DEVELOPMENT STRATEGY IMPLICATIONS OF POPULATION GROWTH AND
LABOUR FORCE ABSORPTION IN LATIN AMERICA

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I. INTRODUCTION

Fundamental to the study of any region's development is knowledge of the characteristics and evolution of its labour force. The attempt to bridge the gap between aggregate economic growth and improved levels of living in Latin America poses questions which, in analyzing the economic characteristics of the population transcend the much debated demographic oriented models of economic growth, founded up to the present moment on tenuous empirical evidence which limits discussion primarily to a capital theory of value revolving about aggregate saving, capital formation and investment. No question can be raised as to the importance within the context of Latin American development of such issues as population growth; migration; the size and composition of the labour force, its qualifications, the regularity and productivity of its employment, and the adequacy of its income — most especially considered differentially by economic and social status as well as by sex. For it is only when viewed in this light that the magnitude and nature of the subject of the effect of population growth upon economic development ceases to be distorted by the mask of global figures which disordinately abstract the problem from reality.

Attention on the part of economists has all too often been directed almost exclusively toward the relation of one indicator, per capita income, to demographic trends based on the assumed increases in material capital formation. In itself and isolated from other important aspects of institutional change necessary for development planning, this appears to be an inadequate measure. To what extent it does not sufficiently reflect social conditions and levels of living may be appreciated in the instances where per capita product levels are incongruous with the known conditions of the countries under study.

Essentially preliminary in nature, the purpose of this study is to critically examine the use of conventional economic theory with regard to the question of population growth, and against this background to explore

/one aspect

one aspect — the implications of a declining rate of population growth for labour force absorption —, the latter taken as a variable which occupies a strategic position as an input to national production and structural change.

II. THE CONVENTIONAL ECONOMIC-DEMOGRAPHIC MODEL

Perhaps the first aspect upon which attention should be focused is the polemic generated by the application of aggregate economic growth models elaborated in the highly industrialized West to questions posed by population trends in Latin America. Although subject to three direct demographic variables — fertility, mortality and migration —, the debate over economic progress and population pressure has almost invariably concentrated upon fertility reduction as a major policy instrument. On the one hand this process stems from a standard "Harrod-Domar" approach to the study of the economic effects of demographic trends in which the major sequence is that of a lowering of fertility giving rise to increments in per capita income consequent upon greater capital accumulation. More recent macroeconomic models of the neoclassical genre, however, do not place primary emphasis on the growth of capital stock but rather look upon the positive contribution to output which lower fertility may have through its direct effect on the labour input. Nevertheless, all of these models have one aspect in common. They assume that the major objective of any national economy is to maximize output. From the perspective of development strategy these models, although dissimilar in many other respects, are essentially production-oriented. Thus, the present discussion, admittedly a brief overview, will for the most part consider only one "conventional" model highlighting some important variations in regard to the labour force employed by versions of the neoclassical economic-demographic models.[1]

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[1] The classic work upon which the Harrod-Domar Type of model rests is that of Ansley Coale and Edgar Hoover, Population Growth and Economic Development in Low-Income Countries (Princeton: Princeton University Press, 1958). If now somewhat dated, this study engendered a continuing succession of adherents who maintained the original orientation with some modifications. For examples of the influence of this model see: Murray Gendell, "The Influence of Fertility Trends on the Potential for Capital Formation in Latin America" in Estadística, Journal of the Inter-American Statistical Institute, 23, 89 (December, 1965), pp. 675-86; Paul Demeny, "Investment Allocation and Population Growth" in Demography, 2 (1965), pp. 203-233. A keywork of the neoclassical variety is Stephen Enke, Raising Per Capita Income Through Fewer Births, Santa Barbara, California: Tempo, General Electric Company, March, 1968.

Figure 1 provides a schematic view in simplified fashion of the conventional economic-demographic model which focuses primarily upon population growth and per capita income. With regard to the demographic side of the model it should be noted again that the birth rate is the key variable which affects the growth rate of per capita income. First of all, it is sustained that even under conditions in which declining fertility is believed to have no significant impact whatever on total national product, all that is assumed is that the level of total output be maintained with emphasis in turn placed on the denominator of the equation. The mechanism of the model is such that with about the same output and a lower rate of population growth eventually resulting in a smaller total population, higher per capita income levels are produced.

The economic effects, it is further argued, are those which correspond to two factors of production: the supply of capital stock and the quantity of the labour force. With regard to capital, the reasoning is that smaller households are wont to save more since they can set aside that part of their income which would have been spent on more children to improve their long-run economic status, with the understanding that the category of household savings includes such items as home ownership, family business enterprises, as well as strictly financial assets. The government's capacity to save and invest is also affected: with income levels increased by declining rates of population growth, the state may receive more in tax revenue without producing a simultaneous fall from existing levels of living. Relatively more of the government's income could also be used to increase the national supply of capital stock rather than on "demographic" or social overhead investments.

In addition to the above, the conventional model takes into account the growth of the labour force as an operational input on per capita income growth. In general terms the size of the labour force expands proportionately to the population of working force age more or less defined as between 15 and 65 years of age. Obviously, the time factor is of critical importance, and in the model it is assumed that any change in fertility will have no significant effect on the supply of labour for about fifteen years since those who will form the working force within that time-frame have already been born.

