, compared to the 1980s and 1990s. This empirical evidence leads to an inspection of a variable that was statistically significant during crucial periods: the relative burden of external debt for the two regions.

A growth model is estimated in Section 3, whose use in simulating counter-factual outcomes suggests that a measure of debt service burdens is highly significant in explaining differences in the economic growth. It is calculated to be of importance equal to export growth and greater than domestic investment rates or foreign direct investment. On the basis of these results, it is concluded that to the extent that policy “mattered”, it was probably the accumulation of debt and the subsequent “Washington Consensus” demand compression which accounted for much, though not all, of the lower growth performance of the Latin American countries.<sup>4</sup>

## 2. A Comparison of the Evidence

### Growth and Exports

The conventional wisdom on the relative performance of Latin American and HPAEs is that the latter achieved an outstanding growth record compared to the former on the basis of a “orthodox” policy framework. This interpretation is succinctly stated by the World Bank:

What caused East Asia’s success? In large measure the HPAEs achieved high growth by getting the basics right. Private domestic investment and rapidly growing human capital were the principal engines of growth...[Growth performance] is largely due to superior accumulation of physical and human capital.

Fundamentally sound development policy was a major ingredient in achieving rapid growth. Macroeconomic management was unusually good and macroeconomic performance unusually stable, providing the essential framework for private investment. (World Bank 1993, p. 5)

In the same document, a comparison between the HPAEs and Latin America is made explicitly:

Since 1960, the HPAEs have grown...roughly three times as fast as Latin America...If growth were randomly distributed, there is roughly one chance in ten thousand that success would have been so regionally concentrated. (World Bank 1993, p. 2)

While it is unclear what is meant by “if growth were randomly distributed”,<sup>5</sup> that the HPAEs grew three times as fast as Latin America can be subjected to standard tests. The accepted method for assessing whether two populations have different characteristics is to calculate the mean of the same relevant variable for each group. Once this is calculated, one applies the well-known “difference of means” test, which, on the assumption of a normal distribution of sample deviations from the true mean, yields the probability that the mean value of the variable in question is different for the two samples.

It might be argued that the Latin American countries, on the one hand, and the HPAEs, on the other, do not strictly speaking represent “samples”, but rather the total population of each group; and, therefore, the difference of means test is not appropriate. This view is incorrect for at least two reasons. First, for statistical purposes, time series outcomes are treated as samples; i.e., they are one possible outcome of many.<sup>6</sup> All time-series statistical analysis is based on this convention (or, if one prefers, this fiction). The convention allows the calculation of standard errors of regression coefficients and their use for judging statistical significance. Second, and more practical, the difference in means exercise tests whether the two *geographical* groups can be treated analytically as *economic performance* groups. For this exercise, it is irrelevant whether the groups represent samples or populations. The question posed is: the HPAEs and Latin America are grouped by geography; if the members of the groups were mixed and a sample drawn from the pooled members, what is the probability that a random selection of these countries would be significantly different from either of those groups? Finally in defense of our tests, we note that they conform to the procedure of the World Bank, which must have used the same method to conclude that “[i]f growth were randomly distributed,

there is roughly one chance in ten thousand that success would have been so regionally concentrated' (World Bank 1993, p. 2).

For any such exercise the results one obtains are only as informative as the basis upon which the two populations are identified. In the World Bank "miracle" study, the HPAEs include Japan, Hong Kong, Singapore, Indonesia, South Korea, Malaysia, Taiwan, and Thailand. This list may be relevant for some analytical purposes. But, for purposes of comparison to Latin America, it is clearly inappropriate to include Japan. At the beginning of the 1950s, Japan had a per capita income lower than for the more developed Latin American countries, but by the 1960s was an emerging world economic power. If it were included in an analysis of the 1970-1994 period in the Asian group, which we focus upon, then the "Latin American" group might analogously include Canada or the United States. For other reasons, the inclusion of Hong Kong and Singapore for any comparison to Latin America is extremely dubious. There is little more *analytical* justification to include these city states in the Asia group than listing separately Sao Paulo and Buenos Aires in the Latin America group.<sup>7</sup> A central problematic of the process of development is the complex interaction between the rural and urban sectors, a problematic absent in these two Asian city-states.<sup>8</sup> The *inclusion* of the city states and Japan does not alter the outcomes the tests performed below,<sup>9</sup> and their exclusion contributes to analytical rigour. Finally on the issue of country inclusion or exclusion, it should be noted that the groups used here bias statistical outcomes in favour of exaggerating differences between the Asian and Latin American countries. The Asian countries are pre-selected as high performers, while all Latin American countries are included. This bias is included in this study in order to conform to the parameters of the mainstream discussion of relative economic performance of the HPAEs and Latin America.

With regard to data, we use the World Bank, *World Development Indicators* for all variables and countries, with two exceptions. Calculations of public sector expenditure and revenue for the Latin American countries is from the Inter-American Development Bank. Data for Taiwan, not provided by the World Bank source for political reasons, is from country documents.<sup>10</sup> With these points of definition and data sources made, we turn to Tables 1-8, all of which take the same form: at the top of each table the mean and standard deviation of a

variable are given for successive five-year periods, for Latin America and the HPAEs. These statistics are followed in subsequent rows by the absolute difference in the means between groups, the t-statistic to test for the difference in means, and the level of statistical significance (i.e., the probability that the group means are actually the same, the Null Hypothesis). Following usual practice, if the probability that the means are the same is greater than ten percent (.10), the Null Hypothesis is accepted (noted as “nsgn”, not significant).

Table 1 presents the statistics for the rate of growth of gross national product, measured in constant US dollars of 1987. First, it can be noted that over the thirty-five years, the mean for all Latin American countries was 3.4 percentage points below the mean for all HPAEs, both for GDP and per capita GDP.<sup>11</sup> While it is incontestable that the HPAEs grew faster, it is also the case that the difference in growth rates is not statistically significant at the standard ten percent level of probability, except for 1980-1984 for GDP, and 1980-1984 and 1990-1994 for GDP per capita. The measurement of the statistically significant difference in means provides insight. It indicates the periods in which the two groups of countries can be treated analytically as behavioural groups. This is clear, for example, for 1970-1964 and 1980-1984, which are represented in Figures 1a and 1b. Of the twenty-three countries during 1970-74, the three with the highest growth rates were in Latin America: Brazil, the Dominican Republic, and Ecuador, leaving Korea to take fourth place. Assume that in this period, the twenty-three had been pooled, and two randomly selected groups of five and eighteen countries created. The probability is overwhelming that the average growth rates of the two groups would have been virtually the same as for the groups selected on the basis of geography. On the other hand, during 1980-1984, the probability is that such a random selection of groups would have produced averages significantly different from the averages based upon geographic location. While the mean growth rates of the HPAEs were above the means of the Latin American countries, the dispersion of individual countries around their respective means suggests that before the 1980s *the two sets of countries could have been drawn from the same population* (the Null Hypothesis); selection on the basis of geography does not correspond to selection based upon performance.

**Tables 1a and 1b go here**

**Figures 1a and 1b go here**

The non-significance of differences in growth rates largely results from the uneven performance of the Latin American countries. In some time periods, some Latin American countries had strong growth performances, but no country had a strong performance across most or all periods. In each period there were Latin American “high performers”, but the high performer in one period not infrequently suffered low growth during another period<sup>12</sup> (perhaps a pattern to be repeated among the HPAEs in the late 1990s).

Central to the conventional wisdom story of the East Asian growth miracle is that the HPAEs exhibited extraordinarily high rates of growth of exports, and that it was this “outward orientation” that part explains the high GDP growth rates. Table 2 demonstrates this point, with an important caveat: *for none of the periods is the difference in means in export growth between Latin America and the HPAEs statistically significant.* This does not contradict that exports grew faster for the HPAEs. Rather, it indicates the great variation across Latin American countries, and over time for particular countries. In some Latin American countries exports performed well in some periods, while in others the performance was poor.<sup>13</sup> The same point applies to “open-ness”, measured by the share of exports in GDP (Table 3).<sup>14</sup> On average, the HPAEs had higher export-GDP ratios, *after the 1960s*, but for no time period does the t-statistic approach the required level for statistical significance. Inspection of country data shows that as late as 1970-1974 three of the five HPAEs had export shares below the *average* for Latin America (Indonesia, Korea, and Thailand). In the 1990s Indonesia’s percentage was below that of seven Latin American countries. This does not deny the greater export-orientation of the HPAEs, but suggests that judgements about relative “open-ness”, in the quantitative sense, need to be related to structural characteristics such as size of economies and composition of GDP.<sup>15</sup> In other words, to look at average values for indicators of the external sector and, on the basis of those averages, to draw conclusions, renders the export-oriented growth story too simplistic.<sup>16</sup>

**Table 2 goes here**

**Table 3 goes here**

Along with the emphasis on the greater outward orientation of the HPAEs has gone an equally strong supposition that rates of investment were extremely high in those countries. As quoted above, the World Bank (1993) cited high rates of physical capital investment as a “major engine” of miraculous growth (see also Kuznets 1988).<sup>17</sup> One finds that during the 1960s, when the HPAEs began their rapid growth, the investment rates for the two regions were virtually the same on average, with the Latin American mean slightly *higher* for both halves of the decade (Table 4).<sup>18</sup> In the 1970s, the HPAEs mean was above the Latin American, but non-significant. That is, variations within *both* groups were such that the measured difference could be without analytical significance with regard to geography. With the debt crisis, the situation changed: the difference in means increases in significance, falling below the ten percent probability for 1990-1994. On average for the fifteen years, 1980-1994, the investment rate in the HPAEs was considerably higher than for the Latin American countries, nine to thirteen percentage points, compared to two to three for the 1970s.<sup>19</sup> Thus, it appears that one cannot explain the higher *long-term* growth of the HPAE countries by *long-term* differences in investment rates (i.e., they were substantially higher for less than half the thirty-five year time period). Indeed, it is interesting to note that if one had inspected the statistics of the two groups in 1980, when most of the members of both were in the World Bank’s middle-income category, the observer would not have been struck by differences in investment rates.

