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**GROWTH AND HUMAN DEVELOPMENT:  
COMPARATIVE LATIN AMERICAN EXPERIENCE**

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**SECTION I. INTRODUCTION**

It may not be necessary to dwell at great length on the basic notion that human development should be viewed as the bottom-line or basic objective of human activity, and that economic growth should be viewed as a contributor to it, rather than as the end product. The intellectual antecedents of this notion are well established in both the original “basic needs” approach of the ILO, later taken up by the World Bank, as well as Amartya Sen’s concept of capabilities.<sup>1</sup> In its broadest sense we define human development as permitting people to lead longer, healthier and fuller lives. More narrowly, we can interpret HD as reflected in the status of people’s levels of health and education.

This paper first (Section II) presents a conceptual framework relating growth and human development.<sup>2</sup> In Section III it offers some comparative international evidence, focussing especially on the Latin American experience. Section IV provides brief conclusions for policy.

**SECTION II. CONCEPTUAL FRAMEWORK**

Obviously there exists a strong two-way relationship between economic growth, EG, and human development, HD. On the one hand, EG provides the resources to permit sustained improvements in HD; on the other, sustained improvements in the quality of human capital are an important contributor to EG. Yet, while this symbiotic two-way relationship is easily accepted, the specific factors linking them have not been systematically explored. Nor has the question of priorities in the phasing of development policy. The customary assumption is that growth must precede progress in human development.

In Diagram I we present two causal chains linking growth and human development. Human Development is featured “at the top,” in

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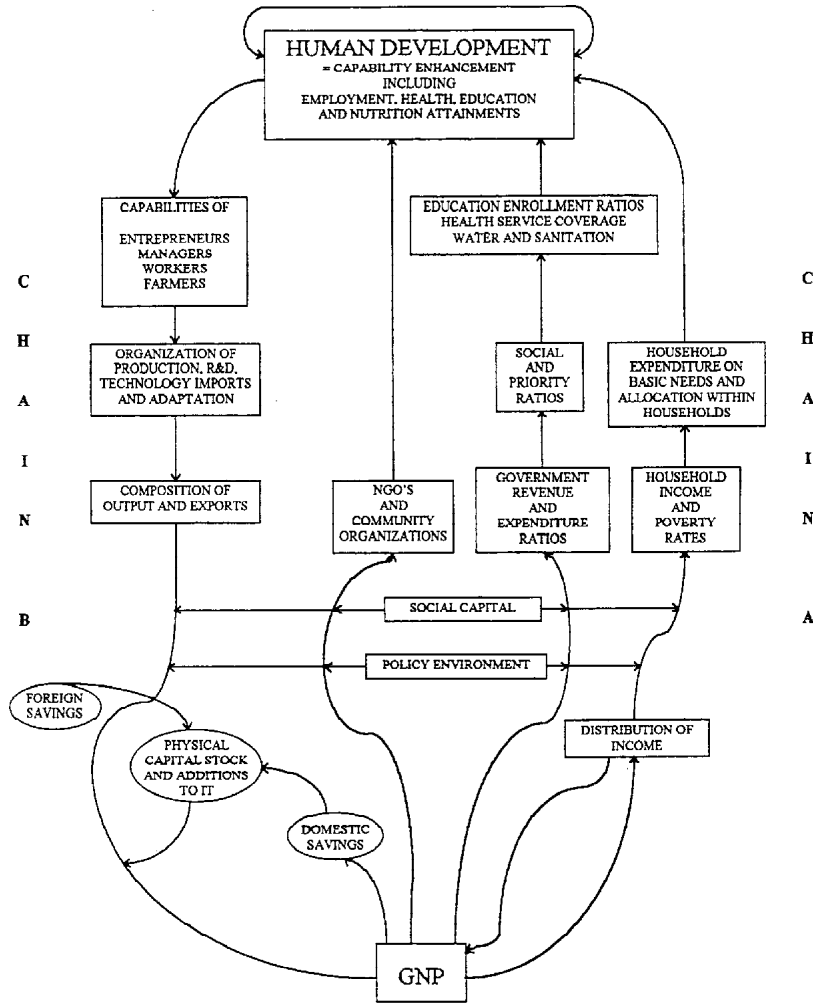
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recognition of its status as the fundamental objective with respect to Chain A, running from EG to HD, we may note that, from a given level of income generated by past growth, we can trace the expenditure of households, governments and civil society, including NGO's, on inputs which serve to enhance human development as defined above. The impact of given aggregate levels of average household income on HD, of course, depends not only on the average level but also on the distribution of that income and on the extent to which societal poverty has been alleviated. Thus, the nature of the growth process, i.e., how growth is generated, how employment sensitive and how income distribution friendly it is, as well as how well it has succeeded in reducing poverty, will have an effect on how households spend their income. When income per capita is low or when it is badly distributed, the total expenditure of many households on HD, of course, is bound to be low. But, in general, lower income households spend a higher proportion of their income on HD items than those with higher incomes. It is also important to know who controls the allocation of expenditures within households. *Ceteris paribus*, female-headed households spend more than male-headed households on health, education, food, potable water, etc. Latin American empirical evidence, including for Bolivia, Brazil, Chile, Nicaragua and Peru, indicates the effects of a positive income change on household demand for HD-related items. For example, in the case of Brazil it is estimated that, if the distribution of income were as equal as Malaysia's, school enrollments of poor children would be 40% higher than they currently are.<sup>3</sup> While the evidence on the relationship between income and health is less extensive, studies in Brazil and Nicaragua suggest that household income has a significant effect on the demand for health, but showing again a much higher response for low than for high income households. Symmetrically, while HD levels are negatively affected by reductions in economic growth, the extent of the impact again varies greatly with the distribution of income and its change over time.

Health and education, of course, are also important public goods. The allocation of resources out of GNP for HD-improving public goods investments by various levels of government is partly a function of the relative size of public expenditures, partly a function of what proportion of these expenditures flow to the HD sectors and, finally, partly a function of how they are allocated within each of the sectors. All this can be expressed in the form of three ratios:<sup>4</sup> the public expenditure ratio, i.e. the proportion of GNP spent by various levels of government; the HD allocation ratio, defined as the proportion of government expenditures going to the HD sectors; and, finally, the HD "priority ratio," defined as the proportion of total HD expenditures going to "priority areas," e.g., primary

Diagram I



THE HD-GNP CYCLE

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versus tertiary education, as one example. This last concept is, of course, somewhat arbitrary, depending on a country's stage of development, e.g., in the early stages of development primary education is more likely to be productive in terms of achieving advances in HD, while it is generally recognized that vocational and secondary education are likely to have a larger impact on HD later on, with tertiary education still later, as the system moves into an S & T leadership role.

The underlying determinants of these three ratios, of course, include the tax capacity of the system, the strength of the demand for military expenditures and other non-HD priorities of government, each influenced by the interplay between bureaucratic forces and populist pressures. All three ratios are affected by the extent of decentralization which tends to increase total revenues available, is likely to raise the HD allocation ratio, and usually improves the HD priority ratio.<sup>5</sup>

Finally, the expenditures of civil society or NGO activity, on which information is more scattered, are mostly heavily oriented towards HD objectives. Resources are primarily derived from private donations and governments, both foreign and domestic. In most contexts, NGO's play a supplemental or even marginal role in a few areas, but occasionally, e.g., the case of the *Commodores Populares* in Peru, they appear to represent a significant source of HD enhancement.

How expenditures in the direction of enhancing HD levels are allocated, and how effective they are in raising HD levels is, of course, another central issue. This link in the chain between expenditure inputs and HD outputs may be called the HD production function. The relationships embodied in this production function are complex, depending on both individual family and community behavior, the existence of local knowledge about relevant technologies and the complementarity or competitiveness among various inputs, such as preventive health, nutrition, education, etc. While, as noted above, some aspects of that production function have been elucidated by detailed empirical work, it is generally still poorly understood. Nonetheless, there exists abundant evidence that female education tends to improve child nutrition and survival levels. A study of Brazil indicates that an increase in the non-labor income of women increases the probability of child survival by 20 times that of an equivalent increase in the non-labor income of men.<sup>6</sup>

It should be clear that the strength of the various links in Chain A is critical, that it varies according to a large number of factors, including the structure of the economy, the level

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and distribution of household income, and the policy choices made by government. Where horizontal links among actors, i.e. so-called “social capital,” is strong, the strength of these links is also likely to be positively affected, i.e., when people act together to promote their common well-being, when the community monitors any malfeasance, we can expect Chain A links to be stronger. The same, in brief, can be said, *ceteris paribus*, about a better distribution of income, a lower poverty level, a higher level of female education, a higher level of female control over household income within the household, a higher government social expenditure ratio, and a more efficient human development production function.