/Figure 1

Figure 1

CONVENTIONAL ECONOMIC-DEMOGRAPHIC MODEL WITH CONVERGENCE UPON PER CAPITA INCOME AND POPULATION GROWTH
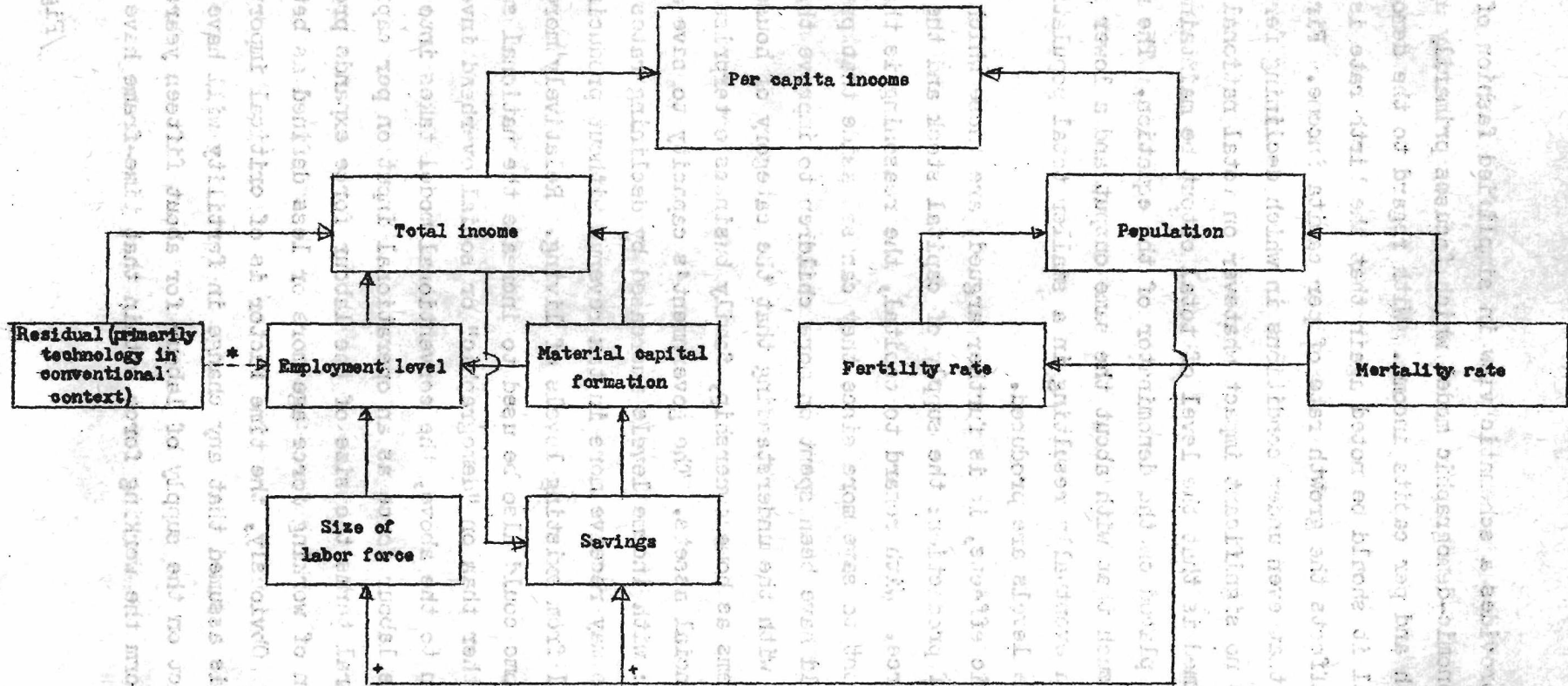
*   Age structure of population is the determining element at these junctures.
*   The impact of technology; types of production systems used in rural as well as urban areas; quality of human resources as determined by education, health, nutrition; etc... upon labor absorption is not a part of the conventional model but as a modification merits special attention.

In the longer run, changes proceed only slowly but are positive for those countries in conditions of "surplus labour" or with high level of unemployment. In terms of increases in per capita income, a slower growing labour force implies less pressure on capital stock requirements which are needed to provide jobs for the new entries to the labour force. As a result, per capita income would rise more rapidly "than the decline in the growth rate of the population, for one of the essential characteristics of the situation described is precisely that when less is spent on the rearing of children and more on capital equipment, while the labour force remains constant or grows slowly, a country that cuts its birth rate will produce a bigger total product, and this within a short time".[2]

III. ANALYSIS OF THE CONVENTIONAL MODEL

In its application to Latin America, however, the above model encounters numerous difficulties which subject several of its basic postulates to question. The position adopted in regard to population control policies have been sharply criticized, and opponents have charged that the conventional approach distorts reality because of the limitations imposed from the model's inherent failure to take into account such vital aspects of the region's socio-economic structure as unequal income distribution, factor market imperfections, savings behaviour and consumption characteristics. To this may also be added the conceptual problems to be found in the definitions and interrelations of the model's variables.

By way of illustration as to how the conventional approach may be modified, recourse may be had to an expanded version of another traditional tool which contains economic and demographic variables. Because of its key position in the evolution of growth theory since World War II, this body of thought has been fused into what is commonly known as the "Harrod-Domar Model". Considerable defects and weaknesses are present here also, and no attempt is made in this discussion to utilize the Harrod-Domar model in the context of

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2/   Goran Ohlin, _Population Control and Economic Development_ (Paris: The Organization for Economic Co-operation and Development, 1967), p. 60.

a theory of economic growth as it was originally intended.[3/] Rather the purpose is to employ it merely as an instrument with which to critically examine the variables presented in the conventional economic-demographic model, and hopefully to better focus on certain critical areas in need of further investigation. The reference points sketched in Figure 1 are given by the following formula indicating the dependence of per capita income on the growth rates national income and population:

$$y_o = \left\{ \frac{100 \neq \frac{s}{k}}{100 \neq p_o} - 1 \right\} 100$$

where, y_o = annual rate of growth of per capita income

p_o = annual rate of population growth

s = the savings ratio, annual savings expressed as fixed capital formation as a percentage of gross domestic product

k = the incremental capital-output ratio (ICOR)

With the assumption that annual net investment, I_t, is approximately equal to annual net savings, S_t, we express the savings ratio, $s = \frac{S_t}{Y_t}$ as $\frac{I_t}{Y_t}$ and the capital output ratio k as $\frac{I_t}{\Delta Y}$ (since the ICOR is simply the increase in a country's capital stock over a period of years divided by the increase in output during the same period). Thus, $\frac{s}{k} = \frac{\Delta Y}{Y}$ which is the growth rate of national income. This is converted to a per capita basis by dividing the rate of population increase into the global income growth rate. The theory affirms that savings lead to an increase in investment which in turn induces an increase in income through the operation of the incremental capital output ratio — a self-sustaining process in the model's original form.