#### **Table 4 Goes here**

Higher investment rates have been attributed to higher *savings* rates, with the implication that the latter facilitated the former in the HPAEs. This conclusion derives from a macro framework in which saving is treated in a full-employment, general equilibrium context. If one adopts a quantity constrained framework, then the level and rate of saving in national income is the *ex post* consequence of the rate of autonomous expenditure, of which investment is usually the major component. Several authors have argued that in the HPAEs, the high saving rates reflected retained earnings by corporations (Singh 1996), derivative from accumulation, and were not its cause.<sup>20</sup> The disagreement over causes may be academic, because the evidence shows that saving rates in the HPAEs were not significantly above those in Latin



America until the debt crisis (Table 5). As for investment rates, the share of saving in GDP was higher for the Latin American group during the 1960s, and only slightly lower for the 1970s.

**Table 5 goes here**

It might be argued that the investment rates prior to the debt crisis do not take account of investment being more growth-inducing in the HPAE countries, due to more market-friendly policies. Much of the critical literature on Latin American development in the 1960s and 1970s suggests that import substitution fostered excessive capital intensity, resulting in a higher capital-output ratio than in the HPAEs. As a result of the higher capital-output ratio, any level of investment in Latin America resulted in a lower rate of growth. Were this the case, it would imply that the “superior capital accumulation” (World Bank 1993, p. 2) in the HPAEs would refer not only to the level of investment, but also to its factor intensity. Such an argument could not, with analytical rigor, be based on calculations of observed capital-output ratios alone, because one must control for capacity utilisation. For example, in the 1980s when the mean growth rate across Latin American approached zero, calculated capital-output ratios would be distorted upwards. A study by the Institute of Developing Economies compared *unadjusted* capital-output ratios for Latin American and HPAEs for the 1960s and 1970s (Naya 1990, p. 174). The statistics indicate that the difference in means between even the unadjusted capital-output ratios for the two regions is not significant.<sup>21</sup>

### Macro Policy Indicators

The review of growth, export, investment and saving performance between the two groups of countries showed that while the indicators were stronger for the HPAEs, there was substantial variation within groups. This raises the question, were indicators of macroeconomic policy significantly different between the two groups, as some writers have maintained? Does the evidence support the conclusion that the HPAEs pursued “fundamentally sound macroeconomic policies” to an extent that Latin American did not?<sup>22</sup> Strictly comparable data on policy variables are limited, but they do exist for fiscal deficits, a key measure of “sound”

macroeconomic policy. In the orthodox view, slippage on the deficit results in inflation, which undermines exchange rate stability and discourages private investment, among other possible effects.

The evidence indicates that fiscal deficits in Latin America were not significantly different from those in the HPAEs; indeed, hardly different at all until the second half of the 1980s. This is shown for the overall fiscal deficit, in Table 6, which covers both the current and capital account (including the domestic currency equivalent of foreign debt service). There are no comparable data for the 1960s. The results for the 1970s show that Latin American fiscal deficits were slightly *lower* than for the HPAEs; i.e., when the HPAEs began their rapid growth (see Table 1), they ran, on average, slightly *higher* deficits than the Latin American countries. If small deficits gain good marks for fiscal management,<sup>23</sup> then the Latin American governments were on average better students of orthodox macroeconomics than the governments of the HPAEs in the 1970s, and not much worse in the early 1980s. The evidence on deficits implies that it is necessary to reconsider the argument that high inflation in Latin America resulted from the excesses of “populist” macroeconomics. Certainly, during some years some Latin American governments ran large fiscal deficits; but most did not.<sup>24</sup> The Latin American deficits exceeded those in the HPAEs by the greatest amount during the last two periods; that is, during and after Washington Consensus adjustment policies.

**Table 6 goes here**

As a further indication of sound macro policy in the HPAEs, it has been suggested that the size of the state in GDP has been notably small compared to other developing regions (Kuznets 1988). A smaller state, some argue, stimulates a more vigorous private sector by reducing “crowding out” and fostering private incentives *via* lower tax levels.<sup>25</sup> Whatever the merit of such arguments, state expenditure as a percentage of GDP has been virtually the same in both regions (Table 7A). The variation within regions is so great as to reduce the t-statistics to near zero. The perception that the Latin American region was characterised by large state sectors derives from a small number of countries, none of which maintained large ratios of public expenditure to GDP throughout the twenty-five years.<sup>26</sup> Inspection by country reveals that the share of total government expenditure in GDP was astoundingly low for many of the Latin

American countries. While none of the HPAEs had shares less than fifteen percent of GDP for all five time periods, there were three such countries in Latin America (Colombia, Guatemala and Paraguay). Further, government expenditure accounted for more than thirty percent of GDP in Malaysia during the last three time periods, and only two Latin American countries averaged over thirty percent in as many as two time periods.<sup>27</sup> With regard to the state as an investor in productive capacity, the Latin American mean was *lower* during the 1980s and 1990s (Table 7B), though the differences are not statistically significant.

**Tables 7a and 7b go here**

These statistics on deficits and government expenditure do not necessarily invalidate the conventional wisdom about the HPAEs having relatively small states. They indicate that conclusions cannot be drawn on the basis of simple calculations. Research has shown that both state expenditure and revenue are correlated with structural characteristics of countries, such as the importance of mineral production in the economy. Just as any conclusion about relative degree of open-ness should be based on adjustment for size of country (the most obvious influence), so should conclusions about the relative size of the state be derived from an analytical framework.<sup>28</sup>

**Debt Service between Groups**

The discussion to this point suggests a need for an analytically nuanced approach to the causes of the differences in economic performance between the HPAEs and the Latin American countries: 1) the HPAEs grew faster on average, with stronger export performance, but statistical tests suggest considerable variation within each group; 2) available measures of fiscal performance indicate little difference between the two groups (even on the basis of simple averages with regard to dispersion); and 3) the difference in performance between the two groups was greater after 1980 than before. These results indicate that two analytical steps might be fruitful: 1) disaggregation of the Latin American countries; and 2) inspection of debt burdens.

Table 8 provides the statistics on debt service as portion of export earnings. Even without disaggregation, the differences are substantial, averaging eleven percentage points cross all five periods. A clear pattern presents itself, with the difference in debt service high and rising during 1970-1984, then sharply narrowing in the second half of the 1980s. The sharp reduction in the difference between the two groups was the result of an increased debt service burden for the HPAEs (especially for Indonesia),<sup>29</sup> and a decline for the Latin American countries in part due to debt rescheduling. The group average for Latin America conceals great variations. We divide the eighteen countries into three sub-groups: those whose ratio of debt service to GDP averaged over thirty percent across the five periods (“highly indebted”, seven countries); those whose average lay between twenty and thirty (“moderately indebted”, six); and those whose average was below twenty (“lowly indebted”, five).<sup>30</sup> The first group accounted for seventy-five percent of the Latin American population in the mid-1990s, and the second group for eighteen percent. Thus, the vast majority of Latin Americans lived in highly-indebted countries. For the HPAEs, Taiwan is excluded, because it had virtually no external debt during the twenty-five years. Among the remaining four, only Indonesia would marginally qualify as “moderately indebted” by our definition.

For the high debt countries, debt service as a proportion of export earnings was significantly higher (ten percent probability or lower) than for the HPAE countries during three time periods: 1975-1979, 1980-1984, and 1990-1994, and quite close to the ten percent probability during 1970-1974.<sup>31</sup> Somewhat surprisingly, the highly indebted Latin American countries had a *relatively* greater debt burden compared to the HPAEs in the 1970s than the 1980s. Indeed, in the second half of the 1980s, the difference in debt burdens between the Latin American highly-indebted countries and the HPAE was less than in the first or second half of the 1970s. This point takes on importance in the discussion of growth, below. A casual inspection of Tables 1 and 8 suggests the possibility of a causal relationship between the debt burdens of the two groups of countries and growth performance, though not a simple one. It is this relationship that is investigated in the following section.

**Table 8 goes here**

### 3. A Growth Model for Latin America

The evidence presented in the previous section established that the *average* difference in growth performance of the Latin American countries and the HPAEs was substantial. It also demonstrated that variations around the averages were substantial. These results suggest that an understanding of growth performance of the two groups does not reveal itself through *ad hoc* comparisons outside a theoretical framework. As a first step towards an analytical treatment, the growth performances of each region are inspected for their pattern over time. To do this, both time series are regressed against dummy variables for years, the purpose of which is to inspect whether they move together. To the extent that they move together, their performances can be interpreted as reflecting in part world market conditions that influenced the growth of both groups of countries.

Figure 2 shows the result of the regression exercise, and for each region the value for a particular year can be interpreted as that year's deviation from the average growth rate of the group for the period as a whole (1970-1995).<sup>32</sup> From 1970 through 1982, the growth pattern is quite similar for the two groups, with the Latin American relative decline considerably greater in 1981 and 1982. However, after 1982 (the year that marks the debt crisis), the two diverge; indeed, during 1984-1995 they are negatively correlated.<sup>33</sup>

#### **Figure 2 goes here**

To move from the descriptive presentation in Figure 2 to an analytical and explanatory discussion, one needs a growth model, which places economic variables in an analytical context. The basic Harrod-Domar framework provides this. The rate of growth of aggregate supply (“warranted” rate) is:

$$(1) \quad y_w = \beta \eta^* \tau$$

where  $\beta$  is the full-capacity output-capital ratio,  $\eta^*$  is the desired (*ex-ante*) investment-national income ratio, and  $\tau$  is technical change.<sup>34</sup>

A partial adjustment to equilibrium is assumed, which converts the warranted rate to the actual rate. The actual investment ratio in any period is the product of that ratio in the previous period and the ratio of the desired rate and the actual rate in the previous period, with an exponential adjustment coefficient:

$$(2) \quad \eta_t = \eta_{t-1} [\eta_t^* / \eta_{t-1}]^\theta$$

where  $\eta_t^*$  is the desired I/GDP and  $\theta$  is the reaction coefficient (greater than zero and less than one).

We assume that in the Latin American countries the main constraint on capacity utilisation was imports, due to the import-dependency of production, both in industry and agriculture. Thus, the desired investment ratio is determined by anticipated capacity utilisation, which is predicted by the rate of growth of imports.

$$(3) \quad \eta^* = \eta^*(m)$$

where  $m$  is the rate of growth of imports.