Turning to Chain B, running from HD to EG, we have ample evidence that as people become healthier, better nourished and better educated, they contribute more to economic growth. This is conventional wisdom—even if all components of HD aren’t part of the feedback effect. Thus, higher levels of HD, in addition to being an end in themselves, affect an economy by enhancing the productivity of workers and the entrepreneurial capabilities and creativity of managers, and thus total factor productivity. A higher level of human development means that the society disposes over better human capital across the board. More specifically, additional primary education improves the capabilities of farmers and unskilled workers; additional secondary education creates more skills, and better supervisory personnel; and, at the tertiary level, the impact of higher level manpower, combined with science and technology, is well understood. Better human capacity means better governance, better choice of foreign technology, and better adaptation of such technology. At the macro level support for this relationship may be obtained from the so-called “new growth” theories. Specific investments in education or research and development make the whole system more productive. Higher savings and investment rates, combining with technology and social capital, are again part of the enabling environment which determines the impact of the supply of a more educated labor force on the generation of income.

There is clear evidence in agriculture of the effects of education, including literacy, on productivity change among farmers, especially those using improved or modern technologies. Some such evidence indicates that farmers with four or more years of schooling are three times as likely to adopt fertilizer and other modern inputs than less educated farmers. Even the quality of policy-making and of investment decisions in the public and private sectors, respectively, is bound to be influenced by the education of policy makers, entrepreneurs and manag-

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ers. The productivity of sugarcane workers in Guatemala, for example, increases fairly immediately as their current intake of calories or micro-nutrients is increased.<sup>7</sup> A large longitudinal study of children in Chile showed that providing nutritional supplements to children would generate benefits 6-8 times the cost of the intervention in terms of additional productivity.<sup>8</sup> A similar study in Cali, Colombia found that a health/nutrition program increased the lifetime earnings of individuals from 2 1/2 to 9 times those of an illiterate worker.<sup>9</sup> The impact of education on the nature and growth of exports and of being able to take advantage of export opportunities, which, in turn, affects the aggregate growth rate, is another way in which human development influences EG. Even so-called unskilled and semi-skilled workers normally need a literate/numeric-related discipline, acquired in primary and secondary school environments, to be effective in a factory context.

It should be noted that income distribution plays an important role once again in Chain B. For example, while improvements in human development can affect income distribution, Alesina, Tabellini and others<sup>10</sup> have pointed out that an improved income distribution can mean faster growth as the median voter is satisfied and does not agitate for unwise macro-economic expansionary policies. A more unequal distribution of income is likely to be associated with greater political instability and, therefore, more likely to interfere with growth. For example, a study of the relationship between schooling, income inequality, and poverty in 18 Latin American countries in the 1980s found that 1/4 of the variation in workers' incomes was accounted for by variations in schooling attainment. The study concluded "clearly education is the variable with the strongest impact on income equality."<sup>11</sup> Education may also affect per capita income growth through its impact on the denominator, i.e., population growth. The higher the level of schooling, especially female schooling, the lower the levels of fertility, often working their way through infant mortality rates. Just as in Chain A, the strength of the links in Chain B vary substantially across countries. For example, the increased supply of more educated people, by themselves, won't do the job. One must also have the requisite demand, i.e., opportunities for employing these same people, depending on investment levels, technology choices made, etc.

### SECTION III. THE RELEVANT EMPIRICAL FINDINGS

The above reasoning and inductive evidence led us to a set of hypotheses about the links between HD and EG in both causal directions. We ran cross-country regressions including 35-76 developing countries (depending on data availability) for the years 1960-92, the results of which we present here. The intent was to identify the more significant variables in Chain A

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affecting improvements in HD, using life expectancy shortfall reduction between 1970 and 1992 as the short-hand indicator of such improvement.<sup>12</sup> Summarizing our findings:

1. GDP growth per capita was significant in all cases. Our results indicate that a 1% increase in the growth rate would lead to a reduction in the life expectancy shortfall of 3%.
2. The social expenditure ratio, i.e. the percentage of government expenditure devoted to human development-related activities, was significant in all equations; a 1% increase in this ratio resulted in a 1.75% reduction in the life expectancy shortfall.
3. Even more interesting was the finding that the social expenditure ratio's impact on the level of human development seems to work through the female primary educational enrollment ratio, i.e. when the female primary enrollment ratio is added in our equations the social expenditure ratio coefficient, while still of the right sign, ceases to be significant.

Turning to our empirical findings on Chain B, with GDP per capita income growth between 1970 and 1992 as the dependent variable, we found:

1. The initial level of human development as summarized by life expectancy was consistently highly significant.
2. Adult literacy, life expectancy, as well as a more comprehensive definition of human development (i.e. one including education), were significant in several equations.
3. The investment rate was consistently significant.
4. A better distribution of income was associated with a higher rate of growth, except in the case where regional dummies were introduced. This agrees with the findings of Alesina, Perotti, and Rodrik.
5. The initial level of GDP per capita was significant, carrying a negative sign, thus indicating the existence of some convergence among developing countries, i.e. the lower that initial level, the more catch-up can be expected, presumably through technology borrowing by latecomers.

Given these findings of positive links between EG and HD, we may note that an individual country may find itself in a virtuous cycle, with vigorous growth leading to improved

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human development, and improved levels of human development in turn leading to vigorous growth, i.e., especially if the links in both these chains are strong. But it is also true that if these links are strong weak growth will lead to weak human development and weak human development in turn will lead to weak growth, which would be tantamount to a vicious cycle. On the other hand, we may also note that there may exist two types of “lopsidedness” if the linkages between HD and EG happen to be weak. One could, for example, encounter good growth but poor human development (EG-lopsidedness), e.g., because there is a low public expenditure ratio, or one could encounter good human development and poor growth (HD-lopsidedness), e.g., because the investment rate is low. We may also hypothesize that such lopsided cases are unlikely to persist for very long, but turn into either vicious or virtuous cycle cases over time.

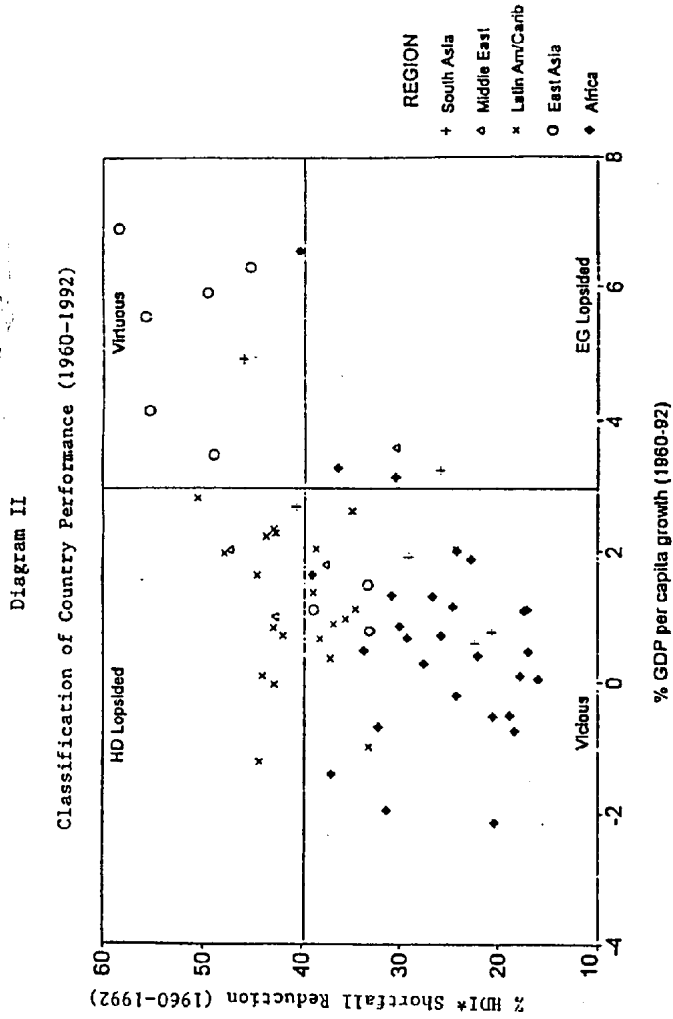
Putting these categories to the test, we compare the performance of all developing countries for which we have data between 1960 and 1992, in Diagram II, with each country compared to the average, weighted by population, with respect to their human development and economic growth performance. We may note the existence of four quadrants: virtuous and vicious cycles in the northeast and southwest quadrants, respectively, and the two different types of lopsidedness in the northwest and southeast quadrants. Seven out of the eight virtuous quadrant countries are in East Asia, while 21 out of 37 in the vicious cycle category are in sub-Saharan Africa, with 9 in Latin America. Moreover, there are a substantial number of HD-lopsided cases but very few EG-lopsided cases. Ten of the 13 HD-lopsided countries are in Latin America, while the four EG-lopsided cases are Egypt, Pakistan, Mauritius and Lesotho.