Consequently, the per capita growth rate can be boosted by augmenting the savings ratio (s), by lowering the marginal capital output ratio (k), or by lowering population growth.

Within this simplified framework which we are employing, then, how do the broader social and economic factors which condition the structure of the Latin American economies relate to the conventional economic-demographic model? What modifications are required, and in what manner may fertility decline affect human well-being?

3/   One of the major problems involved in the use of Harold-Domar based economic-demographic models is that output growth is regarded merely as a function of investment, and the contribution of labour is generally ignored.

/From the

From the questions just posed the variables s and k may now be
probed in depth in order to more fully comprehend the dimensions of this
problem area in Latin American development strategy. The savings ratio
in theory is closely identified with gross fixed investment, since
presumably that money not spent in one form of consumption or another
is eventually invested. It is most generally taken as the percentage
ratio of gross fixed investment to gross domestic product. Capital
formation in Latin America is universally recognized as low; during
the period 1960-1969, the investment coefficient for the entire region
was 17.18 per cent which is less than in countries with higher economic
growth rates (see table 1 and Appendix, table 2). In relative terms,
given the general low level of income in the region, this may also be
interpreted as above average in proportion to other world areas with
similar income levels. The structure of capital formation in Latin
America, however, depends almost exclusively upon domestic savings and
might have been higher were it not for the extreme concentration of income
within the highest social levels (see tables 2 and 3). The savings investment
and consumption patterns of these groups, moreover, are often not conducive
to the formation of productive capital, a problem further aggravated by
the enormous deficiencies of existing capital markets in Latin America.[4]

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[4] Antonin Basch and Milic Kybal, Capital Markets in Latin America,
(New York: Praeger Publishers, 1970, Published for the Inter-American
Development Bank). Residential housing, for example, forms a
significant portion of domestic capital formation comprising at
times half of the amount of total construction which, in turn, forms
about 40-50 per cent of domestic capital formation. See: United
Nations, Yearbook of National Account Statistics 1969. Standard
Table V "Composition of Gross Domestic Capital Formation" for biennial
time series data 1953-1968 which displays this situation for Latin
America. On the relatively improductive nature of personal saving
in Latin America also see: "Industrial Development in Latin America",
Economic Bulletin for Latin America, XIV,2 (Second Half of 1969)
(E.69.II.G.5), p. 19. The productive structure of Latin American
industry is often excessively capital intensive and oriented to meet
the demand-schedule of those consumer goods generated by higher
income groups. Characteristic of this situation is the under-utilization
of productive capacity; it has been reported that from 1960-1963 only
58.2 per cent of installed capacity was being used. ILPES, "Elementos
para la Elaboración de una Política de Desarrollo con Integración para
América Latina", Chapter III, "Aprovechamiento de la capacidad produc-
tiva en el sector industrial" Mimeo, (INST.S,4/L.2/add.3), Table 2.

Table 1

LATIN AMERICA: INVESTMENT COEFFICIENTS CALCULATED IN NATIONAL CURRENCIES,
1960-1970

(Gross fixed investment as a percentage of Gross Domestic Product)

Total Latin America		Average 1960-1970	
Year	Investment Coefficient	Country	Investment Coefficient
1960	17.54	Argentina	20.21
1961	17.55	Bolivia	15.28
1962	16.95	Brazil	16.03
1963	16.05	Chile	14.74
1964	16.28	Colombia	16.90 a/
1965	15.82	Costa Rica	19.50
1966	16.54	Dominican Republic	16.45
1967	16.84	Ecuador	12.15
1968	17.79	El Salvador	12.79
1969	18.19	Guatemala	11.18
1970	19.42 b/	Honduras	15.82
		Haiti	5.85
		Mexico	17.28
		Nicaragua	16.81
		Panama	17.96 a/
		Paraguay	12.60
		Peru	18.78 a/
		Uruguay	13.70
		Venezuela	15.09
		Total Latin America	17.18

Source: Appendix, table 1.

a/   Average 1960-1969.

b/   Total gross investment as a percentage of Gross Domestic Product.

Table 2

PARTICIPATION IN TOTAL INCOME OF DIFFERENT INCOME GROUPS IN LATIN AMERICA AND SELECTED COUNTRIES CIRCA 1960-1965

(Percentages)

	Lowest 20%	30% below the median	30% above the median	15% below highest income group	5% highest income group	Total
Latin America	3.1	10.3	24.0	29.2	33.4	100.0
Argentina	5.2	15.3	25.4	22.9	31.2	100.0
Brazil	3.5	11.5	23.6	22.0	39.4	100.0
Colombia	5.9	14.2	23.2	26.3	30.4	100.0
Costa Rica	6.0	12.2	21.8	25.0	35.0	100.0
El Salvador	5.5	10.5	22.6	28.4	33.0	100.0
Mexico	3.6	11.8	26.1	29.5	29.0	100.0
Panama	4.9	15.5	22.9	22.2	34.5	100.0
Venezuela	3.0	11.3	27.7	31.5	26.5	100.0

Source: Adapted from ECLA _La Distribución del Ingreso en América Latina_ (S.71.II.G.2), Figure II and table 1.

Table 3

PER CAPITA INCOME ACCORDING TO INCOME GROUP FOR SELECTED COUNTRIES CIRCA
1960-1965

(1960 dollars)

Country	Average per capita income	Lowest 20%	30% below the median	30% above the median	15% below highest income group	5% highest income group
Argentina	780	203	398	661	1 190	4 867
Brazil	230	40	88	181	338	1 820
Colombia	260	77	124	200	455	1 590
Costa Rica	380	114	155	276	633	2 660
El Salvador	205	56	72	154	390	1 350
Mexico	390	70	154	340	767	2 270
Panama	350	86	182	267	516	2 415
Venezuela	515	77	194	475	1 081	2 730

Source: ECLA, Trends and Structures of the Latin American Economy
(E/CN.12/884), table 39.