Over time the capacity to import is determined by the rate of growth of exports ( $x$ ). This specification, standard in growth literature in the Keynesian tradition, is a variation on that proposed by Kaldor, as an open-economy extension of the Harrod-Domar model (Kaldor 1979).<sup>35</sup> The proportion of export earnings that can be used to import is reduced by foreign debt service payments (FDS/X). On the other hand, a further source of import finance is foreign investment (FDI/Y), either directly (foreign investors importing machinery, for example) or indirectly (increased foreign exchange in the banking system). Thus,

$$(4) \quad m = m(x, \text{FDS}/X, \text{FDI}/Y)$$

The marginal capital output ratio in any period is determined by the prevailing technology and capacity utilisation. The former is taken as given and the latter as determined by imports; i.e., like desired investment, the actual capital-output ratio is import constrained. Thus,

$$(5) \quad \beta = \beta(m) = \beta(m(x, \text{FDS}/X, \text{FDI}/Y))$$

The change in the prevailing technology is approximated by inflows of foreign direct investment. In other words, it is assumed that technical change is primarily the result of the international spread of innovations through foreign investment.

$$(6) \quad \tau = \tau(\text{FDI}/Y)$$

Substituting, we obtain, for the actual rate of growth:

$$(7) \quad y = [\beta(m(x, \text{FDS}/X, \text{FDI}/Y))]^{(1-\theta)} [\eta_{t-1}]^{(1-\theta)} [\eta^*(x, \text{FDS}/X, \text{FDI}/Y)]^\theta [\tau(\text{FDI}/Y)]$$

Collecting terms and converting to logarithms, one obtains the functional form for empirical estimation, using gross domestic product as a proxy for net national income and gross investment for net investment ( $\eta_{t-1} = (I/\text{GDP})_{[\text{lagged}]}$ ),

$$(8) \quad \ln[y]_t = \alpha_0 + \alpha_1 \ln[I/\text{GDP}]_{[\text{lagged}]} + \alpha_2 \ln(x)_{[\text{lagged}]} + \alpha_3 \ln[\text{FDS}/X]_t \\ + \alpha_4 \ln[\text{FDI}/\text{GDP}]_t + \varepsilon$$

Predicting that,  $1 > \alpha_1 > 0$ ,  $\alpha_2 > 0$ ,  $\alpha_3 < 0$ , and  $\alpha_4 > 0$ . The model implies the lag for the investment ratio. The lag for export growth is also implied, since foreign exchange reserves determine import capacity. Debt service enters for the current period, because its present absolute amount is known from contractual obligations. If exports are exogenous and predicted by agents on the basis of anticipated growth of the world economy, and debt payments are contractual, the debt service ratio (FDS/X) would be predicted subject to stochastic errors. For foreign investment, it is assumed that the capital enters simultaneously with the imports it finances.

As the model is specified, the coefficient  $\alpha_1$  is one minus the reaction coefficient; i.e., if the actual investment-national income ratio is always equal to its desired value,  $\alpha_1$  would be zero. Two points about the model need be clarified. First, the coefficient  $\alpha_1$  is predicted to be positive, but close to zero; it is *not* the margin output-capital ratio, but the adjustment coefficient. Second, simultaneity between the independent and dependent variables is avoided through the lags implied by the theoretical specification of the model (see Table 9 for details of the lag structure).

The model is estimated over the eighteen Latin American countries, with the data calculated for the same five-year periods as in the tables in the previous section (beginning with 1970-1974). All time periods, even annual data, are to some extent arbitrary. Annual data are not used because the independent variables impact on growth over several years. These particular five-year time periods have analytical justification. The initial one covers the first oil shock, and ends before the countries had time for substantial adjustments to it (1970-1974).

The second covers the accumulation of large external debts in response to the oil shock and stops before the decline in primary product prices that would come in the early 1980s. The 1980-1984 period was characterised by a recession in the world economy, rising real interest rates, and near-default on its debt by Mexico. The second half of the 1980s closely coincides with the implementation of “Washington Consensus” macro policies in Latin America, and the final period brought a relatively more favourable international environment with declining real interest rates and expansion of the OECD countries. The time series ends in 1994 for two reasons. First, there is the analytically trivial convenience that data are incomplete for the last years of next period, 1995-1999. More important, our purpose is to investigate the growth rates in Latin American and for the HPAEs during the so-called miracle period. To carry the analysis into the second half of the 1990s would be to include the Asian financial crisis, which began in 1997.

Three of the Latin American countries were involved in serious armed conflicts during one or more periods: El Salvador (1980-1984, 1985-1989), Nicaragua (1975-1979, 1980-1984, and 1985-1989), and Peru (1985-1989). Two others, Chile (1970-1975) and Panama (1985-1989), suffered from severe political instability and military intervention. These effects are proxied by use of a “conflict” variable that takes the value of unity in affected periods.<sup>36</sup>

The result of the estimation is reported in Table 9. The model accounts for thirty-nine percent of the variation in growth rates across the eighteen countries, with the explanatory variables significant and of the predicted sign.<sup>37</sup> While the model explains less than half of the variation in growth, this statistic would not in itself indicate poor performance unless there were evidence of omitted variables. The constant term is non-significant, which is consistent with there being no variables implied by the model which are omitted. The coefficient on the investment term is close to zero, implying an almost complete adjustment to its equilibrium value each period. This is to be expected for five year periods. The debt service variable is significant at less than one percent probability and of the predicted sign (negative). Both export growth and foreign investment show their predicted signs.<sup>38</sup> The significant conflict variable indicates that, other things constant, conflict reduces growth by about 3.5 percentage points.

**Table 9 goes here**



The purpose of the model is to evaluate the importance of debt on growth in Latin America. To test for the relative importance of the different variables, counterfactual questions are posed: what would have been the growth performance of the Latin American countries if for the each period they had had the same export growth, investment rates, and debt service as the HPAEs? And, which of these variables appear most decisive in explaining the differences in growth rates between groups? The counterfactual simulation is summarised in Table 10. The baseline of the simulation is that the actual difference in rates of growth between the HPAEs and Latin America was 4.3 percentage points for 1970-1994 (7.3 percent minus three percent).

Both parts of the table are divided by columns into time periods, with the simulated effects of the variable in rows. The first four rows give the net change in the growth rate associated with each explanatory variable when HPAE values are substituted for the Latin American values (summed in “sub-total 1”). The effects of the explanatory variables are then added to the “conflict” effect, to give the “sub-total (2)” row. This sub-total is then added to the actual Latin American growth rate, to give the “Total” row. The numbers in the “Total” row can be interpreted as the counterfactual rate of growth of the Latin American countries, assuming that they had investment rates, export growth, debt service, and foreign direct investment at the levels of the HPAEs (and no conflict). The final row is the “residual”, the difference between the counterfactual and the actual HPAE growth rate for each period.

Numerical substitution shows that taken together, the HPAE values would, on average across all countries for all twenty-five years, have raised growth rates from 3.0 percent per annum to 5.8, almost three percentage points (Table 10A and Figure 3, by time period). The difference between this and the actual HPAE growth rate is 1.5 percentage points (shown as a negative number at the both of last column). The simulation results confirm some generalisations about growth rates in Latin America and for the HPAEs: had Latin American investment rates, export growth, and foreign investment been at the HPAE level, the increase in the growth rate would have been substantial. However, they suggest that the role of debt has been under-emphasised in comparisons of the two regions. For the twenty-five years, the largest counterfactual element is debt service, slightly higher than both the investment and export effect. Reading across time periods, we see that debt service was in a virtual tie with the export effect

for greatest importance during 1970-1974 (at over 40 percent), and the largest component during 1975-1979 and 1980-1984. Investment, stressed by numerous commentators as a key variable explaining the HPAE rapid growth, proves most important only in the last period.

**Figure 2 goes here**

In absolute percentage terms, debt service is most important during the 1970s (Table 10B), a somewhat unexpected result. This is easily explained. During this decade, the difference in investment rates between the two groups of countries was considerably less than for the 1980s, so the difference in growth could not be explained by this variable. On the other hand, the difference in debt service ratios was proportionately higher. In the 1970s, the Latin American countries were distinguished from the HPAEs by their higher debt service, not by lower investment rates; it was in the 1980s and 1990s that the difference in investment rates became substantial. Despite that the overall debt impact *on Latin America* may have been greater in the 1980s than in the 1970s, *when compared to the HPAE countries*, debt is simulated as relatively more important in the 1970s. The relatively low simulated impact of debt in the 1980s may also be explained by demand compression policies during that decade overwhelming the variables in the model, a possibility discussed below.

**Table 10 goes here**

**Table 11 goes here**

The contribution of each counterfactual component is calculated by country in Table 11, with the countries listed by category of debt burden (shown graphically in Figure 4). For the seven highly indebted countries, debt service accounts for at least one percentage point of growth, being greatest for Argentina and Mexico (1.5 and 1.7 respectively). In the case of the latter, the counterfactual exercise estimates that if Mexico's debt service ratio had been the same as for the HPAEs over the twenty-five years, its GDP would have been fifty percent higher in 1994 than the actual level. For all seven of the highly indebted countries (seventy-five percent of the Latin American population), GDP would have been thirty-six percent higher with the HPAE debt level. Only for Bolivia among these countries is debt service not the largest of the four effects. This is in contrast to the lowly indebted countries. All but one (Honduras) had

debt service lower than the HPAE average. These countries accounted for about seven percent of the Latin American population in the 1990s.

**Figure 3 goes here**

Finally, for emphasis Figure 5 shows only the debt effect, by country. Looking back at Table 10, it can be speculated that the simulation exercise may understate the full effect of debt. The “residual” in Table 10, which is thirty-five percent for the entire period, may reflect what De Pinies calls “overadjustment” (De Pinies 1989): demand-depressing monetary and fiscal policies implemented to reduce imports in order to generate trade surpluses.<sup>39</sup> We have not directly tested for whether the Latin American countries were demand constrained during all or part of 1970-1994, and it is difficult to do so in a theoretically unambiguous manner.<sup>40</sup> However, two considerations suggest that a considerable part of the residual could be associated with demand-compression. The two periods when the residual was greatest in absolute terms, 1980-1984 and 1985-1989, cover the years when the “Washington Consensus” policies were implemented throughout the region. An emerging consensus on the “Consensus” maintains that the policy package was damaging to growth.<sup>41</sup> Further, inspection of the residuals shows that they are highly correlated with the actual growth rate: as the actual growth rate rises, the unexplained residual declines across periods.<sup>42</sup> There is no statistical reason to expect this result, but quite compelling analytical ones. The residuals can be interpreted as proxies for a specific policy difference between Latin America and the HPAEs: the former pursued demand compression policies, while the latter did not.