From the point of view of policy, of course, an important question of how a country is capable of transiting over time, presumably with the objective of ending up in a virtuous cycle at the end of the day. By examining the location of our countries on a global basis in each of the three decades between 1960 and 1992, we may make the following observations:

1. Over half the countries in the vicious cycle category in 1960-70, i.e., 18 out of 35, remained in that category throughout. Most of these countries were in Sub-Saharan Africa, which started with very low levels of HD, handicapping their growth potential; their low growth rates and, subsequently, the debt crisis prevented them from generating the resources necessary for improvements in HD.



- Six countries moved from vicious cycle to EG-lopsided between the 60s and the 70s, but four of them fell back to the vicious cycle category in the 80s. Three moved from vicious to HD-lopsided, including Honduras, Algeria and Madagascar, and only Madagascar returned to the vicious cycle category. Kenya, which moved from vicious to virtuous in the 1970s, also



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subsequently fell back to vicious. Only two countries managed to move from the vicious to virtuous category on a sustained basis, i.e., Sri Lanka and Botswana.

3. Of the eight countries which were EG-lopsided in 1960-70, none stayed in that category throughout, but all moved into the vicious category. One — Pakistan — reverted to EG-lopsided in the 1980s. Brazil and Egypt enjoyed relatively fast growth during the 1960s and 1970s (over 3% in the 1960s and about 6% in the 1970s) but did not utilize this opportunity to improve the levels of HD substantially. In the case of Brazil the highly unequal income distribution (with a Gini of 0.634, one of the worst in the world) was one reason why reasonably good growth did not translate into HD improvements. In both Pakistan and Egypt public expenditure on health and education was low, partly due to heavy expenditure on the military, while Pakistan's HD performance suffered, especially from discrimination against females.
4. Of the thirteen HD-lopsided countries in the 1960s, only Costa Rica stayed in that category throughout: four moved into a virtuous cycle — Chile, China, Colombia and Indonesia (Colombia later falling back to HD-lopsided). In these cases, early progress in human development meant that they were able to take advantage of economic policy reforms for generating growth. Egalitarian income distribution also assisted the movement towards a virtuous cycle. Four moved initially from HD-lopsided into the vicious category (Venezuela, Myanmar, Peru, and El Salvador<sup>13</sup> — the latter two moving back into HD-lopsidedness in the 1980s).<sup>14</sup> Three — the Dominican Republic, Guatemala, and the Philippines — initially moved to EG-lopsided and subsequently fell back into the vicious category. Among the reasons for the failure to move into high economic growth were the debt situation, poor economic policies and internal disturbances. Consequently, they were unable to maintain the rate of progress in HD because of slow economic growth.
5. Thirteen countries were in the virtuous cycle category in the 1960s; five retained this position throughout; and five fell back into the HD-lopsided and three into the vicious category.<sup>15</sup> Mostly, the countries that fell back were subject to the depressing effects of the 1980s debt crisis on economic growth.
6. It is important to note that lopsidedness was a temporary condition in all cases except Costa Rica.<sup>16</sup> Our

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most significant finding is that, while HD-lopsidedness permitted movement towards a virtuous cycle (occurring in about a third of the cases), *in the case of EG-lopsidedness, all the cases reverted to a vicious cycle*. Very few countries managed to go directly from vicious to virtuous; but some succeeded in moving to HD-lopsided, from where it was possible to move into the virtuous category. Our analysis suggests that it is not possible to move to virtuous via EG-lopsidedness, as this proved a dead end.

The significance of all this may now be summarized. It seems clear that lopsidedness, as mentioned earlier, proved a temporary condition for all but one country, i.e. Costa Rica. One-third of the HD-lopsided became virtuous; all the EG-lopsided became vicious. An important conclusion flowing from this is that the best path from vicious to virtuous is to attempt to move through HD-lopsidedness. In common sense terms this means a system should first strengthen the links in its Chain A by shifting resources to education and health in order to improve its human development; only then will it be able to move from HD-lopsided, through a strengthening of links in Chain B, to further enhance growth. While all this is basically an iterative process, the phasing of policy change does appear to be critical. Thus the often held position that we should first “get the fundamentals right” to ensure good economic growth, while human development has to wait, is in error. Human development improvement must precede or at least accompany the improvement in growth. What was intuitively seen as correct by only a few observers<sup>17</sup> generally holds up very well empirically.

Let us now focus more explicitly on Latin America and the Caribbean, with the help of Table I.

It should be noted that we are not concerned with the level of per capita income or the level of human development, but with changes in per capita income and its two-way relationship with changes in human development, i.e., HD progress as measured by life expectancy shortfall reduction. Of all the Latin American countries listed, Brazil, Jamaica, Venezuela and Haiti are the worst performers; Chile, Mexico, Colombia and Barbados are the best, with Argentina and Peru giving signs of moving towards a virtuous cycle. In what follows, we present thumbnail sketches of the performance of some of these countries over the three decades.

**POOR PERFORMERS**

**Brazil (EG-lopsided, EG-lopsided, Vicious)**

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More so than perhaps any other country in Latin America, Brazil typifies the case where a development approach, focused primarily on rapid economic growth, with insufficient regard for the links between growth and human development, eventually led to poor performance in both dimensions.

For much of the past three decades, Brazil posted one of the more remarkable growth rates in the developing world. An ambitious modernization program in the 1960s and 70s premised on capital accumulation, import-substituting industrialization and a rapidly growing labor force, helped produce average annual GDP growth rates in excess of 9 percent from 1960-85.<sup>18</sup>

**Table I**

	<b>1960-1970</b>	<b>1970-1980</b>	<b>1980-1992</b>
Argentina	Vicious	Vicious	HD lop-sided
Barbados	Virtuous	HD lop-sided	HD lop-sided
Brazil	EG lop-sided	EG lop-sided	Vicious
Chile	HD lop-sided	HD lop-sided	Virtuous
Colombia	HD lop-sided	Virtuous	HD lop-sided
Haiti	Vicious	Vicious	Vicious
Jamaica	Virtuous	Vicious	Vicious
Mexico	Virtuous	Virtuous	HD lop-sided
Peru	HD lop-sided	Vicious	HD lop-sided
Venezuela	HD lop-sided	HD lop-sided	Vicious

Nevertheless, this quite spectacular growth did not produce a commensurate effect on human development. Brazil's educational indicators are considerably worse than those of Latin America's seven other upper middle-income countries (Argentina, Chile, Colombia, Costa Rica, Mexico, Uruguay, and Venezuela): the illiteracy rate for the population aged 15 years and older in Brazil is approximately 10 percent higher than the average of those countries; the school attendance rate for children 6 to 11 years old is 15 percentage points lower; and the proportion of repeaters in the first grade is 10 percentage points higher.<sup>19</sup> Health indicators are also relatively weak. While Brazil experienced quite a notable decline in its infant mortality rate (IMR) over the last fifty years — decreasing in absolute terms by more than 100 deaths per 1,000 live births — infant mortality is still higher than in almost every other Latin American country.<sup>20</sup>

The chief culprit in Brazil's relatively disappointing HD record appears to be a highly unequal income distribution. Having inherited a very unequal distribution of power and land from its colonial past, Brazil did little to modify such patterns through two decades of quite spectacular growth. For example, it has never attempted any serious program of land reform.<sup>21</sup> As a result, Brazil has one of the poorest distributions of income.

While poor income distribution adversely affected household expenditure on human development, Brazil's poor HD allocation and priority ratios also affected the quantity and quality of public spending on social sectors. Throughout the 1960-92 period, HD-allocation ratios were comparatively low. Brazil's combined expenditure on education and health as a portion of total government expenditure was between one-fourth and one-half that of Argentina and Chile.<sup>22</sup> Furthermore, Brazil's social spending declined at the end of the 1970s, with education particularly affected. The share of total expenditure devoted to education decreased from about 6.5 percent in the 1970s to only about 3 percent in the 1980s<sup>23</sup> and geared largely to higher education, while neglecting technical schools.