/Economic growth

Economic growth, then, will not automatically follow increased savings unless these add to productive capacity. Since the savings behaviour of high income families are not generally oriented toward this end; since corporate re-investments, a most important source of domestic savings, are correlated to a great extent with those types of protectionist measures whose contribution to national development is often dubious;[5] and since conventional savings of the lower income levels are minimal and inefficiently channeled, given the absence of adequate financial institutions and markets; the prospect for the generation of greater amounts of productive savings is far from certain.

With due regard to the vast practical obstacles, often of a political nature to be overcome in achieving a significant change in the present situation, nevertheless, some Latin American governments have manifested their awareness of the obstruction to increased savings capacity posed by the distorted distribution of income. According to one general statement of the problem:

"No obstante, la mayor fuente de ahorros de la economía está constituida por las utilidades, distribuidas, o no, que se generan en las distintas actividades; por lo tanto, de continuar esta situación, si se acepta que el ahorro es una función creciente del ingreso, se podría suponer que al aumentar el ahorro, la porción del producto nacional correspondiente a las utilidades está creciendo. Dada la distribución de ingresos del país, la capacidad de ahorro de la mayoría de la población es prácticamente inexistente y a ciertos niveles negativa. Por lo tanto, el escaso ahorro privado del país en gran parte está en manos de quienes reciben rentas o utilidades, lo cual hace que progresivamente el proceso de acumulación de capital así operado, altere aún más la distribución de ingresos.

Si se considera la importancia que tiene la escasez de capital como limitante a la expansión del producto y se tiene en cuenta la capacidad de inversión que ha logrado desarrollar la economía, es de primordial importancia diseñar incentivos conducentes a la generación de un creciente volumen de ahorro interno. En la solución de estos aspectos jugarán papel importante, en cuanto al ahorro privado, las medidas que se tomen con el

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5/   See page 28.

propósito de compensar los efectos nocivos que sobre él ha tenido el proceso inflacionario (por ejemplo, incremento en las tasas de interés en las cuentas de ahorro) y, en cuanto al ahorro público, la ampliación de la base tributaria".[6]

In the absence of far-reaching structural and institutional reforms, however, little hope exists for augmenting the savings ratio.

It must also be recalled that as a weighted average the trend of economic growth, savings and investment in the entire region is influenced to a great extent by the course of events in the largest countries, and during part of the period under review the global investment coefficient fell, consequent upon the languid economic growth of such countries as Argentina and Brazil beset by inflationary difficulties especially until 1966. The striking variations that can be noted in the investment coefficients of most countries from one year to another and among the respective countries themselves, of course, do not correspond exclusively to the degree of monetary stability, but are also greatly affected by non-economic factors such as the confidence generated by the degree of political and social stability in a country. (See Appendix, table 1.) The gross fixed investment coefficient itself would be considerably reduced if investment were calculated at its true dollar value in terms of capital goods purchasing power, a more accurate measure given the fact that Latin America depends upon imports for most of its capital equipment, and the higher costs of those capital goods produced locally. A more realistic ratio would probably be about 12.0 per cent.[7]

In conventional usage, the formulation of the incremental capital-output ratio is rather simple and to some degree rough-cast. It merely denotes the total increase of the productive capacity of capital over a period of time measured by the expansion of the country's capital stock divided by the change in national output during the same time-frame.

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6/ Colombia, Departamento Nacional de Planeación, "El empleo en Colombia: diagnóstico y recomendaciones de política", Revista de Planeación y Desarrollo, June, 1970, p. 215.

7/ ECLA, Basic Aspects of Latin American Development Strategy (E/CN.12/836/Rev.1), p. 12.

The reasons for the change in capital stock do not enter directly into the calculation. Still, elements other than capital are encompassed by the ratio – changes in production techniques, or in the labour force, the application of new technology; indeed, any significant alteration of any of the intervening productive factors influence the amount of investment undertaken to increase productive capacity.

As with practically all indicators of Latin America there is considerable disparity among the countries with respect to the capital-output ratio, ranging from about 1.5 to vastly over 12 depending on the period covered and the particular characteristics of the industrialization and urbanization processes of the country.[8] However, we may solve our guideline formula for "k" to see what capital-output ratio is indicated for the region. The average annual rate of growth of the gross domestic product for the years 1960-1969 is given as 5.5. Thus:

$$Y_o = \frac{s}{k}$$

$$5.5 = \frac{17.18}{k}$$

$$k = 3.12$$

And by using the closer approximation to the true value of the gross investment coefficient, we would have:

$$5.5 = \frac{12.0}{k}$$

$$k = 2.18$$

The ratio of 2.18 to somewhat over 3. is not a momentary occurrence for the region as a whole. Indeed, it represents an historical pattern which has not gravitated far from that mark in many years and is unlikely

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[8] See United Nations, _World Economic Survey 1967_, Part I, p. 40 for the average incremental capital output ratios 1955-1965; Everett Hagen, _The Economics of Development_ (Homewood, Illinois: Irwin, Inc., 1968) p. 187 for those covering 1960-65 based on data supplied by the International Bank for Reconstruction and Development, and Basch, _ibid._, Table 13 for 1950-59 ratios as compared with 1960-65 also based on IBRD data.

to change in the short-run.[2/] In the conventional definition of capital
investment, this indicator especially reflects the low capacity of the
secondary sector to absorb labour which turns to other areas - commerce,
services, handicrafts, etc.... in search of jobs. And often it is only
in marginal occupations and stagnant sectors that unskilled labour,
commonly referred to as "surplus" in the economy is received; its
destination that of underemployment. In part due to the allocation of
existing capital resources in those industries which inherit the high
capital-low labour intensity technology and productive systems of the
most highly developed western nations, the existing resources; human and
technical, agrarian and urban of Latin America are not only poorly utilized
but abused. From governmental policies seeking to expand the "modern
sector" of heavy industry to a supply schedule of consumer goods essentially
geared to satisfying the demand structure of high income groups emerges a
situation in which capital is not sufficiently channeled into small and
medium manufacturing establishments, the expansion of basic consumer goods
industries, or services such as education which serve to augment the welfare
of the population.