**Figure 4 goes here**

The model cannot itself identify what part of the residual represents demand compression. It would be reasonable to assume that compression was greatest during 1980-1989. If we make the strong assumption that there was no demand compression during the other periods, then the “demand effect” can be approximated by the difference in the residuals between 1980-89 and the other three periods. This yields a net demand effect of .65 percentage points for the entire twenty-five years.<sup>43</sup> This added to the direct effect of debt service (which is .77 percentage points, see Table 10) raises the total effect of debt to 1.42 percentage points of growth for the period as a whole, and reduces the “non-debt residual” to .87 (1.52 minus .65). Even this estimate may not capture all indirect debt effects. It is well-

recognised in the literature that high debt service burdens, and the adjustment policies associated with them, tended to depress private investment (Rodrik 1990 & 1996). Therefore, part of the difference in investment rates between the HPAEs and Latin America might be the result of the latter's higher debt burden, and the same would apply to direct foreign investment. Indeed, it is possible that some of the slower export growth in Latin America might be explained by debt, which restricted imports required by export sectors.

To estimate the effect of debt on each explanatory variable, the same calculation is made as for the residual: it is assumed that debt itself had no depressing effect on investment (domestic and foreign) and exports, except during 1980-1989. The difference between the values of the variables during this ten years and during the other periods is assumed to be the impact of debt (see appendix). The 1980-1989 effects are averaged over the entire twenty-five years, and the result presented in Table 12. By this calculation, the total debt effect for the twenty-five years is 1.84 percentage points, which is over forty percent of the actual difference in growth between the HPAEs and the Latin American countries. Because it was assumed that debt had no indirect effect on the residual or explanatory variables during three periods, the 1.84 percentage points can be viewed as a conservative estimate. Particularly questionable is the assumption of no demand compression during 1990-94.

**Table 12 goes here**

Before turning to conclusions, a caveat is required. As is almost always the case in economic analysis, the importance of debt in Latin America cannot be assessed on purely empirical grounds. The statistical results presented here arise within the theoretical framework used to formulate the growth model. An alternative growth model, based, for example, on the assumption that all markets clear so that economies are price-constrained, would yield a different result. At the least, the model presented here passes the test of predictability. The observations end for the 1990-1994 period. The actual, average values for 1995-1996 of the regression variables were substituted into the model (Table 9). This yielded a predicted growth rate across the Latin American countries for 1995-1996 of 3.0, which compares favourably to the actual average of 3.1.<sup>44</sup>

## 4. Conclusion

We can highlight the implications of our results telling two stylised stories about the HPAEs and Latin America since 1960. In the orthodox story, beginning in the 1960s a group of countries in East and Southeast Asia embraced a strategy of prudent and realistic macroeconomic policies (small fiscal deficits and relatively low government expenditure); and they combined this with outward orientation and reliance on markets rather than administrative interventions. Over time, this group of countries pursued that strategy zealously, deepening it with trade liberalization and deregulation of markets, to emerge as what some call miracles of growth. In contrast, governments throughout Latin America adopted policies of import substitution in the 1960s,<sup>45</sup> and combined this with populist macroeconomic policies that resulted in excessive fiscal deficits and large, inefficient government sectors.<sup>46</sup> While this strategy produced short-term growth, as time passed it revealed itself to be fundamentally flawed. By the late 1970s, the strategy could no longer be sustained, and drastic programs of reform were required to extract the Latin American countries from crisis.

This paper suggests a more nuanced story. During the 1960s, the future miracle countries and the Latin American countries had quite similar growth performances. Indeed, the differences were surprisingly small when one considers that the HPAE group excludes all the slow-growers in Asia. If in 1975, one had picked a group of Latin American “winners” of equal number to the countries in HPAE group, the average growth rate for each group over the previous fifteen years would have been the same.<sup>47</sup> After the oil crisis, many Latin American governments, especially those of the larger countries, chose to finance their current account deficits through commercial bank lending (see Weeks 1989). While this was to prove an unwise decision, few commentators faulted the strategy at the time.<sup>48</sup> When, at the end of the decade, real interest rates rose and commodity prices fell, what had appeared as sound policy proved unsustainable. At this point, growth rates of the two groups diverged markedly. Though on average the HPAE countries grew slower in the 1980s than in the 1970s, the growth rate of Latin American countries collapsed (to an average of one percent for the 1980s). This

collapse can be attributed to the Latin American debt crisis itself and the manner in which the debt crisis was managed, within the “Washington Consensus”. The debt management strategy involved “overadjustment”, *via* heavy emphasis on demand compression.

The debt accumulation in some of the HPAEs during the 1990s, and the financial crises at the end of the decade, lend some support to the view that the group differences in growth rates might be more associated with the phasing of crises in the two regions than intrinsic differences due to policy or long-term strategy. A promising line for further research would be to consider whether the large increase in indebtedness of the more developed Latin American countries in the 1970s, and of the HPAEs a decade later, might be in part explained by the two groups of countries passing through similar phases of development.

1. Growth of Real GDP for Latin American and the HPAEs, 1960-1994 (constant US\$)							
A. Means & standard deviations	<u>1960-64</u>	<u>1965-69</u>	<u>1970-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America							
Mean	5.2	4.9	5.3	4.1	-0.3	2.3	3.8
Std Dev	2.04	1.61	3.45	3.01	2.75	3.08	2.30
HPAEs							
Mean	5.4	7.3	7.7	8.1	6.4	7.6	7.5
Std Dev	2.11	2.71	1.40	1.59	0.90	2.04	1.10
B. Differences in means:							
LA - HPAEs	-0.2	-2.4	-2.4	-4.0	-6.7	-5.3	-3.7
t-statistic	-0.06	-0.78	-0.63	-1.17	-2.33	-1.44	-1.46
significance:	nsgn	nsgn	nsgn	nsgn	0.05	nsgn	nsgn

Note: For this and subsequent tables, Latin America includes all Spanish speaking countries but Cuba, plus Brazil. The HPAEs are Indonesia, Republic of Korea, Malaysia, Taiwan, and Thailand.

1a. Growth of Real GDP per Capita for Latin American and the HPAEs, 1960-1994 (constant US\$)							
A. Means & standard deviations	<u>1960-64</u>	<u>1965-69</u>	<u>1970-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America							
Mean	2.7	2.9	3.4	1.9	-1.5	0.1	1.9
Std Dev	1.68	2.12	2.92	2.74	2.03	2.78	1.85
HPAEs							
Mean	2.8	5.2	5.8	6.0	4.3	5.6	5.8
Std Dev	1.74	3.20	1.80	1.92	.57	3.09	.55
B. Differences in means:							
LA - HPAEs	-.11	-2.4	-2.3	-4.1	-5.7	5.5	3.9
t-statistic	-.04	-0.62	-0.68	-1.22	-2.73	-1.32	-2.04
significance:	nsgn	nsgn	nsgn	nsgn	.02	nsgn	.10

2. Growth of the Volume of Exports, Latin America and the HPAEs, 1960-1994							
(constant US\$)							
A. Means & standard deviations	<u>1960-64</u>	<u>1965-69</u>	<u>1970-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America							
Mean	4.7	5.6	5.9	6.5	0.4	4.2	6.3
Std Dev	5.41	3.75	6.96	5.38	6.65	4.72	2.77
HPAEs							
Mean	8.4	13.1	13.2	11.2	6.7	9.0	10.7
Std Dev	8.01	12.27	6.44	5.19	5.83	1.96	2.49
B. Difference in means:							
LA - HPAEs	-3.7	-7.5	-7.3	-4.8	-6.3	-4.8	-4.4
t-statistic	-0.38	-0.59	-0.77	-0.64	-0.71	-0.94	-1.18
significance	nsgn	nsgn	nsgn	nsgn	nsgn	nsgn	nsgn

3. Exports as a Percentage of GDP for Latin America and the HPAEs, 1960-1994							
(constant US\$)							
A. Means & standard deviations	<u>1960-64</u>	<u>1965-69</u>	<u>1970-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America							
Mean	17.7	18.3	19.6	22.1	20.3	22.2	22.6
Std Dev	7.85	8.62	8.41	8.99	8.10	7.94	8.99
HPAEs							
Mean	18.6	19.6	25.6	33.9	38.2	41.0	43.5
Std Dev	17.56	14.57	9.50	12.87	14.22	16.90	22.32
B. Difference in means:							
LA - HPAEs	-0.9	-1.3	-6.1	-11.8	-17.9	-18.9	-20.9
t-statistic	-0.04	-0.07	-0.48	-0.75	-1.09	-1.01	-0.87
significance	nsgn	nsgn	nsgn	nsgn	nsgn	nsgn	nsgn



4. Gross Domestic Investment as a Percentage of GDP for Latin America and the HPAEs, 1960-1994 (current prices)							
A. Means & standard deviations	<u>1960-64</u>	<u>1965-69</u>	<u>1970-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America							
Mean	18.2	19.0	21.4	23.7	20.4	18.8	19.9
Std Dev	6.32	4.58	4.52	5.10	4.63	4.80	4.18
HPAEs							
Mean	15.2	18.8	23.6	27.4	29.3	26.9	33.5
Std Dev	3.90	6.63	2.88	2.69	3.47	4.23	6.83
B. Difference in means:							
LA - HPAEs	2.9	0.2	-2.2	-3.8	-8.9	-8.0	-13.5
t-statistic	0.39	0.03	-0.41	-0.66	-1.54	-1.24	-1.69
significance	nsgn	nsgn	nsgn	nsgn	nsgn	nsgn	.10