Brazil's priority ratios, particularly in health, were also deficient. Although large numbers still die as a result of infectious diseases, public expenditure on health has been characterized by a large and growing emphasis on curative and a corresponding decline on preventive medicine. The portion of public expenditure on curative services increased from 35.8 percent in 1965 to 84.6 percent in 1982, while that for prevention decreased from 64.1 percent to 15.4 percent over the same time period.<sup>24</sup> Sophisticated treatments in São Paulo, including heart surgery and organ transplants, are estimated to consume 40 percent of all public

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resources allocated to health, while benefiting only 3 percent of the population.<sup>25</sup>

#### **Haiti (Vicious, Vicious, Vicious)**

Due to strong links, Haiti has found itself on a trajectory of low growth and poor human development for most of the past three decades. Although growth was moderate during the 1960s and 70s, averaging 5.3 percent during the second half of the 1970s,<sup>26</sup> improvements in real per capita income failed to translate into widespread gains in human development due to a highly unequal distribution of income. While there is disagreement about the magnitude of inequality,<sup>27</sup> it is clear that income was (and still is) concentrated within urban areas, a significant result considering that three-quarters of the population lives in rural areas and that agricultural production has declined on a per capita basis since the 1970s.<sup>28</sup>

Haiti's tax system served to weaken both expenditure ratios and increased income inequality, with collection weak and the structure highly regressive. Public expenditure on primary education as a percent of GNP, for example, decreased from approximately 0.9 percent a year in 1965 to 0.6 percent a year by 1985.<sup>29</sup> Per capita public health expenditures have also declined more than 15 percent from 1980-85.<sup>30</sup>

The priority ratios were also unfavorable, especially in the health sector. Over half of the physicians employed by the Ministry of Public Health and Population reside in the capital, leaving only 1.4 physicians per 10,000 people in rural areas.<sup>31</sup> This has worsened the efficiency of the Human Development production function, leading to a high incidence of malnutrition and morbidity. About 30 percent of rural children and 48 percent of urban children are anemic, while 90 percent of deaths among 1-4 year old children are associated with malnutrition and diarrheal diseases.<sup>32</sup>

As for Chain B, rampant corruption leading to highly inefficient public investment decisions has continuously dampened growth. Negative reinforcement between the two chains has also worsened over time, i.e., during 1980-91, real GNP per capita fell by about 2 percent per annum.<sup>33</sup> This decline further deteriorated living standard such that Haiti's growth and HD record today resemble those of sub-Saharan African countries rather than those of its Caribbean neighbors.<sup>34</sup>

#### **Jamaica (Virtuous, Vicious, Vicious)**

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Jamaica found itself in a virtuous cycle during the 1960s, largely as a result of rapid economic growth, combined with a strong government commitment to HD. Development of the bauxite and alumina industries stimulated development, with GDP increasing at an average of 6.3 percent per year during the 1952-72 boom period.<sup>35</sup> This, in turn, increased public expenditure on HD goods, with social expenditure increasing from 5.6 percent in 1960 to 12.1 percent of GDP in 1975.<sup>36</sup> The policy setting during the 1960s clearly favored human development. The two major political parties sharing power at the time were committed to social reform, expanding education and health services, constructing low income housing and supporting small farmers through extension services. Primary school enrollment expanded from 65 to 85 percent, and secondary enrollment from 15 to 58 percent from 1960-70, while life expectancy increased and infant mortality declined.

During the 1970s severe external terms of trade shocks led to sustained economic contraction, with sharp cut-backs in public expenditure and increases in the poverty rate.<sup>37</sup> This was followed by severe adjustment policies in the 1980's. Real spending on education and health fell about 30 percent between 1980 and 1986.<sup>38</sup> This decline in social spending was further accentuated by the adjustment policies of the 1980s, leading to deterioration in nutrition, education and health levels, although debate surrounds the exact magnitude of such effects.<sup>39</sup> The quality of public education has declined not only because of reduced public expenditure, but also because of a poor HD priority ratio partly due to the top-down allocation of resources. Expenditure per head on tertiary-level students was excessively high compared with spending on secondary and primary students.<sup>40</sup> The neglect of primary education has resulted in serious literacy problems among the student population, with some 30 percent of those leaving the primary school system thought to be functionally illiterate.<sup>41</sup>

Links in both chains were consequently weakened. The retreat into the vicious cycle, however, was not due entirely to external factors. On the one hand, during the 1970s populist domestic policies eroded investor confidence, further weakening the links in Chain B. Jamaica's increased economic dualism also meant that income distribution worsened, especially in the rural areas, with a negative impact on EG. Indeed, Jamaica's already extremely unequal distribution of income worsened during the 1960s and 70s. By 1971/72, the bottom 58 percent of households earned less than 16 percent of total income, while the top 10 percent earned 50 percent.<sup>42</sup> On the other hand, the adjustment policies of the 1980's

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involved substantial reductions in public expenditure on HD, weakening the links in Chain A.

**Venezuela (HD-Lopsided, HD-Lopsided, Vicious)**

Along with Jamaica, Venezuela represents a case where natural resource abundance has led to ‘boom and bust’ cycles in human-development reminiscent of the Dutch Disease. During times of high oil revenue, HD progress has typically been very good, largely as a result of expansionary spending programs, only to deteriorate drastically once oil prices have weakened and the public expenditure ratio declined.

Social spending on priority HD sectors kept pace during the first two decades. The share of the central government budget going to education and health increased throughout, with education spending rising from 6 percent of government expenditure in the 1950s to nearly 15 percent in 1971.<sup>43</sup> The literacy rate increased rapidly, with primary and secondary school enrollment growing much faster than the population,<sup>44</sup> helping to explain Venezuela’s human-development bias during this period.

Interestingly, though educational and health indicators suffered during the 1980s, expenditure on social services did not appear to suffer disproportionately large cuts. For example, the share of the central government budget devoted to education decreased only from 14.4 percent in 1981 to 12 percent in 1990.<sup>45</sup> Rather, what seemed to be at issue was poor resource use, that is, a worsening of the HD production function linking inputs to outputs. During the 1980s, there was a shift in the composition of social service expenditures, with increasing shares devoted to support, planning and administration, and decreasing shares to operational programs and inputs, leading to marked inefficiencies in the delivery of education and health outputs.<sup>46</sup> Partly as a consequence, teaching quality has declined, while school dropout rates have increased. Only one-third of the student population continues in education past the ninth grade.<sup>47</sup> Similarly, decaying infrastructure and shrinking budgets in the health sector have led to a situation where in 1990, 46 percent of Venezuela’s 300 public hospitals were in need of repair.<sup>48</sup>

Poor priority ratios in education have further weakened the two-way links between human development and growth. Universities receive over 50 percent of education spending in Venezuela, compared with about 25 percent in the rest of Latin America.<sup>49</sup> The structure of Venezuela’s education system has, moreover, focussed excessively on academic and philosophical rather than vocational and scientific subjects.<sup>50</sup>



Links in Chain B were relatively weak. When Venezuela found itself in a boom following increases in oil prices in the 1970s, rather than investing in sectors which might have generated more broad-based employment opportunities and taking advantage of higher HD levels, the government instead encouraged capital-intensive import substitution industries in steel, aluminum and petrochemicals.<sup>51</sup> Such policies enhanced the structural rigidities in the economy, thereby increasing Venezuela's vulnerability to external shocks, worsening income distribution and reducing growth.<sup>52</sup> As a result, once the external situation deteriorated in the 1980s, Venezuela found itself in a very difficult situation. A large rise in real interest rates in the international financial markets in the early 1980s, coupled with the sharp drop in oil prices in 1986, triggered an economic crisis, plunging Venezuela into a low-growth and poor-human development decade: per capita income declined every year between 1979 and 1985 while poverty rapidly increased.<sup>53</sup>

As with most developing countries during the 1980s, external shocks generated real costs in human development as a result of declining per capita income. Such effects were particularly severe in Venezuela. Between 1981 and 1990 the number of people living in poverty doubled from 24 to 59.2 percent, while the Gini Coefficient rose from 0.39 to 0.44.<sup>54</sup>

## **GOOD PERFORMERS**

### **Barbados (Virtuous, HD-Lopsided, HD-Lopsided)**

In contrast to Jamaica, which started out in the virtuous category but subsequently moved into vicious development, Barbados began the 1960s in a virtuous cycle and managed to stay in HD-lopsidedness afterwards, continually improving its HD record over the past twenty years.