Closer examination of the mere definition of capital itself in
standard usage exposes an even more critical condition. In this analysis
capital goods are commonly recognized as machinery, plant, equipment, etc...
But proper attention to the social requirements of population growth
requires as a matter of social justice an increase in the infrastructure,
in health, housing, roads, education and other public services. The
enormous deficits in these social services which have often been referred
to in earlier studies by ECLA and other international organizations, in
recent analyses have been shown to persist not only in absolute terms on
the national level but most especially in the wide regional disparities
within countries - between urban and rural sectors and according to the

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2/   In 1961 references to the capital-output ratio of the previous years
        also gave estimates in the order of 2 or 3. ECLA, "Preliminary
        Study of the Demographic Situation in Latin America" (E/CN.12/604),
        pp. 25-27.

different income levels of the population.[10] Investments in these areas
have higher capital-output ratios than industry with longer gestation
periods in regard to the contribution to per capita product and productivity.
Thus it can be maintained that the capital-output ratio of 2.4 to over 3
given before is already at its lower limits and a more realistic (albeit
statistically incalculable) figure would be substantially higher with an
inherent tendency to rise given the needs defined by present rates of
population growth in the region.

The conclusion which may be drawn from the foregoing re-examination
of capital requirements is that the possibilities for a sufficient decrease in
the capital-output ratio which may exert a significant force to increase
the growth rate of national income and human well-being are all but nil.
Nor may any hope be placed on savings capacity without fundamental reform
measures. Are we to infer that the road to higher per capita incomes is to
be found only through lower fertility rates? According to the conventional
economic-demographic model and our guideline formula this mechanism would,
at first sight, appear to operate directly: lower rates of population
growth   higher per capita income. But if in the past it may be said that
Latin America has embarked upon developmental efforts revolving about a
primary goal which tends to delineate historical "watersheds", e.g.
industrialization, may it be argued that the time has arrived for a new era
to occupy the scene of the region's developmental periodization and that the
benchmark of this time-frame is to be population control?

Evidently the interrelations among the intervening variables are not
as simple so as to defend a policy of population control solely upon those
grounds. Just as the pattern of savings and investment does not
operate within the Latin American context to raise per capita income,

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10/ Within the existing body of literature on these subjects the extent
     of the problem is most clearly presented in: ECLA, Education, Human
     Resources and Development in Latin America (E.68.II.G.7); ECLA, Social
     Change and Social Development Policy in Latin America (E.70.II.G.3)
     UNESCO, The Statistical Measurement of Educational Wastage (Inter-
     national Conference on Education, Geneva: 1970); ECLA, Trends and
     Structures of the Latin American Economy (E/CN.12/884), pp.77-111;
     ECLA, Population Trends and Policy Alternatives in Latin America
     (E/CN.12/874), pp.25-35.

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an index of human well-being in itself already suspect, neither can lower fertility be viewed as the panacea to the problem of underdevelopment without the complementing global reforms which would be required to meaningfully relate income figures to levels of living.

From a purely economic perspective it would seem to exercise a passive function, reducing obstacles and lessening constraints, thus opening the passage to more options rather than actively operating to stimulate growth. Of course, this view does not take into account other possible benefits of a positive nature which may accrue from a broader vision of population policy and family planning - those which relate to the social enhancement of the individual and the family.

As has already been seen a series of problems arise in the use of macro-growth models as major instruments in a global development strategy. Too often is the increase of national income taken to be the main objective, and the ensuing identification of development with per capita growth rates is fatuous insofar as this criterion reflects a feeble perception of the structure of the Latin American economies, the operation of their power structures, and the region's position of dependency to external socio-economic pressures. Certainly per capita income and global development are related, but a closer examination and expansion of the concepts employed in the pertinent variables is required to avoid inconsistencies by maintaining developmental strategy within the perspective of an integral human process.[11]

By extension of the paths to economic growth presented in Figure 1, however, it may be ascertained that one key issue not adequately dealt with

[11] The disillusion with the indiscriminate use of income growth rates as an indicator of overall development is explicit in the recent International Labour Office study of the employment problem in Colombia: "The root of the discontent with economic growth as a supreme objective has been the dawning realization that even when it is rapid it has generally, as in Colombia itself, been accompanied by rising unemployment and widening gaps between the rich and the poor, and between town and country - very possibly also by actual increases in the numbers living below some poverty line, wherever this is drawn. Economic growth has often, especially in the industrial countries meant a deteriorating physical environment as well. Governments have been forced, therefore, to broaden the range of policy objectives". International Labour Office, Towards Full Employment A Programme for Colombia (Geneva, 1970), p. 48.