5. Saving as a Percentage of GDP for Latin America and the HPAEs, 1960-1994 (current prices)							
A. Means & standard deviations	<u>1960-64</u>	<u>1965-69</u>	<u>1970-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America							
Mean	17.1	18.1	19.4	22.5	19.7	18.5	17.0
Std Dev	8.68	8.86	8.90	7.53	6.58	6.97	7.70
HPAEs							
Mean	14.1	17.1	21.7	27.3	27.7	26.2	31.7
Std Dev	9.87	10.10	6.21	4.11	3.96	4.05	2.27
B. Difference in means:							
LA - HPAEs	3.0	1.0	-2.3	-4.0	-9.0	-13.4	-17.2
t-statistic	0.23	0.07	-0.21	-0.47	-1.17	-1.71	-2.14
significance	nsgn	nsgn	nsgn	nsgn	nsgn	0.10	0.05

6. Overall Fiscal Deficit as a Percentage of GDP for Latin America and the HPAEs, 1972-1994 (current prices)					
A. Means & standard deviations	<u>1972-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America					
Mean	-2.6	-2.6	-5.1	-4.4	-1.5
Std Dev	2.70	2.47	4.25	5.12	2.58
HPAEs					
Mean	-3.3	-3.5	-4.6	-1.8	0.9
Std Dev	2.27	1.92	4.19	1.64	1.82
B. Difference in means:					
LA - HPAEs	0.7	1.0	-0.4	-2.5	-2.4
t-statistic	0.19	0.31	-0.07	-0.47	-0.75
significance	nsgn	nsgn	nsgn	nsgn	nsgn

7A. Total Government Expenditure as a Percentage of GDP for Latin America and the HPAEs, 1972-1994 (current prices)

A. Means & standard deviations	<u>1972-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America					
Mean	15.6	17.4	21.7	21.2	19.0
Std Dev	4.99	5.53	9.23	9.43	7.63
HPAEs					
Mean	14.3	16.9	22.6	22.0	21.6
Std Dev	5.09	5.34	8.61	7.30	9.06
B. Difference in means:					
LA - HPAEs	1.2	0.5	-0.8	-0.7	-2.6
t-statistic	0.17	0.06	-0.06	-0.06	-0.22
significance	nsgn	nsgn	nsgn	nsgn	nsgn

7B. Government Capital Expenditures as a Percentage of GDP for Latin America and the HPAEs, 1972-1994 (current prices)					
A. Means & standard deviations	<u>1972-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America					
Mean	4.5	5.1	4.8	3.6	3.1
Std Dev	2.24	2.56	2.71	1.95	1.56
HPAEs					
Mean	1.4	2.8	6.7	5.3	5.7
Std Dev	0.95	1.66	5.08	3.61	2.60
B. Difference in means:					
LA - HPAEs	3.1	2.3	-1.8	-1.7	-2.6
t-statistic	1.29	0.75	-0.32	-0.41	-0.86
significance	nsgn	nsgn	nsgn	nsgn	nsgn

8. Foreign Debt Service as Percentage of Exports for Latin America and the HPAEs, 1971-1994 (current prices)					
A. Means & standard deviations	<u>1970-74</u>	<u>1975-79</u>	<u>1980-84</u>	<u>1985-89</u>	<u>1990-94</u>
Latin America					
Mean	22.5	27.9	36.7	32.0	28.5
Std Dev	13.33	17.15	15.36	13.38	13.79
LA, high Debt					
Mean	34.8	45.5	51.3	41.8	31.5
Std Dev	12.86	11.2	10.59	12.55	7.35
LA, moderate Debt					
Mean	17.1	20.0	34.1	28.0	33.9 (26.3)
Std Dev	6.35	9.55	6.18	12.85	19.25 (5.55)
LA, low debt					
Mean	11.9	12.7	19.4	22.8	17.9
Std Dev	2.87	4.71	5.52	4.47	7.98
HPAEs					
Mean	12.4	14.2	18.6	28.5	17.3
Std Dev	5.58	3.87	5.89	7.51	12.17
B. Differences in means:					
LA - HPAEs					
Mean	10.1	13.7	18.1	3.5	11.2
t-statistic	.70	.78	1.10	.22	.61
significance	nsgn	nsgn	nsgn	nsgn	nsgn
LA HD - HPAEs					
Mean	22.4	31.3	32.7	13.3	14.2
t-statistic	1.55	2.67	2.56	1.05	1.74
significance	nsgn	.05	.05	nsgn	.10
LA MD - HPAEs					
Mean	4.7	5.8	15.5	- 0.5	16.6 (9.0)
t-statistic	.55	.56	1.82	-.03	.73 (.68)
significance	nsgn	nsgn	.10	nsgn	nsgn
LA LD - HPAEs					
Mean	-0.5	- 1.6	0.8	- 5.7	0.6
t-statistic	-.08	-.26	.10	-.65	.04
significance	nsgn	nsgn	nsgn	nsgn	nsgn

Notes:

The Latin American countries are divided on the basis of their average ratio of debt service to exports across all periods.

High Debt (HD): greater than thirty percent; Argentina, Bolivia, Brazil, Chile, Mexico, Peru, & Uruguay (7);

Moderate Debt (MD): between twenty and thirty percent; Colombia, Costa Rica, Ecuador, Nicaragua, Panama, & Venezuela (6); and

Low Debt (LD): less than twenty percent; Dominican Republic, El Salvador, Guatemala, Honduras, & Paraguay (5).

For 1990-94 in the Moderate Debt group the numbers in parenthesis omit Nicaragua, which had a ratio of seventy-two percent.

9. OLS Estimation of GDP Growth Across 18 Latin American Countries, 1970-1994  
(by five-year periods)

<u>Variable</u>	<u>Coefficient</u>	<u>T-statistic</u>	<u>Significance of T</u>
1. Constant	.0081	.197	.844
2. Investment/gdp (ln, t-2)	.0209	1.713	.090
3. Debt service/exports (ln, t)	-.0160	-3.023	.003
4. Export growth (ln, t-2)	.1474	2.483	.015
5. Foreign Direct Investment (ln, t)	.7731	2.146	.034
6. Conflict (binary)	-.0346	-3.177	.002
Adjusted R <sup>2</sup>	.3884	Significance of F:	
F-statistic	12.303	.000	
Degrees of Freedom	84		

Note: If the years within each time period are designated t<sub>0</sub> through t<sub>4</sub>, all explanatory variables are the average of t<sub>0</sub> - t<sub>4</sub>, while the investment and export variables are the average of t[-2] - t<sub>2</sub>.

10. Estimated Growth Effects by Variable from OLS Regression (HPAE values)

A. Percentage Points

Variable	Period					All Periods
	1970-74	1975-79	1980-84	1985-89	1990-94	
Investment	0.2	0.2	0.8	0.9	<b>1.2</b>	0.68
Exports	<b>1.0</b>	0.5	0.8	<b>1.0</b>	0.6	0.76
For Direct Invest't	0.2	0.2	0.6	0.2	0.4	0.31
Debt Service	<u>1.0</u>	<u>1.1</u>	<u>1.1</u>	<u>0.2</u>	<u>0.8</u>	<u>0.77</u>
Sub-total (1)	2.3	2.0	3.3	2.2	3.0	2.52
Conflict	<u>0.0</u>	<u>0.0</u>	<u>0.6</u>	<u>0.6</u>	<u>0.2</u>	<u>0.27</u>
Sub-total (2)	2.3	2.0	3.9	2.8	3.2	2.8
LA actual	5.3	4.1	-0.3	2.3	3.8	3.0
Total	7.7	6.1	3.5	5.1	7.0	5.8
HPAE actual	<u>7.7</u>	<u>7.5</u>	<u>6.2</u>	<u>7.3</u>	<u>8.0</u>	<u>7.3</u>
Residual	0.0	-1.5	-2.7	-2.2	-0.9	-1.5

B. Percentage Distribution

	Period					All Periods
	1970-4	1975-9	1980-4	1985-9	1990-4	
Investment	8.6	7.0	12.5	17.5	<b>29.7</b>	15.7
Exports	<b>41.8</b>	13.6	11.5	<b>19.1</b>	15.5	17.7
For Direct Invest't	7.4	5.4	9.4	4.2	8.4	7.1
Debt Service	<u>40.5</u>	<u>31.3</u>	<u>16.7</u>	<u>3.9</u>	<u>19.2</u>	<u>18.0</u>
Sub-total (1)	98.4	57.3	50.1	44.4	72.8	58.5
Conflict	<u>0.0</u>	<u>0.0</u>	<u>8.8</u>	<u>11.5</u>	<u>4.6</u>	<u>6.3</u>
Sub-total (2)	98.4	57.3	58.9	56.9	77.4	64.8
Residual	<u>1.6</u>	<u>42.7</u>	<u>41.0</u>	<u>44.1</u>	<u>22.5</u>	<u>35.2</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: Largest of the first four effects indicated in bold. Percentages may not add to one hundred due to rounding.

11. OLS Growth Effects for 18 Latin American Countries,  
HPAE Values, 1970-1994 (Percentage points)

Country:	Effect: <u>Investment</u>	<u>Exports</u>	Forgn direct <u>investment</u>	Debt <u>service</u>
High Debt:				
Argentina	0.6	0.8	0.6	<b>1.5</b>
Bolivia	1.0	<b>1.2</b>	0.8	1.0
Brazil	0.6	0.3	0.4	<b>1.3</b>
Chile	0.8	0.3	0.4	<b>1.1</b>
Mexico	0.6	0.5	0.2	<b>1.7</b>
Peru	0.6	1.2	0.6	<b>1.2</b>
Uruguay	1.1	0.6	0.6	<b>1.0</b>
Moderate Debt:				
Colombia	<b>0.9</b>	0.6	0.2	0.7
Costa Rica	0.3	0.4	-0.7	<b>0.6</b>
Ecuador	0.6	0.2	-0.3	<b>0.8</b>
Nicaragua	0.8	<b>1.5</b>	0.6	0.7
Panama	0.4	<b>0.8</b>	0.2	0.6
Venezuela	0.3	<b>0.9</b>	0.8	0.3
Low Debt:				
Dominican Rep	0.6	<b>0.6</b>	-0.3	-0.1
El Salvador	<b>1.2</b>	1.2	0.7	-0.3
Guatemala	<b>1.3</b>	1.1	0.0	-0.4
Honduras	0.7	<b>1.0</b>	0.4	0.3
Paraguay	<b>0.5</b>	<u>0.4</u>	<u>0.3</u>	<u>-0.1</u>
Average	0.68	0.76	0.31	0.77
High debt	0.76	0.72	0.52	<b>1.28</b>
Moderate	0.55	<b>0.75</b>	0.13	0.60
Low debt	0.84	<b>0.85</b>	0.23	-0.14

Note: The largest of first four effects for each country is noted by bold.