Such sustained improvements were the result of strong links in Chain A which allowed Barbados' steady economic growth — averaging 3.2 percent per year from 1966 to 1996<sup>55</sup> — to translate into real gains for human development. On the household side, a sustained improvement in income distribution helped to increase household resources for human development. While income distribution became more unequal during the 1950s, this trend was reversed, with the Gini Coefficient decreasing from 0.4 in 1960 to 0.28 in 1981.<sup>56</sup>

Improvements in female education and female participation in the labor market also contributed to improving household HD expenditure patterns. The number of women entering formal sector employment increased 21.6 percent over the

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1970 to 1993 period,<sup>57</sup> helping to explain the reduction in income inequality.

On the public sector side, HD expenditure ratios were favorable and increasing. During the 1970s and 1980s, the health sector accounted for between 15 and 20 percent of current expenditures, and 5 to 15 percent of capital outlays, while the comparable figures for education were in excess of 20 percent of the current budget, and about 10 percent of the capital budget.<sup>58</sup> In comparison, Brazil's outlays as a percent of total expenditures for the same period ranged between 3-5 percent for education and 6-10 percent for health.<sup>59</sup>

The portion of public expenditure earmarked for 'priority' areas also improved, with health funds devoted to improving sewage services, water quality, and the development of community health centers providing dental, maternal and child care, and out-patient medical and psychiatric services.<sup>60</sup> Active family planning programs introduced in the 1950s were particularly important, helping to reduce the fertility rate from 2.8 in 1970 to 1.7 in 1991, undoubtedly contributing to both the rise in female employment and GDP per capita.<sup>61</sup>

Over the same period, improvements in the HD production function also helped overall HD performance. In health, the government targetted funds more efficiently by providing school meal programs, while, in education, the government increased access, resulting in a favorable situation, with less than 5 percent of the total enrollment in primary and secondary schools in the private sector.<sup>62</sup>

With regard to Chain B, Barbados also took important steps to utilize the improvements in human development by diversifying the economy. Starting in the 1970s, the Barbados became less dependent on primary (i.e., sugar) exports, with the share of manufactured exports and tourism gradually increasing to comprise two-thirds of exports by the 1980s.<sup>63</sup> Not only did this make the economy more dynamic, but it also fed back into the HD-EG cycle and improved human development by increasing employment opportunities, particularly for women. The government further strengthened links in Chain B by developing a number of vocational schools in response to the changing employment demand, developing a hotel school and teacher training center.<sup>64</sup>

The oil shocks of the 1970s and early 1980s did generate recessions in the Barbadian economy, reducing growth. What is significant, however, is that such declines in economic growth did not severely affect Barbados' social programs or its HD progress, permitting it to improve its HD record throughout.

**Chile (HD-Lopsided, HD-Lopsided, Virtuous)**

What makes Chile an interesting case from our perspective is that, even when faced with economic crisis and major structural reforms, it managed to safeguard the HD improvements achieved in previous decades that eventually allowed it to move into a virtuous cycle.

Chile has had a long tradition of a balanced development orientation. From the 1920s onwards, successive governments have made substantial investments in the social sectors, with the state playing a very prominent role in the provision of education, health, housing and social security.<sup>65</sup> By the end of the 1960s the links in Chain A were very well developed: social expenditure comprised 20 percent of GDP; registration in primary education covered 95 percent of the 6-14 year olds; and 81 percent of births were delivered by professionals.<sup>66</sup>

When hit by recessions in the late 1970s and early 80s, Chile's post-1973 military government undertook substantial adjustment programs characterized by a reduction in the state's economic role. This resulted in a decline in both the public expenditure and HD-allocation ratios, with social spending as a share of GDP declining every year from 1984 to 1990.<sup>67</sup> Despite this reduction, Chile's HD was largely left intact, due mainly to improvements in the targetting and effectiveness of its existing social expenditure, that is, the HD priority ratio and production function. The government developed a number of special programs and subsidies designed to protect the most vulnerable strata of society, especially mothers and children, during the adjustment period. These included a family subsidy for those in extreme poverty, supplementary feeding program for mothers and preschoolers (2-5 years old), as well as programs for nutritionally deficient children and a school feeding program designed to help reduce drop-out and repetition problems.<sup>68</sup>

Other measures designed to strengthen the delivery of social services included the decentralization of education and health to municipalities, focussing restricted health budgets on disease prevention rather than curative medicine, and an increase in the collaboration between private and public health care providers.<sup>69</sup>

The observed pattern of human development indicators suggests that government actions to maintain the strength of the links in Chain A during times of crisis were successful. For example, the prevalence of moderate and advanced malnutri-

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tion declined to their lowest rates since the mid-seventies in 1987.<sup>70</sup> Infant mortality also fell, from 73 percent per 1,000 live births in 1972 to 17.1 per 1,000 in 1989,<sup>71</sup> while drop-out rates in primary education among public schools declined from 7.1 percent in 1977 to 5.1 percent in 1984.<sup>72</sup> Admittedly, there were some real costs of adjustment, as unemployment increased a great deal, from 6 percent in the 1960s to more than 16 percent during 1974-81, and income distribution worsened, with the Santiago Gini Coefficient increasing from 0.47 in the 1960s to 0.51 in 1978-82.<sup>73</sup> Poverty rates rose sharply in the 1980's, but extensive emergency employment schemes were deployed to prevent excessive deterioration.

In some important respects, Chile's adjustment programs have also contributed to better HD by strengthening the links between HD and EG. Chile's reform of the labor market increased its flexibility and eventually the availability of employment opportunities, while its trade liberalization measures have improved the deployment of Chile's substantial factor endowments and increased investment from abroad.<sup>74</sup> As a result, Chile developed into quite a dynamic economy in the 1990s, with good progress in human development along with respectable growth.

#### **Colombia (HD-Lopsided, Virtuous, HD-Lopsided)**

Sustained improvements in a not very equitable income distribution have played a key role in Colombia's very good human development record. Labor's increasing share of income since the 1970s — a function of economic policies that made the labor market more flexible and increased labor-intensive minor industrial exports, i.e. strengthening the links in Chain B, — help to explain some of these sustained improvements in income distribution.<sup>75</sup> The production and trade in drugs may also have contributed. Both the quantity and quality of public expenditure, however, also contributed much. During the period under consideration, HD-allocation ratios consistently rose: per capita public social expenditure grew by 4 percent per year in real terms between 1970 and 1995, doubling its share of GDP from 6.7 percent to 12.5 percent.<sup>76</sup> More importantly, priority ratios also improved steadily, with public expenditures becoming more progressive between 1975 and 1995 and the coefficients of concentration for public expenditure on education and health indicating that a larger proportion reached the poor.<sup>77</sup> According to some estimates, the redistributive effect of social spending from 1975 to 95 helped to reduce the Gini Coefficient by 1.6 points.<sup>78</sup>

Increasing levels of education among women point to the role of another important link. Significantly, by 1992, female enrollment rates were higher than male rates at all levels of schooling, in both rural and urban areas and across income groups.<sup>79</sup> This decrease in gender bias helped to increase female participation rates in the labor force, and reduce earning differentials between men and women.<sup>80</sup> For example, the average hourly wage differential favoring men by 30 percent in 1976 disappeared by 1992.<sup>81</sup>

As a result of strong links in Chain A, Colombia was able to take advantage of its very stable GDP growth — which averaged 4.5 percent from 1970-93<sup>82</sup> — to improve HD in every decade. Almost all indicators show sustained progress: basic literacy rose from 57 percent to approximately 90 percent from 1959-93; infant mortality rates have decreased from the 1960s when it was 15 percent above international levels to about 25 percent below the internationally expected level for countries with Colombia's national income; and poverty, using unmet basic needs as the criterion, decreased between 1970 and 1995, in marked contrast with the situation in the rest of Latin America.<sup>83</sup>

There are also indications that improvements in HD helped economic growth via the strength of Chain B. An increased flexibility in the labor market permitted the composition of exports to change significantly during the 1970s and 80s, with a gradual move from labor intensive exports to expanding the share of skill-intensive manufactured exports.<sup>84</sup> Partly as a consequence, total factor productivity grew during the 1970s, helping to explain Colombia's move into the virtuous cycle category.<sup>85</sup> The links in Chain B, however, weakened towards the end of the 1970s, the result of stagnation in the growth of total factor productivity, and a lack of dynamism in investment. When combined with the deterioration in the external economic environment, Colombia's growth rate slowed, but stayed positive, explaining its retreat back to HD-lopsided development in the 1980s. The sustained success of Colombia may more recently, however, be coming under threat from a combination of macro-economic mistakes and a rising level of violence weakening both chains.