/in standard

in standard interpretations is that of labour force improvement and full employment. The strategic position of the labour force and its employment levels under circumstances of lower fertility may be appreciated from one of the more recent analyses of the problem of population pressure in underdeveloped areas: "In judging the impact of population growth on economic welfare, it is relevant to consider its effect not only on the growth of income but also on the growth of employment, partly because to reduce involuntary idleness (underutilization of human resources) is itself a desirable economic goal, separable from the other and partly because income growth without employment growth is a strong indication that the distribution of the increased income may leave much to be desired".[12]

IV. POPULATION GROWTH, LABOUR ABSORPTION AND "THE EMPLOYMENT PROBLEM" IN LATIN AMERICA: AN OVERVIEW

Certainly one of the most crucial problems faced by Latin America throughout the last decade, and most likely to command the attention of the region's policy makers in the 1970s is the rapid growth of the economically active population and the simultaneous inability to productively utilize human resources. According to one study which estimated the extent of un- and underemployment in 1960, about 40 per cent of Latin America's active population was in one form or another underutilized. As might be expected much of this underutilization is to be found in agriculture. The equivalent of about 28 per cent of that sector's labour force was unemployed, and this figure represented about 50 per cent of the equivalent unemployment of the entire economy. Services, commerce and finance also had high rates of "equivalent unemployment" (32 per cent of the sector, 29 per cent of the total economy) as did unspecified activities (67 per cent in relation to the active population of the sector, 8.6 per cent

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12/   Peter Newman, "Population Pressure and Economic Growth: An Operational Treatment", *Journal of Development Planning*, No. 2 (1970), p. 35.

in proportion to total unemployment of the region.[13]

Another analysis of underemployment in eight Latin American countries utilizing sample returns from the 1960 census round reaches similar conclusions. Rather than applying purely economic criteria, it considers the interrelations existent among the variables: educational level, age, occupational category and occupation, and concludes that total under-employment was in the order of 41.6 per cent.[14] From the 1960s to the 1970s the annual growth rate of the economically active population of the entire region is estimated to rise from 2.8 per cent to 3 per cent. And a recent projection to the year 2000 is suggestive of the qualitative as well as quantitative changes with which the planner will have to cope in providing employment and social welfare for a net increase of over 3.6 million workers, the result of the incorporation of 10.2 million women into the labour force under conditions of declining fertility and the withdrawal of 6.6 million males from the ranks of the economically active.[15] But employment is only expanding at 2.5 per cent annually, and this figure merely pertains to the number of jobs available, i.e. it just relates to overt unemployment, and excludes hidden unemployment as well as underemployment. Thus, at the moment the prospects for the coming decade indicate increased pressures on a labour market whose demand structure has proven itself incapable of productively absorbing a swelling labour force.

13/ For these unemployment figures see: Instituto Latinoamericano de Planificación Económica y Social, "Elementos para la Elaboración de una Política de Desarrollo con Integración para América Latina", Chapter II, "Ocupación, población y distribución del ingreso" Mimeo, July, 1969 (INST/S.4/L.2/Add.2). The "equivalent unemployment" concept aggregates all forms of underutilization of human resources in an attempt to provide one indicator in terms of a conventional measuring device.

14/ Carmen Arretx, La Información y Los Estudios Demográficos en América Latina, Seminario sobre Utilización de Estudios y Datos Demográficos en la Planificación, Santiago, 23 al 29 de agosto de 1971. (ST/ECLA/Conf.41/L.9.)

15/ Angel Fucaraccio and Carmen Arretx, Relaciones entre Variables Económicas y Demográficas, Ensayo de un Modelo, a document presented to the same conference referred to in the preceding reference (ST/ECLA/Conf.41/L.4), Table 20.

/Potentially catastrophic

Potentially catastrophic social and political implications have been drawn by many authors from the admittedly disheartening panorama just presented. Un-and underemployment → social pressures → political upheaval is the trend line most commonly projected. The reality of this sequence for Latin America, however, cannot be accepted solely on the basis of those global figures which have been provided thus far to quantify the underutilization of human resources, and from which a qualitative assessment of the employment problem in the region and its social implications have been elaborated. The existing literature generally makes use of conventional surveys which concentrate upon hours worked and additional hours desired within a particular reference period, or derives from other approaches which attempt to assess employment deficiencies from productivity measurements. Yet the jump from these aspects of the employment situation to issues of such transcendental consequence as revolutionary pressures is illogical since it ignores other dimensions of the question which are equally germane to reach an understanding of Latin America's "employment problem". A broader conceptual base is first required to define and interpret the scope of the problem in order to properly position employment objectives within the overall development strategy which any nation may choose as consistent with the particular image of a social order it desires.

It should be clear that employment must be considered not only from its position as a factor input. This has too often been the case in Latin America's census and survey gathering and stems from the fact that definitions of unemployment and employment used in the region derive from the concepts worked out and applied in the more developed countries. The usefulness of their uncritical acceptance in Latin America, however, is open to question. Just as the fundamental goal of a national economy ought not to be to maximize output throughout all points of time, so also the other aspects of the problem of absorbing the increasing supply of human resources into the labour market must be dealt with along with that of labour's productivity. The role of employment is much more varied and performs numerous functions within a society among which may be mentioned:

1. The production of goods and services.
2. The generation and to an extent, the distribution of income, generally but not always of a monetary nature — and, within

/this structure

this structure the insertion of the individual and family within
the economic system.

3. The creation of channels of communication between the individual
and the society and his self-identification through organizational
ties, reference groups or class associations as well as through
geographical and occupational mobility.

4. The interaction between the individual and society as determined
by his employment situation in turn conditions his interest towards
the maintenance or change of the existing socio-political order.
That is to say, Functions 1, 2 and 3 provide the base for another:
employment as a mechanism of socio-political insertion in which the
activity of the individual in the existing power structure is
realized.

5. Finally, the provision for psychological requirements of the
individual through the performance of a meaningful activity which
in some form permits his self-realization.

Any study which purports to link the levels of employment in Latin
America to social and political trends must incorporate the non-economic
variables into the schema. All too often the first of the above mentioned
functions is the focal point for discussion, with the second function only
recently receiving increasing interest in empirical studies. The latter has
proven itself to be a most difficult task, however, given the persisting
lacunae of reliable data on income distribution. On the other hand, the
remaining functions of employment have generally been ignored. It is beyond
the scope of this paper to enter further into the subject, and yet it is
highly recommendable to undertake with vigor the task of compiling data and
preparing studies which encompass and integrate the above set of variables.
As an initial venture, new techniques in the definition and measurement of
un- and underemployment might be utilized, such as those which relate the
utilization of human resources to work income and the socio-economic
circumstances in which it is derived. Reference may be made to several
recent studies which, when jointly considered, represent first steps in
this direction. Included in them are data and empirical analysis of

/labour force

labour force growth, income distribution, nutrition and working efficiency combined with an appreciation of the socio-political milieu of employment.[16]

It is to be expected that the orientation of such works, just as that here proposed in regard to the problem area of population growth and labour force absorption, will assist in the process of a clearer formulation of an overall development strategy by the region's policy makers.