Table 12: Summary of Estimated Debt Effect on Latin American Growth, 1970-1994

<u>Effects</u>	<u>Percentage points</u>
Direct debt effect:	.77
Indirect effects:	
Debt-residual (demand compression) effect	.65
Debt-investment effect	.07
Debt-export effect	.26
Debt-Foreign direct investment effect	<u>.09</u>
Total debt effect	1.84
HPAE - LA (actual)	<u>4.31</u>
Actual - Total debt effect	2.47
<u>Composition of Actual - Total debt effect:</u>	
Conflict (HPAE-LA values, adjusted for debt)	.27
Investment	.61
Exports	.50
Foreign direct investment	.22
Residual	<u>.87</u>
Actual - Total debt effect	2.47

Figure 1a:

GDP Growth Rates of the Latin American  
and HPAE Countries, 1970-74

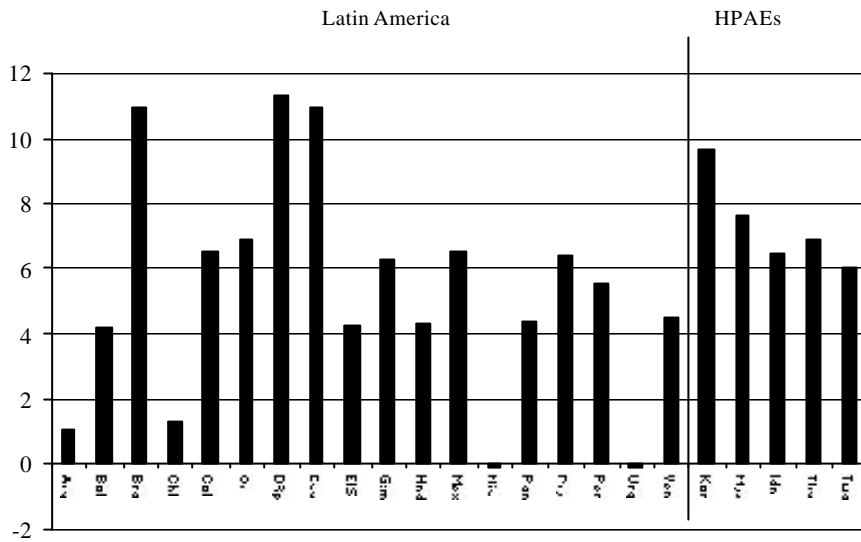


Figure 1b:

GDP Growth Rates of the Latin American  
and HPAE Countries, 1980-84

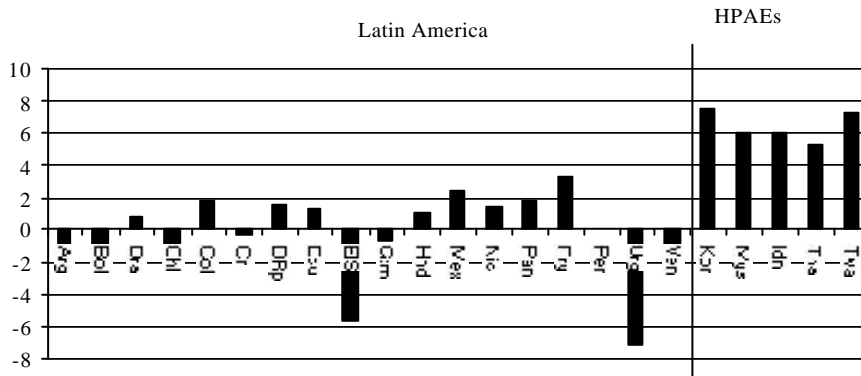
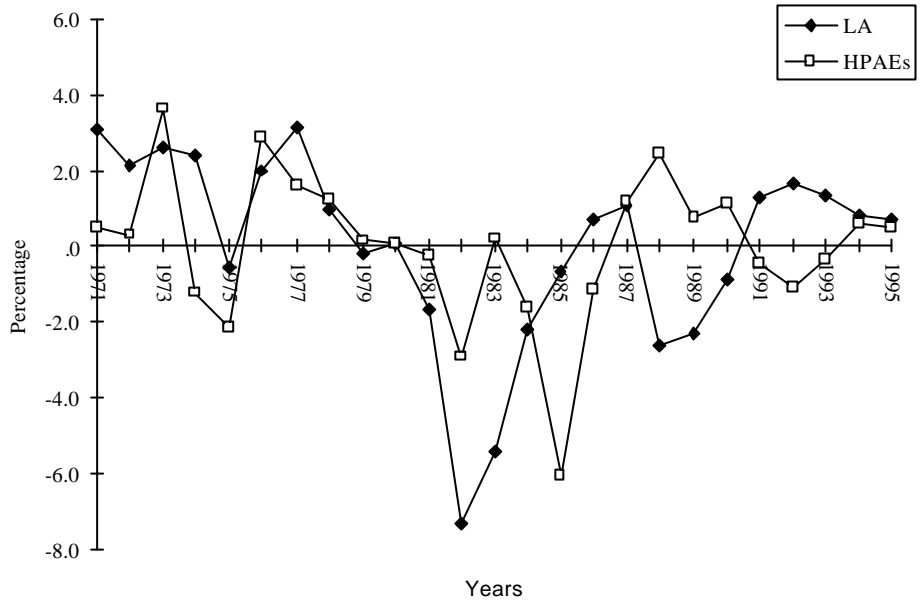




Figure 2:

Annual Growth Effects, Latin America and the HPAEs, 1970-1995  
(relative to period average)



Notes: The coefficients for the following years are significant at .10 or less: Latin America 1981-1984, 1988-1989; HPAEs 1973, 1975, 1982, 1984, 1985.

Figure 3:

Decomposing Differences in Growth Rates,  
Latin America and the HPAEs, 1970-1994

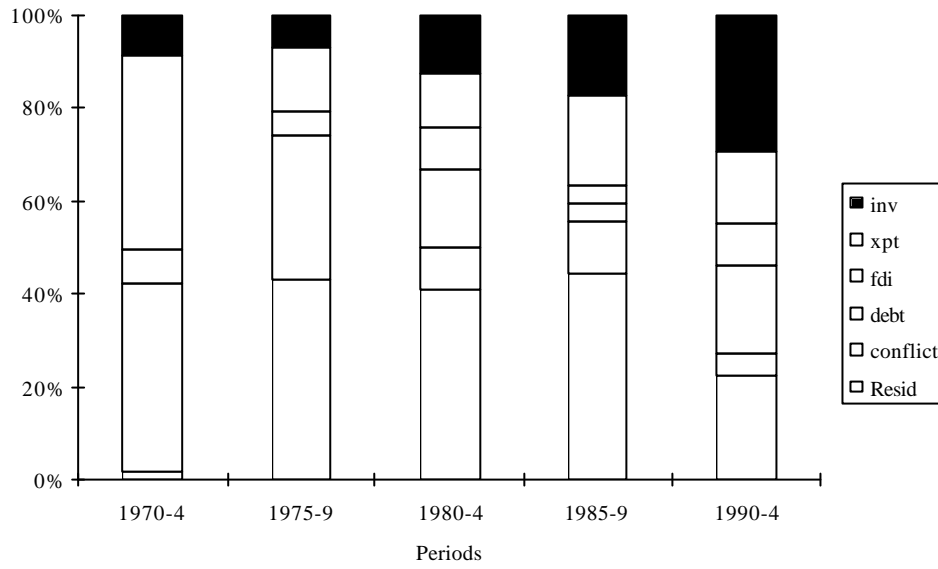
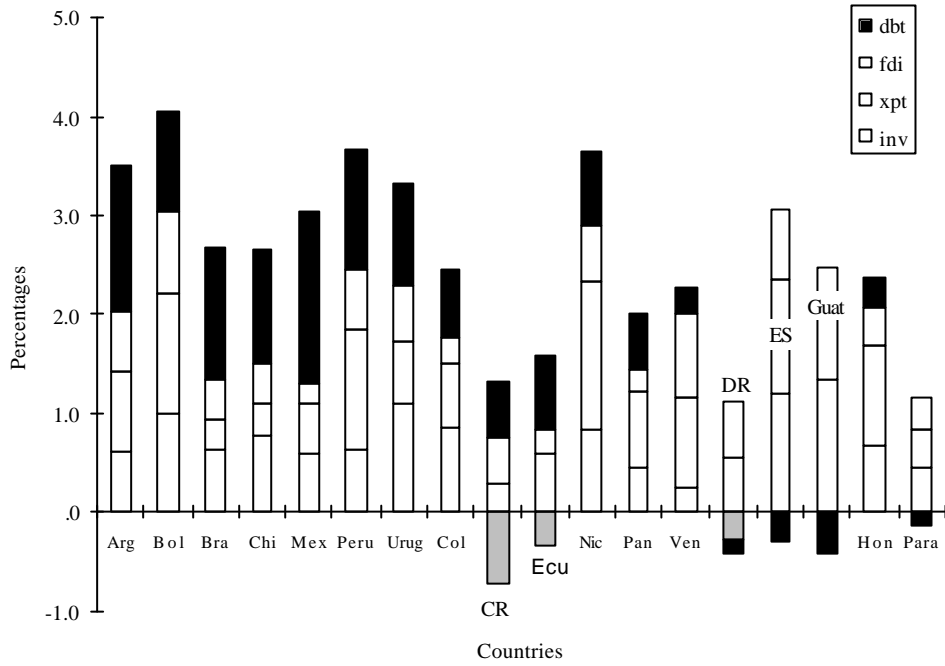


Figure 4:

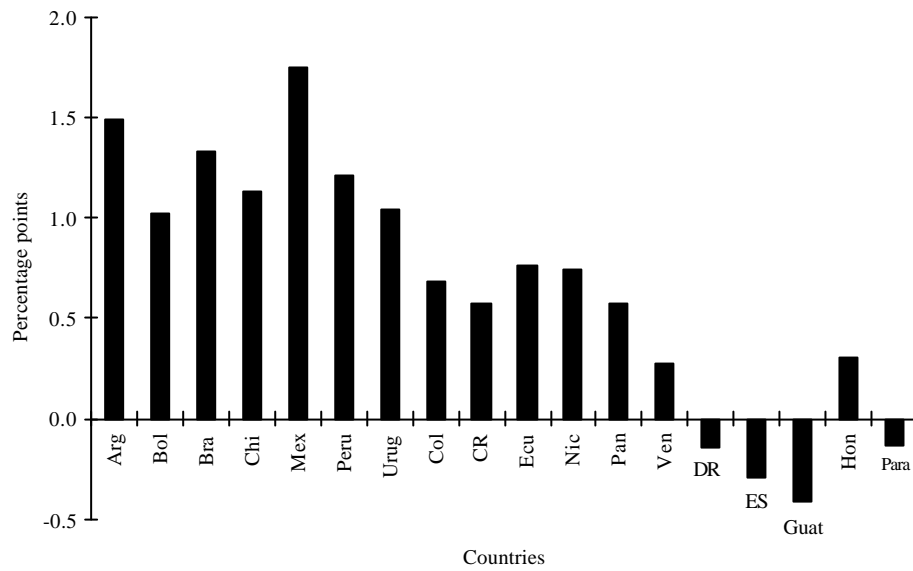
OLS Simulated Growth Effects by Latin American Country, 1970-1994  
(HPAE values)



Note: Debt service effect is “dbt”, foreign direct investment is “fdi”, exports is “xpt”, and investment is “inv”. See Table 10.

Figure 5:

Debt Service Effect on Growth for 18 Latin American Countries,  
HPAE Average, 1970-1994



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## Appendix:

The data sources for Tables 1-8, the regression exercise, and statistics given in the text are from the following sources.

1. GDP in 1987 US dollars at market prices,<sup>49</sup> volume of exports, exports as percentage of GDP, gross domestic investment as percentage of GDP, debt service as a percentage of export earnings: For all countries but Taiwan, *World Development Indicators 1996* and *World Development Indicators 1997*. For Taiwan, the source is Taiwan Area, Quarterly National Economic Trends and Industry of Free China (various years).
2. Government total expenditure, capital expenditure, and deficit: For the HPAEs except Taiwan, *World Development Indicators 1996* and *World Development Indicators 1997*. For Taiwan, as above. For Latin America, Inter-American Development Bank (1975, 1981, 1986, 1991, & 1996).

The variables used in the regression (see Table 9) are all five-year averages. The investment-GDP and export growth ratio are lagged two years (i.e., for GDP growth in period 1970-1974, I/GDP is for 1968-1972). The other two variables are for the years of the period in question. The regression data and SPSS output are available from the author. The plot of estimated and actual values by period is shown in Figure A1. Figure A2 plots the actual values by period against the unexplained residual after HPAE values have been substituted for the explanatory variables.

At the end of Section 3, an estimation is given of the total (direct and indirect) effect of debt service. The calculation is as follows: 1) the average growth residual after substituting HPAE values for the 1970s and 1990-1994 is .82 percentage points, and 2.45 for 1980-89; 2) if we assume no demand compression effect for the former periods, then the net affect in the 1980s is 1.65 percentage points; and 3) the average over the five period is  $(2 \times 1.65)/5 = .65$ . When this is added to the direct effect, it yields 1.42 percentage points. This is the basis for setting the lower limit of the total debt effect at 1.5 percentage points. The same method is used to estimate the indirect debt effect on investment (domestic and foreign) and export growth.

Figure A1:

Estimated and Actual Growth Rates, Average for Eighteen Latin American Countries 1970-1994 (five year periods)

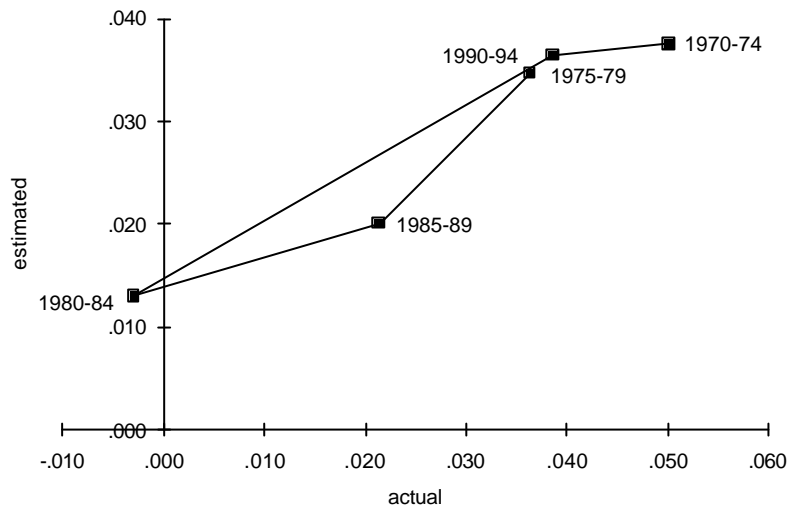
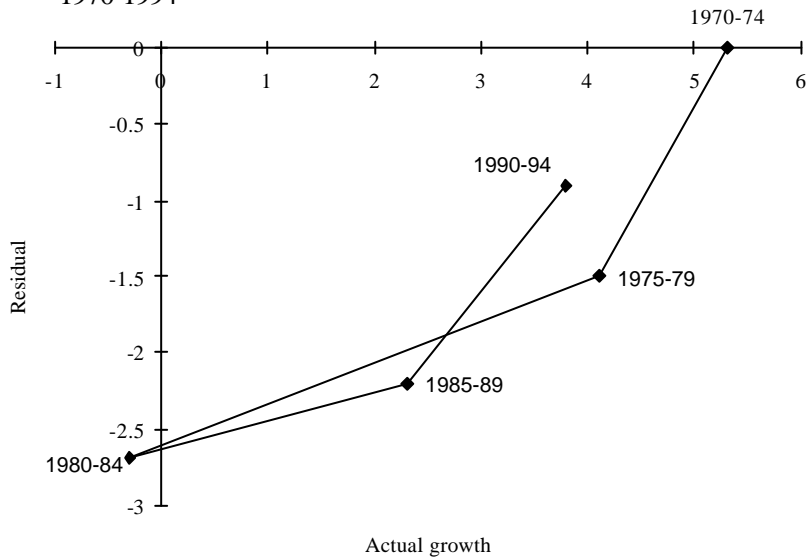


Figure A2:

The Actual Rate of GDP Growth and Simulation Residual, across Time Periods for 18 Latin American Countries, 1970-1994



Note: The correlation coefficient between the actual rate of growth and residuals is .91, with a probability less than .02 that the correlation is not significant.

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<sup>1</sup> The title of the World Bank report, “The East Asian Miracle” reflects some confusion of geography in as far as it includes Indonesia, Malaysia, Singapore and Thailand (in Southeast Asia), but excludes China.

<sup>2</sup> The term “High Performing Asian Economies” is used in World Bank (1993).

<sup>3</sup> For papers focusing on the World Bank report and closely related policy issues, see Amsden (1994), Chang (1994), Lall (1995a), Mosley (1995), Panchamuki (1996), Rodrik (1994), Singh (1995 & 1996), Wade (1994 & 1996), Weeks (1995), and Yanagihara (1994). For specific countries see Amsden (1989, Korea), Booth (1992, Indonesia), Cheng, Haggard & Kang (1996, Korea and Taiwan), Jomo (1990, Malaysia), Lall (1995b, Malaysia), Lin (1973, Taiwan), Park & Song (1997, Korea, Thailand, Malaysia & Indonesia), Rodrik (1995, Korea & Taiwan), Wade (1993, Taiwan & Korea).

<sup>4</sup> For a sympathetic presentation of the Washington Consensus (albeit by another name), see Rodrik (1996).

<sup>5</sup> It is unclear because the HPAE countries were not grouped by the World Bank on any analytical basis other than that they all grew rapidly (certainly not geographically, since the Philippines, Burma, and China are excluded). Given that they were grouped on the basis of high growth rates, it is not surprising that their average growth rate was high.

<sup>6</sup> For example, consider the estimation of a consumption function for country X over the years 1960-1990. Regression analysis is applied on the presumption that the observations represent a sample. It is assumed that for each point in time there is a normal distribution of consumption outcomes, and the observed value is but one of these.

<sup>7</sup> These city states have the characteristics that define them as countries for international trade theory: separate monetary systems and relative immobility of labour (due to nationality restrictions). However, in its theory, development economics typically defines countries to have additional characteristics.

<sup>8</sup> Like the World Bank, we omit the Philippines. This is to follow common practice rather than for any analytical reason. The omission is usually justified on the basis of the poor growth performance of the country. This is indefensible, because the Philippines enjoyed a considerably higher growth rate than Indonesia (a World Bank HPAE) in the 1960s, when it was generally considered to be an economic success. In any case, it is rather arbitrary to point out, on the one hand, the geographical concentration of success stories in East and Southeast Asia, while, on the other, omitting one of the region’s major countries. One might analogously exclude from the Latin America group those countries with especially poor growth performances over the three decades. An Institute of Developing Economies study of the South East Asian region included the Philippines (Fukuchi, Takao & Kagami 1990).

<sup>9</sup> Tables 1-8 that include Hong Kong and Singapore are available from the author.

<sup>10</sup> The author thanks Christopher Howe of the School of Oriental and African Studies for providing the sources for Taiwan.

<sup>11</sup> For GDP itself, the average for the thirty-five years was 7.1 for the HPAEs and 3.6 for Latin America. The former is slightly less than double the latter, not treble as asserted by the World Bank. Per capita GDP growth was approximately three times greater for the HPAEs (5.1 percent per annum compared to 1.6), though the absolute percentage point spread is the same. If Hong Kong, Singapore, and Japan are included, the HPAE average of GDP growth for the thirty-five years *falls* to 6.6, and raises the HPAE average only in the 1960s.

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<sup>12</sup> Chile is a prime example. During most of the 1970s its growth rate was quite low, and low in the early 1980s. Subsequently it enjoyed growth rates comparable to the ‘miracles’.