#### **Mexico (Virtuous, Virtuous, HD-Lopsided)**

Along with Chile, Mexico has come closest in Latin America to achieving virtuous development throughout the 1960-92 period.

The 1960s and 70s were times of virtuous development as a result of earlier reforms which reinforced the connection between growth and

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HD improvements in Chain A. Unlike Brazil, Mexico instituted major land reforms earlier this century. Absolute poverty declined during the 1960s and 70s, with some studies suggesting the number of poor families dropping by as much as 40 percent between 1950 and 1975.<sup>86</sup> There is less certainty, though, regarding the level and changes in income distribution, which appear to have remained at rather unfavorable levels, i.e., Ginis between 0.5 and 0.6.<sup>87</sup>

The general policy setting and prevailing political ideology seem to have contributed to strong links in Chain A. A central pillar of post-revolutionary governments has been a strong commitment to social development. In the 1960s, this took the form of an ‘Alliance for Progress’ framework, which sought to enhance land reform, health, sanitation, education and food production.<sup>88</sup> In the 1970s, the Echeverría and Portillo governments developed the strategy for ‘shared development’ — *desarrollo compartido* — focused on redistributing economic growth through higher social expenditure ratios.<sup>89</sup> Educational expenditure averaged around 18 percent of total government spending in the 1970s, while health averaged around 5 percent.<sup>90</sup> Good priority ratios also contributed to improvements, with primary education and vaccination programs receiving the bulk of social spending.<sup>91</sup>

As a result of favorable spending patterns and a reduction in poverty, HD improved substantially between 1960 and 1980. Life expectancy increased from 59 years to 66 years; infant mortality decreased from 74.2 per 1,000 births to 53.1; literacy among 15 year olds and older increased from 66 percent to 83 percent; and educational enrollment as a percentage of the population almost doubled, from 16 percent to 30 percent.<sup>92</sup> Such HD improvements, moreover, fed back into the HD-GNP cycle as total factor productivity increased in the 1960s and 70s, contributing to Mexico’s very robust growth rates.<sup>93</sup> Over the 1950-70 period, Mexico’s annual GDP grew at 6.6 percent, resulting in an average increase of 3.3 percent in GDP per capita<sup>94</sup> and helping to produce a virtuous cycle of development.

The story in the 1980s was different, as macroeconomic imbalances and the debt crisis produced a contraction in growth. Mexico cut its public expenditure ratio, with a corresponding decline in HD spending, which contracted by 6.2 percent a year between 1983 and 1988.<sup>95</sup> These cuts especially affected education, which saw its share of total expenditure drop by 29.6 percent, with most of the reduction absorbed by primary education.<sup>96</sup> HD indicators have as a result been affected. Student-teacher and student-school ratios, proxies for the quality of education, both declined between

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1983 and 1988, while per capita medical units, hospital beds, and doctors available in the 'formal' health sector also fell<sup>97</sup>

Nevertheless, like Chile, Mexico attempted to address the weakening of Chain A's links through a more efficient use of public funds. While the government cut its program of general transfers, it attempted to target existing food subsidies specifically to the poor through the *Programa Nacional de Alimentacion* (PRONAL).<sup>98</sup> At a more general level, an important policy mitigating the impact of adjustment, its macroeconomic consequences notwithstanding, was the temporary expansion of public sector employment. Another development, which has helped Mexico to remain in HD-lopsided development despite economic decline, has been the improving gender situation in Mexico. Women's rights have gradually been institutionalized in Mexico's legal framework during the 1980s.<sup>99</sup> Female participation rates in formal sector employment have increased, the schooling gap between men and women has declined, and there appears to be no difference between male and female rates of infant mortality, a sensitive measure of discrimination in access to health care.<sup>100</sup>

#### QUESTIONABLE PERFORMERS

##### **Argentina (Vicious, Vicious, HD-Lopsided)**

Argentina, like Peru, has exhibited an ambiguous record of development, experiencing low growth and human development for two decades before moving into HD-lopsidedness in recent years.

Growth rates in the 1960s began to slow due to the increasing unsustainability of import-substitution policies implemented in previous decades.<sup>101</sup> While Argentina's human development record during the 1940s and 50s had been relatively good, by Latin American standards, it began to slacken as a result. Nevertheless, successive military regimes introduced measures aimed at improving living standards, including retirement benefits for domestic servants; family allowances; health insurance for retired workers; and a social housing fund (FONAVI).<sup>102</sup> Despite such efforts, human development actually worsened in the 1970s. Three factors conspired to weaken Chain A. First, income distribution became more uneven and poverty increased. Between 1970 and 1980, the upper decile of household enlarged its share of total income by almost 5 percentage points, while the lower strata lost almost 3 percentage points.<sup>103</sup> Real wages also fell by 30 percent after the 1976 wage freeze, increasing the

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portion of the population falling into poverty.<sup>104</sup> Second, HD allocations as a share of the public expenditure ratio declined due to increased security expenditures that crowded out the social sectors. As a percent of GDP, expenditure on education fell from 4 percent in 1973 to 2.6 percent in 1977, indicating a decline in real terms as GDP also fell over the same period.<sup>105</sup> Third, the HD production function weakened, as the lack of coordination between private and public HD providers, particularly in health care, reduced the relative efficiency of HD inputs.<sup>106</sup>

Several undesirable changes in Chain B also contributed to the vicious cycle of the 1970s. Labor-force participation rates started to fall quite sharply; the activity rate of adult male household-heads of working age decreased from 53.6 percent in 1960 to 50.3 percent in 1980, while that of females stagnated after substantial growth in the previous decade.<sup>107</sup> Obviously, the substantial slow-down of economic activity after 1974 contributed to the underutilization of labor. However, economic policy implemented after 1976 exacerbated the situation. An overvalued currency led to a contraction in manufacturing employment, as did the very rapid liberalization of trade and the privatization of public enterprises, further dampening labor demand.<sup>108</sup> To make things worse, Argentina's educational curricula did not keep pace with changes in the type of labor demanded.<sup>109</sup>

Surprisingly, however, just as the debt crisis exacerbated macroeconomic disequilibrium and GDP contracted by 9.4 percent between 1980 and 1990,<sup>110</sup> Argentina managed to move into the HD-lopsided category. This occurred due to a strengthening of Chain A after 1982. Even though public expenditures fell in the 1980s, HD spending did not suffer disproportionate cuts. In fact, total public social spending measured in constant prices was almost 30 percent higher on average during the 1980s than during the 1970s while, in per capita terms, it was 8 percent higher on average than in the previous decade.<sup>111</sup>

Not only did larger HD expenditure ratios strengthen Chain A, but the more efficient use of HD-inputs also contributed. For example, public health funds became more progressive. During the 1980s there was a rise in the number of patients from lower-middle class households using public hospitals, while an estimated 44 percent of expenditures on public hospitals went to the poorest quintile of households in 1986.<sup>112</sup> There is also some evidence that the steady decentralization of social services to provincial and municipal authorities, beginning with primary education in 1978, has gradually improved the quantity and effectiveness of their delivery.<sup>113</sup> Moreover, the government also began to improve priority ratios by attempting to target the poor through the



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National Food Program (PAN) begun in 1984, providing food subsidies to poor households for the first time<sup>114</sup>

As a result of the increase in HD-allocation ratios and improvements in the HD production function, human development performance during the 1980-92 adjustment period appears to have been better than in the previous two decades, with improvements in many indicators. Infant mortality, for example, dropped from 33.2 to 25.6 per thousand births between 1980 and 1990.<sup>115</sup> Similarly, poverty, while increasing at the very beginning and end of the decade, appears to have decreased from 1991 onwards due to increases in real wages.<sup>116</sup> Given the social sector reforms of the early 1990s — with further decentralization and reform of pension and tax systems — and despite the recent Brazil-related hiccup, Argentina may well be on its way to an eventual move into the virtuous cycle of development.