V. LABOUR FORCE AND EMPLOYMENT IN THE ECONOMIC-DEMOGRAPHIC MODEL

In general most models which consider the economic effects of fertility changes fail to fully examine their effect on the labour force. They are often accustomed to use the male age structure as the determining variable without considering the other factors which influence labour force participation rates. A variety of reasons explain this inadequacy which, if understandable, is far from satisfactory. As mentioned earlier in this discussion, the time lag involved for changes in fertility to register any significant effect on the size of the labour force is for all practical purposes, taken to be almost a generation, and the time limitations over-shadowing most policy makers requires that their planning efforts correspond to a much shorter period than this. Furthermore, given the inadequacies of existing developmental theory, in the available tools of analysis, and the difficulties in empirical research, particularly those involved in conducting extensive economic-demographic field surveys, it is indeed an Herculean task to construct models which may be considered truly operational in a country's overall development programme. An inherent bias thus exists in previous efforts which severely limits their capacity to account for all the relevant variables with due attention being paid to the formulation of the major links and feed-backs existent within the system.

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[16] ECLA, Consideraciones sobre la Situación del Empleo en Centroamérica (E/CN.12/CCE/365 April, 1971); David Turnham, The Employment Problem in Less Developed Countries (Paris: OECD, 1971); Joseph Hodara, "En torno al mercado del empleo en Latinoamérica" (unpublished manuscript, ECLA, Social Affairs Division, 1970) particularly delves into the problem of the multiple functions of employment and their social implications.

To provide a case in point, a comment may now be made upon the path explored by recent versions of the neoclassical type economic-demographic model in regard to the labour force. Attempts to identify the role of the labour force in these models have utilized as a basic constituent a standard Cobb-Douglas production function of the form:

$$Y_t = z(1 + q)^t K_t^{\alpha} L_t^{\beta}$$

where Y_t, K_t, and L_t denote the current year's total output, capital and employed labour respectively; q is the rate of technological progress; and z refers to a constant conversion factor which differs according to the different national economies to which it is applied. The exponents α and β indicate the elasticities of productivity of capital and labour. The sum of α and β identify the returns to scale. Most generally α and β closely approximate or equal 1, according to situations of modestly diminishing or constant returns to scale. The identity of capital is:

$$K_t = K_{t-1} + I_t$$

where K_{t-1} is capital stock at the beginning of the year t, and I_t investment. The labour force is identified as:

$$L_t = \sum_{i = 15-19}^{i = 60-64} (p_{Mi} \, P_{Mi,t} + p_{Fi} \, P_{Fi,t})$$

where p is the labour force participation rate in M or F sex group and i age group, and P is the number of persons according to age and sex group in period t.

The use of this type of aggregate production function in models whose basic orientation is to give empirical support to population control policies in Latin America merits several observations. First, neither changes in the overall participation rates of women consequent upon modifications in the birth rate nor in their sectoral or occupational distribution are considered. Second, the global function could more realistically be disaggregated into a multi-sector model or at least into a two-sector model such as agricultural and non-agricultural with an expansion of the non-agricultural sector into its

component parts.[17]/ Third, in this analytical tool technological progress
is neutral in regard to the productive elasticities of capital and labour
whereas it could more appropriately be viewed as either labour or capital
saving. These points lead to another consideration to be discussed later
which concerns the heterogeneous nature of capital and labour inputs
requiring that the impact of technological absorption upon production and
the utilization of human resources be distinguished not only according to
a two-sector model, but with respect to the alternative technological
levels which may be applied within the sub-groupings of each sector.
Finally, the very use of a Cobb-Douglas type production function entails
certain assumptions regarding the distribution of income between labour
and capital which is dependent upon the relative productivity of these
factors of production. A basic premise is the existence of a competitive
productive structure and progressive returns to the factors involved. In
other words, it is assumed that capital and labour are paid in relation to
their marginal products. This supposition, however, is incongruous with
the situation characteristic of Latin American productive structures which
generally exhibit monopolistic or oligopolistic features and are often
oriented toward capital intensive productive systems especially in the
so-called modern sectors considered essential for attaining high aggregate
economic growth rates. This type of system harbors a regressive distribution
of income detrimental to the adequate compensation and utilization of the
labour force.

The case of Chilean industrial growth illuminates the distribution
problem inherent in the use the Cobb-Douglas function. As may be seen in
table 4, two clearly distinct periods of industrial growth, each with
markedly different characteristics, may be distinguished. The first, from
1914 to 1938, was a period of extended growth with little capital intensity.
It was based essentially upon the utilization of labour and did not
contribute to industrial productivity. During the second period from

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17/ The third five-year plan in Pakistan (1965-1970), for example,
formulated a planning model which incorporated a seven-sector
matrix of: agriculture, manufactured consumer goods, intermediate
goods, investment goods, construction, transportation and
communication, and other services.

Table 4

ANNUAL GROWTH RATES OF CHILEAN MANUFACTURING INDUSTRY BY PERIODS
1914-1961

(Percentages)

Period	Gross product	Gross product per worker	Labour	Capital-product ratio	Capital-labour ratio	Labour's share in the product
1914-16 to 1960-61	4.3	0.9	3.4	0.5	1.4	0.2
1914-16 to 1938-40	3.5	(-) 0.4	3.9	(-) 0.9	(-) 1.3	0.0
1938-40 to 1960-61	5.0	2.5	2.5	2.0	4.5	2.0

Source: Muñoz, op.cit., table 5.1.

Note: The figures shown are three-year averages.