<sup>13</sup> As with national income growth, export growth was uneven in Latin America, across countries, and over time for specific countries. There are many examples for extremely rapid export growth. Non-oil exporting countries with export growth in excess of ten percent per year were: Brazil and Costa Rica during 1970-74; Argentina, Chile, and Uruguay during 1975-79; Brazil and the Dominican Republic during 1980-84; Colombia and Paraguay during 1985-89; and Bolivia, Chile, Costa Rica, the Dominican Republic, and Nicaragua during 1990-94.

<sup>14</sup> The stress given to “open-ness” derives from the view that “open economies do grow faster” (Dollar 1992). Studies seeking to demonstrate this hypothesis have been cast into doubt by the work of Pritchett (1996), who demonstrated that the various measures of openness used in empirical work are not correlated with each other.

<sup>15</sup> The conclusion that the HPAEs were more open might be strengthened by such an analysis, since several of the Latin American countries are quite small, and for several minerals dominated exports. Both of these, small size and mineral-based economies, tend to inflate the export-GDP ratio.

<sup>16</sup> For an excellent review of the literature on measuring openness, see Subasat (1999, chap. 5).

<sup>17</sup> All writers do not stress high investment rates. See, for example, Kagami (1995) and Institute of Developing Economies (1990), where it is noted that Latin American and East Asian rates of capital accumulation were quite similar.

<sup>18</sup> The surprisingly low average for the HPAEs during 1960-64 is partly the result of the low investment rate in Indonesia during the last years of the Sukarno government.

<sup>19</sup> The HPAE growth had its investment under-performer. During 1985-1989, Taiwan’s investment share in GDP, below twenty percent, was lower than the ratio for a majority (ten) Latin American countries.

<sup>20</sup> Palma argues that in as far as saving rates were higher in the HPAEs than in Latin America, this can largely be explained by state policies to coerce a lower consumption level and foster corporate retained earnings. He concludes that the HPAE performance is explained by “forced household savings, massive government savings as in Singapore, credit restrictions on luxury consumption and mortgage operations, or attractive long-term returns on savings...” (Palma 1996, p. 44).

<sup>21</sup> Since the data used in the Naya study are not from the World Tables, they are not presented in detail here. The average across countries for the 1960s is 3.2 for both regions. For the 1970s, the HPAE countries’ average is 3.8 and 4.6 for the Latin American countries. The former group includes all East and Asian countries that we consider (i.e., including the Philippines, but excluding Japan). The Latin American countries covered in the study are the same eighteen that we treat.

<sup>22</sup> “More than most developing countries, the HPAEs were characterised by responsible macroeconomic management. In particular, they generally limited fiscal deficits to levels that could be prudently financed without increasing inflationary pressures...” (World Bank 1993, p. 12).

<sup>23</sup> Which, evidently, they do in the judgement of the World Bank. See the “Fiscal Policy Stance Index” in World Bank (1994, p.48).

<sup>24</sup> In a 1998 speech, Stiglitz repeated the standard view of Latin American deficits: “Budget deficits were very high -- many were in the range of 5 to 10 percent of GDP [in the early 1980s]” (Stiglitz 1998, p. 2, emphasis added). Across the eighteen countries and five time periods (ninety observations) there were sixteen cases in which deficits averaged over five percent of GDP, six during 1980-1984 and five during 1985-1989. Only five countries averaged over five percent in more than one time period, two of which were major countries (Mexico and Brazil, the others being Honduras, Nicaragua, and Panama). The HPAE group had a persistent offender, Malaysia, with deficits in excess of five percent during 1970-1984. During the 1980-1984 period, only two Latin American countries had deficits greater than Malaysia’s (Nicaragua and Bolivia).

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<sup>25</sup> This is suggested in some World Bank reports (1993 & 1994), but one finds a more nuanced approach in World Bank (1997).

<sup>26</sup> Venezuela is an exception. Due to petroleum revenues, it had a large state sector for the entire thirty-five years.

<sup>27</sup> The ratio was over thirty percent for Brazil during 1985-89 and 1990-94, Nicaragua during 1980-84 and 1985-89, and Chile 1980-84, and for no others during any of the periods.

<sup>28</sup> A good starting place for an analytical framework is Mueller (1989, Chapter 17, "Size of Government").

<sup>29</sup> According to World Bank figures, Indonesia's debt service as a portion of export earnings was: 1975-1979, nineteen percent; 1980-1984, seventeen percent; and 1985-1989, thirty-six percent. For Korea, Malaysia, and Thailand, debt service rose sharply in the 1980s, but briefly, with rapid export growth and rescheduling reducing the percentages to ten to fifteen percent in the early 1990s. Taiwan had a net positive external capital account.

<sup>30</sup> For the first group, only for five observations out of thirty-five was debt service less than thirty percent of exports. Two of these were during 1970-74, before the major debt accumulations (Bolivia and Chile), and two during 1990-94, after the debt reduction measures of the late 1980s (Brazil and Chile). The fifth, for Peru during 1985-89, reflected the Garcia government's policy of limiting debt service payments. For the "moderate" group, the debt service ratio was *more* than thirty percent in eleven time periods, five of which were during the debt crisis period of 1980-84. For the "low" group, the ratio was over thirty percent in only one time period (Honduras, 1990-94), and above twenty percent in only eight. Honduras is a marginal case with an average for the five periods just over twenty percent.

<sup>31</sup> By contrast to Latin America, only one country among the HPAEs had debt service over thirty percent of export earnings, Indonesia during 1985-89 and 1990-1994, which is not unrelated to the country's financial crisis during 1997-1998. Even with Indonesia, the HPAE group is in the "low debt" category in all time periods except 1985-89.

<sup>32</sup> The diagram is constructed as follows. For each of the two series, a regression equation was estimated:

$$\ln y_t = \alpha_0 + \alpha_1 d_{1971} + \alpha_2 d_{1972} + \dots + \alpha_{25} d_{1995} + \varepsilon$$

Where  $d_{1971}$ , etc. are dummy variables for years, and 1970 is omitted. The points in the diagram are each coefficient, with the average across all years subtracted (i.e., the point for 1971 is  $\alpha_1 - [\sum \alpha_i / n]$ , where "n" is the number of year dummies).

<sup>33</sup> For the years 1970-1982, the growth deviations have a positive correlation (R-squared) of .46, with an elasticity of unity (equal proportionate changes between groups). For 1987-1995, the correlation is negative (R-squared .58), with an elasticity near minus unity between groups.

<sup>34</sup> In the absence of technical change, the equation is derived from an identity. Since  $\beta = \Delta y / \Delta K$ ,  $\eta = I / Y$ , and by definition changes in the capital stock ( $\Delta K$ ) are equal to net investment (I), so  $\Delta Y / Y = [\Delta Y / \Delta K] / [\Delta K / Y]$ .

<sup>35</sup> The role of exports as an engine of growth is discussed in McCombie and Thirlwall (1994, chap. 6). In our specification, the coefficient on export growth is not the foreign trade multiplier (Kaldor's "super-multiplier"), because of the intervention of the adjustment coefficient and the link to capacity utilisation.

<sup>36</sup> After the model was estimated in the form specified in the text, various dummy variables for country groups were tested. A dummy variable for the Central American and Caribbean countries proved to be non-significant.

<sup>37</sup> Actual and predicted values for each time period are shown in a diagram in the appendix.

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<sup>38</sup> That the coefficient on foreign direct investment is close to unity is to be expected. The model implies that it is the elasticity of domestic investment with respect to foreign investment ( $[\Delta I/\Delta FDI]/[Y/FDI]$ ), times the adjustment coefficient. Since the implied adjustment coefficient is .98 ( $1 - \alpha_1$ ), the implied elasticity is .79. This, in turn, implies that foreign investment partially replaces investment by nationals, as one would expect if investment opportunities are finite and subject to diminishing rates of return.

<sup>39</sup> De Pinies uses a simple simulation model to demonstrate that the Latin American countries could have pursued a strategy in which increased borrowing could have been sustained with a higher rate of growth of output.

<sup>40</sup> An economy may produce below its potential level of output either because it is demand constrained or relative price constrained. For example, unemployment may result from lack of effective demand (Keynesian-structuralist), or from a real wage above the market-clearing level (neoclassical). To distinguish between the two, one needs a theoretical framework, but to a great extent the framework chosen determines the outcome of the test.

<sup>41</sup> "I will argue that the focus on inflation, the central macroeconomic malady of the Latin American countries which provided the backdrop for the Washington Consensus, has led to macroeconomic policies which may not be the most conducive for long-term growth" (Stiglitz 1998, p. 5).

<sup>42</sup> The correlation coefficient is .91. Even with only five observations, this is significant at a probability of .02. See appendix for the plot of actual growth rates and residuals. When the model is used to predict annual growth rates, 1970-1996, the residuals (as percent of the actual growth rate, absolute value) are negatively correlated with actual growth, with correlation coefficient of .26, significant at probability less than .001.

<sup>43</sup> See appendix for calculations.

<sup>44</sup> The 1995 and 1996 data are from the World Bank, *World Development Indicators 1998*. Paraguay is omitted, because of lack of data on debt service payments for both years.

<sup>45</sup> The allegation that all or most Latin American governments pursued import substitution strategies in the 1960s and 1970s is challenged by Bulmer-Thomas (1992).

<sup>46</sup> The "populist" interpretation is found in Dornbusch & Edwards (1991), and viewed with some scepticism in Kaufman & Stallings (1991).

<sup>47</sup> The five Latin American "winners" during 1960-1974 were (with their growth rates): Brazil (7.3), Panama (7.0), Mexico (6.8), the Dominican Republic (6.7), and Nicaragua (6.6).

<sup>48</sup> One can cite the World Bank in its 1979 *World Development Report* as an authority on this. Along with warnings about possible problems of debt accumulation, one reads,

Despite the increase in aggregate debt, various indicators of indebtedness have remained acceptable...Most of the private debt was owed by relatively few countries, most of which had good growth prospects and reasonably sound economic management...In...*Brazil*, Indonesia, *Mexico* and the Philippines, increased borrowings have resulted in higher indebtedness and debt service ratios *but have caused no significant liquidity problems* (World Bank 1979, p. 29, emphasis added).

<sup>49</sup> *WDI 1997* gives Korea's GDP growth for 1980 as 57.4 percent. This should be 5.7.