**Peru (HD-Lopsided, Vicious, HD-Lopsided)**

The 1960s were a relatively good decade for Peru, as it managed to advance its human development performance. Income distribution was not favorable, with some studies showing that the concentration of income actually increased during the 1960s.<sup>117</sup> Nevertheless, absolute living standards did improve because economic growth managed to increase workers' real incomes as well as public expenditure on education.<sup>118</sup> Between 1958 and 1968 primary education enrollment doubled, while that for secondary education tripled.<sup>119</sup> Similarly, the rate of illiteracy shrank from 57 percent in 1940 to 28 percent by the end of the 1960s.<sup>120</sup>

Chain B results worsened in the 1970s as a result of sharp declines in public investment that had serious consequences for capital accumulation. The decline in Peru's ratio of investment to GDP was three times as great as elsewhere in Latin America between 1975 and 1985.<sup>121</sup> Growth rates suffered also as a result of the debt crisis, sparking a protracted recession in the 1975-90 period, leading to a 1/3 decline in per capita income.<sup>122</sup>

The decline in EG, in turn, tended to reduce private as well as public outlays on HD inputs. For example, expenditure on education, health, housing and employment fell starting in 1975, both in absolute and per capita terms and as a proportion of total government expenditure.<sup>123</sup> A worsening pattern of income distribution and poverty also affected Chain A adversely. Although the Velasco regime attempted some redistributive programs, they proved largely ineffective.<sup>124</sup>

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Consequently, HD indicators fell somewhat during the next two decades, although a massive expansion of the informal and NGO sector may have helped mitigate the problem.

Peru's performance in the 1980s highlights the importance of income distribution for both chains. The worsening of income distribution in the 1970s led to increased social unrest and internal disturbances. Kidnappings, bombings and acts of sabotage have increased rapidly, while the number of violent deaths per capita rose substantially after 1987.<sup>125</sup> All this has weakened Chain B, depressing the growth rate by damaging infrastructure, increasing security costs and discouraging foreign investment. It has also had an effect on human development not only as a result of direct physical violence, but also because the government has had to divert public funds away from essential social services.

Nevertheless, Peru moved back into HD-lopsidedness in the 1980s, partly because of improvements in the efficiency of the HD production function. Both education and health expenditures appear to have become more progressive: in 1985-86, approximately 46 percent of students enrolled in public school were in the bottom two quintiles of distribution, whereas only 40 percent were in the top two.<sup>126</sup> Evidence also indicates that the poor made relatively more use of public health services, particularly health centers and clinics, rather than hospitals.<sup>127</sup> A number of compensatory social policies targetted at the poor also proliferated during the 1980s, with employment programs appearing focussed particularly on adult women.<sup>128</sup> Civil society activity also rose considerably, with a number of NGOs initiating their own food, health and employment programs, partly compensating for the decline in HD related public expenditures.<sup>129</sup>

#### SECTION IV. SUMMARY AND CONCLUSIONS

While generalizing too much from individual country experiences may be risky, given their diverse initial conditions and historical legacies, certain instructive patterns do emerge from this comparative Latin American performance.

First, the observed patterns appear to corroborate the general observation that human development must precede or accompany economic growth in order for virtuous patterns of development to result. The four countries that managed to cross into the virtuous category for one or more decades — Barbados, Chile, Colombia and Mexico — either started out with relatively good growth and human development (Barbados and Mexico), or initiated rapid improvements in

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HD which eventually reinforced both chains (Chile and Colombia). It also appears that countries which made early progress in human development stood a better chance of sustaining, if not improving, their HD record during difficult economic downturns and adjustment periods (e.g., Barbados, Chile, Colombia, Mexico). In contrast, the four poor performers which ended up in the vicious category in the 1980s — Brazil, Haiti, Jamaica and Venezuela — did not commit to HD improvements early on (Haiti, Brazil), or failed to protect HD sectors during times of economic downturn (Jamaica and Venezuela).

Second, income distribution appears to be an important variable in explaining differences in performance, via its impact on both chains. In all countries with one or more decades of vicious development, worsening distributions of income appear to have preceded the move to the vicious category, e.g., Brazil, Jamaica, and Peru. Peru's experience, in particular, highlights the concomitant effects income distribution can have on both chains, not only in reducing the effects of economic growth on human development, but also in depressing growth through political and economic instability, eventually also depressing HD improvements. All countries that moved into a virtuous cycle, in contrast, witnessed prior improvements in their distribution of income. This was particularly the case with Colombia, which managed to reduce income inequality in every decade and, as a result, to improve its HD performance.

Third, the relative effectiveness of expenditures on HD inputs appears to be an important mechanism for sustaining improvements in human development. Although almost all the countries examined reduced the absolute and relative value of HD expenditures in the aftermath of the 1980s debt crisis, the majority of those that managed to remain in HD-lopsidedness did so by improving the priority ratios and the efficiency of the HD production function. Chile and Mexico for example, compensated for reduced social sector outlays by rendering existing expenditure patterns more efficient through ensuring better access to lower income groups. In Peru, improvements in the HD production function eventually helped the country move back from the vicious into the HD-lopsided category. Increased female education and employment probably also played an important role, e.g. in Colombia.

Last, it may be particularly important for countries with natural resource abundance to adopt a balanced approach to development, one which generates broad employment opportunities during times of economic boom and which therefore may help to redress the problems created during economic

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downturns. Both Jamaica and Venezuela initially strengthened links in Chain A, but neglected those in Chain B. This disregard not only further depressed growth during economic declines, but it also worsened the HD situation by exacerbating unemployment and real wages, leading eventually to Jamaica's and Venezuela's perverse movement from virtuous and HD-lopsided development into the vicious cycle category. Their experience underlines the iterative, mutually reinforcing nature of the HD-GDP cycle.

From the policy point of view, the transitions we clearly need to examine more closely are those from vicious to HD-lopsided, from HD-lopsided to virtuous, or the very unusual case, undoubtedly difficult, of taking the direct route from vicious to virtuous.

Our earlier review of the links in the two chains suggests that to move from vicious to HD-lopsided one needs to strengthen the links in Chain A, which may be achieved by adopting some of the following policies:

- those leading to a shift in resource allocation towards education and health services, especially those serving the majority of the people, as apparently occurred in Argentina with enhanced decentralization.
- those generating a more equal distribution of income (for example, through a more employment-intensive pattern of output and/or land and tax reform).
- those providing larger opportunities for the unemployed, for example Chile's Emergency Employment Scheme or Bolivia's Social Fund in the 1980s, which received substantial support from donors.
- those increasing female school enrolment ratios.

Movement from the HD-lopsided to the virtuous category requires strengthening the links in Chain B by, for example:

- taking advantage of an improved HD to promote economic growth through country specific macro- and micro-level policy reforms;
- increasing the investment rate, possibly assisted from the outside;
- improving the distribution of income.

We do not wish to argue here that any particular set of policies would achieve a particular movement across categories; rather we want to emphasize an important conclusion about the sequencing of policy change, i.e. that HD must be

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strengthened *before* a virtuous cycle can be attained. Policy reforms, which focus only on economic growth, are unlikely to succeed. Countries in a virtuous cycle category may well slip back into HD-lopsidedness if, for some reason, growth slows down, but as long as HD stays high such cases have a good chance of resuming their virtuous cycle pattern.

Whenever either or both chains appear to be weak, leading to lop-sided or vicious cycles, it is important to identify where the weak links are and what the appropriate policies might be to strengthen such links. Such policies must, moreover, be viewed in an evolutionary context. Even countries initially successful in both HD and EG will need to change their policies as development proceeds in order to sustain their success. In an early phase, for example, priority might have to be given to primary education and some comprehensive health interventions, both from the perspective of improving HD and that of increasing economic growth. At a later stage, the roles of science and technology institutions and higher education are likely to become more important.

In summary, we have demonstrated the existence of an iterative process between the ultimate objective—improvements in HD—and economic growth as a necessary but not sufficient condition for achieving such improvements. Moreover, by investigating the relative importance of various links connecting HD and EG we have identified the direction policy might take to strengthen such links. One important conclusion concerns the desirable phasing of policy change. Our findings do not deny the importance of economic reforms, but emphasize that a focus on HD must be included from the beginning of any reform program. Economic growth itself will not be sustained unless preceded or accompanied by improvements in HD.

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**Notes**

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<sup>1</sup>See e.g. Sen, 1984; Streeten et al, 1981; Fei, Ranis and Stewart, 1985.

<sup>2</sup>Section II draws heavily on Ranis, Stewart and Ramirez, 2000.

<sup>3</sup>Birdsall *et al.*, 1995.

<sup>4</sup>Also see the 1991 *Human Development Report*.

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<sup>5</sup>Decentralization of publicly provided services has recently been introduced in a wide range of countries. Tentative conclusions about its effectiveness are mixed, with apparent relative success in promoting efficiency and contributing to HD in Indonesia, Malaysia, Chile, and Karnataka in India, but less so in Argentina, Bangladesh and Brazil. Mostly, local governments have been severely constrained in their ability to raise taxes as well as in the freedom of allocative decision-making, and full democratic devolution has been rare. See Behrman, 1995b; Prod'homme, 1995; Klugman, 1995; Ranis and Stewart, 1994.

<sup>6</sup>Thomas, 1990.

<sup>7</sup>Strauss, 1986; Immink and Viteri, 1981; Wolgemuth *et al.*, 1982.

<sup>8</sup>Selowsky and Taylor, 1973.

<sup>9</sup>Selowsky, 1981.

<sup>10</sup>E.g., Alesina and Rodrik, 1994.

<sup>11</sup>Psacharopoulos *et al.*

<sup>12</sup>Shortfall reduction refers to the closing of the gap with the longest country life expectancy on record – see the *Human Development Report*, 1995. We also tried regressions with changes in adult literacy rates and a combined, equally weighted, measure of the two. The results were similar but the number of observations more limited.

<sup>13</sup>Iraq made the same move between the 1960s and 1970s, but data are not available for the later period, when conflict is likely to have damaged both HD and EG.

<sup>14</sup>The Philippines moved from HD-lopsided to EG-lopsided and then returned to HD-lopsided in the 1980s.

<sup>15</sup>Lesotho moved from virtuous to vicious by way of EG-lopsided.

<sup>16</sup>One of the explanations of why Costa Rica was able to sustain HD achievements despite low economic growth resides in its early, strong and sustained commitment to HD, exemplified by abolition of its army in 1948 and its heavy investment (at 10% of GDP) on health and education between 1970 and 1992.

<sup>17</sup>e.g. Adelman and Morris.

<sup>18</sup>Barros *et al.*, 1995, 237.

<sup>19</sup>See Amadeo *et al.*, 1993.

<sup>20</sup>Barros *et al.*, 1995, 262.

<sup>21</sup>Maddison *et al.*, 1992, 12.

<sup>22</sup>IMF, *Government Finance Statistics*, various issues.

<sup>23</sup>Ibid.

<sup>24</sup>Maddison *et al.*, 1992, 104.

<sup>25</sup>EIU, 1998-99a, 19.

<sup>26</sup>World Bank, 1991, 254.

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- <sup>27</sup>See, for example, Lundahl, 1996.
- <sup>28</sup>World Bank, 1991, 254.
- <sup>29</sup>World Bank, 1993, 70, Table 4.11.
- <sup>30</sup>World Bank, 1987, Statistical Appendix, Table 11.4.
- <sup>31</sup>Ibid, 103.
- <sup>32</sup>Ibid.
- <sup>33</sup>World Bank, 1996, 225.
- <sup>34</sup>See World Bank, 1987.
- <sup>35</sup>Stone and Wellisz, 1993, 161.
- <sup>36</sup>Ibid, 171.
- <sup>37</sup>World Bank, 1991, 286.
- <sup>38</sup>World Bank, 1994c, 240.
- <sup>39</sup>See, for example, Behrman and Deolalikar, 1991; and Cornia and Stewart, 1987.
- <sup>40</sup>EIU, 1997-98a, 16.
- <sup>41</sup>Ibid.
- <sup>42</sup>Boyd, 1988, 135.
- <sup>43</sup>Marquez, 1995, 409.
- <sup>44</sup>Ibid.
- <sup>45</sup>Ibid.
- <sup>46</sup>Ibid, 412.
- <sup>47</sup>EIU, 1997-98b, 20.
- <sup>48</sup>Ibid.
- <sup>49</sup>Ibid, 19.
- <sup>50</sup>Ibid.
- <sup>51</sup>Nissen and Welsch, 1994, 95.
- <sup>52</sup>World Bank, 1989, 479.
- <sup>53</sup>World Bank, 1996, 541.
- <sup>54</sup>Marquez et al, 1993, 146.
- <sup>55</sup>World Bank, 1996, 30.
- <sup>56</sup>Holder and Prescod, 1989, Table 9, 105.
- <sup>57</sup>Coppin, 1995, 107.
- <sup>58</sup>Baker, 1997, 89.
- <sup>59</sup>IMF, *Government Finance Statistics*, various issues.
- <sup>60</sup>Inter-American Economic and Social Council, 1974, 14.
- <sup>61</sup>Coppin, 1995, 108, footnote 14.
- <sup>62</sup>Baker, 1997, 90.
- <sup>63</sup>World Bank, 1996, 30.
- <sup>64</sup>Inter-American Economic and Social Council, 1974, 14.
- <sup>65</sup>Raczynski, 1988, 57.
- <sup>66</sup>Ibid, 66.
- <sup>67</sup>Riveros, 1998, Table 4.4, 128.
- <sup>68</sup>See Raczynski, 1988.
- <sup>69</sup>World Bank, 1996, 102; EIU, 1998-99b, 21; Raczynski and

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- Romaguera, 1995, 313.
- <sup>70</sup>World Bank, 1991, 81.
- <sup>71</sup>EIU, 1998-99b, 20.
- <sup>72</sup>Raczynski, 1988, 78.
- <sup>73</sup>Riveros, 1998, 127.
- <sup>74</sup>See Riveros, 1998, 112-9.
- <sup>75</sup>Berry and Tenjo, 1998, 160.
- <sup>76</sup>Londono de la Cuesta, 1997, 29.
- <sup>77</sup>Ibid, 30.
- <sup>78</sup>Ibid, 31.
- <sup>79</sup>World Bank, 1994b, 58.
- <sup>80</sup>Berry and Tenjo, 1998, 165.
- <sup>81</sup>Ibid, 166.
- <sup>82</sup>World Bank, 1996, 112.
- <sup>83</sup>Londoño de la Cuesta, 1997, 34-35.
- <sup>84</sup>Berry and Tenjo, 1998, 159.
- <sup>85</sup>Ibid, 160.
- <sup>86</sup>See Van Ginneken, 1980.
- <sup>87</sup>Maddison et al, 1992, 185.
- <sup>88</sup>Ibid, 129.
- <sup>89</sup>EIU, 1991-92, 9.
- <sup>90</sup>IMF, *Government Financial Statistics*, various issues.
- <sup>91</sup>Maddison et al, 1992, 196 and 201.
- <sup>92</sup>Ibid, 187.
- <sup>93</sup>Ibid, 149.
- <sup>94</sup>Ibid, 143.
- <sup>95</sup>Friedmann et al, 1995, 344.
- <sup>96</sup>Ibid.
- <sup>97</sup>Ibid, 359-61.
- <sup>98</sup>Friedmann et al, 1995, 365.
- <sup>99</sup>Duarte y N., 1996, 325.
- <sup>100</sup>Lager and Lozano, 1996, 336.
- <sup>101</sup>Marshall, 1998, 81.
- <sup>102</sup>Golbert and Fanfani, 1994, 4.
- <sup>103</sup>Altimir, 1998, 62.
- <sup>104</sup>Marshall, 1998, 99.
- <sup>105</sup>Lo Vuolo, 1995, Table 5.
- <sup>106</sup>Beccaria and Carciofi, 1995, 213.
- <sup>107</sup>Marshall, 1998, fn. 14, 106.
- <sup>108</sup>Ibid, 92.
- <sup>109</sup>Beccaria and Carciofi, 1995, 207.
- <sup>110</sup>Ibid, 187.
- <sup>111</sup>Ibid, 201-2.
- <sup>112</sup>Ibid, 215.

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<sup>113</sup>See World Bank, 1988 and Habibi et al, 1999.

<sup>114</sup>Beccaria and Carciofi, 1995, 220.

<sup>115</sup>Ibid, 229.

<sup>116</sup>Ibid, 195.

<sup>117</sup>See, for example, Webb 1977.

<sup>118</sup>Figueroa and Denis, 1996, 35.

<sup>119</sup>Alcalde, 1991, 172.

<sup>120</sup>Ibid.

<sup>121</sup>World Bank, 1994a, 4.

<sup>122</sup>Figueroa and Denis, 1996, 42.

<sup>123</sup>Ibid, Table 5, 41.

<sup>124</sup>Ibid, 35.

<sup>125</sup>World Bank, 1994a,16.

<sup>126</sup>Figueroa, 1995, 382.

<sup>127</sup>Ibid, 383.

<sup>128</sup>Ibid, 385.

<sup>129</sup>Ibid, 388