/1938 to

1938 to 1960, the situation was reversed. Its benchmark, the intensive use of capital equipment, may be appreciated by the 4.5 per cent annual increase in the capital-labour coefficient and the 2.0 per cent annual increase in the capital-output coefficient. This was accompanied by significant increases in productivity, in the order of 2.5 per cent annually. Nevertheless, in the returns to productive factors labour received only a very slight annual increase of 0.2 per cent, a major portion of which must be attributed to advances in the social security system after 1938.[18] This is quite different from the experience of the industrialized countries of the West in which a significant increase in labour's share of the national income has been the case, from about 40 per cent in the mid-nineteenth century to almost 70 per cent in the 1960s.[19] Contrary to the assumption of the production function, then, income is not being distributed according to the marginal products of factor inputs.

We therefore stress that the application of this type of production function elaborated in accord with the experience of the more developed countries of the West to an economic-demographic model for Latin America is unrealistic for the formulation of development planning.

As we have seen, conventional approaches either of the Harrod-Domar or neoclassical varieties relate the absolute numerical rise in the labour force to the level of employment and to growth of income. But it does not consider the net effect which lower fertility could have upon the size of the labour force within a relatively short period of time consequent upon changes in female participation and the possibilities for expanded education and later entry into the labour force of younger age groups. Given the paucity of pertinent data, it is indeed difficult to explore these areas.

18/   In 1960-1961, the relative share of wages and salaries in gross value added of Chilean industry was only 26.2 per cent. The data for Chile derives from Oscar Muñoz, Crecimiento Industrial de Chile 1914-1965, (Santiago: Universidad de Chile, Instituto de Economía y Planificación, 1968), pp. 100-101 and 124, and table V-4. For data on other countries of Latin America as compared with industrialized countries see Appendix, table 3.

19/   Simon Kuznets, Modern Economic Growth - Rate, Structure and Spread (New Haven: Yale University Press, 1966), table 4.2.

Certain observations may be made, however, which relate to the qualitative as well as to the quantitative effect of lower fertility.

Among social expenditures, education reacts more quickly and strongly to fertility changes. Even if public expenditures for education were to remain proportionately the same, with smaller numbers of children it would at least be possible to lessen the burden on the system and allow the enormous backlog of educational needs to be confronted under more reasonable circumstances. The objection can hardly be raised that lower fertility would reduce the demand for teachers, schools, and materials since it is a well-known fact that the pressures on Latin American educational facilities are immense, and the existing system does not operate adequately to give school-age children the opportunity to attain satisfactory levels of preparation. In Colombia during the mid-1960s less than 25 per cent of new entrants to primary education completed five years, less than 5.3 per cent of the students completed the course of study in the agricultural training schools and only 2.7 per cent in the commercial schools; the contrast between urban and rural opportunities was even greater: only 6 per cent of rural schools were able to offer five years of primary education; and 60 per cent were in condition to offer only two years.[20] The same general panorama as for education may also be depicted for the areas of nutrition and health.[21]

To return to Figure 1 we may note that by expansion of the capital formation concept and the residual item to include improvements in the educational levels and skills of the new entrants to the labour force, output could be positively affected under conditions of lower fertility. Even if material capital formation were not to change, output could be increased with a smaller labour force embodying larger amounts of human capital precisely because those workers would themselves be more productive.

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[20]   International Labour Office, Towards Full Employment: A Programme for Colombia (Geneva: International Labour Office, 1970), pp. 217-221.

[21]   See ECLA, Trends and Structures of the Latin American Economy (E/CN.12/884), Chapter III. "The Social Implications of Development".

Whether in fact the labour force would be smaller remains to be seen since the net effect of an increase in participation rates especially by women must be considered most particularly in the short- and medium-term. This problem will be discussed later.

A word of caution is required with respect to this greater human capital formation. Obviously, it represents only one side of the coin, a potentiality. Little is to be gained from attempts to reshape the quality of the labour force if under any circumstances labour market demand is such that it cannot absorb a better-trained labour force in a truly productive fashion. The residual element, technology, information and production systems in the conventional model, may increase the national output, but they also affect employment levels, a relation not incorporated into the standard approach. Policy making often seems to have placed the burden of change on adapting the labour force to the existing market for labour. In fact, however, the extent of capital-labour substitution, most especially in the urban manufacturing sector is quite limited. The growth of output has far outpaced that of employment. The observation has already been made that the techniques utilized in the modern sector, whose output is highly sensitive to the demand of the high income groups do not permit very much substitution between labour and capital. The "information packages" supplied together with capital equipment imported in most cases from the United States and Europe are followed slavishly with no real adaptation in accord with Latin American needs on the part of managerial personnel. Industrial concentration and intersectorial corporate links both on a national and multi-national level operate to circumscribe the options open for the use of human resources and the redistribution of income through employment. Imperfections in factor markets also restrict the employment possibilities available in industry – governmental policies encourage firms to adopt highly capital intensive techniques in industries where alternative methods are ample.[22]

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[22] Examples are intermediate metallurgical, textile and numerous other non durable consumer goods industries. See: "Industrial Development in Latin America" Economic Bulletin for Latin America, XIV, 2 (Second Half of 1969), U.N. Sales No. E.69.II.G.5.

On a more general level, economic decisions in Latin America which affect the price of capital and determine who is to gain access to it have strongly contributed to the evolution of this capital intensive investment situation. Overvalued currency, poorly structured credit arrangements, indiscriminately applied import regulations and inflexible protectionism in combination with other policies to promote industrial development as well as fiscal measures which give favoured treatment to capital investment are the policy instruments which direct the present factor allocation away from more labour intensive production methods. In more specific terms: "where an enterprise can import foreign capital goods cheaply (if allocated the foreign exchange to do so), can get financing at low and sometimes even negative rates of interest (in highly inflationary situations), is given duty-free import of capital goods, spares and raw materials and is offered a variety of fiscal incentives to use capital equipment (accelerated depreciation and investment allowance provisions) – in these circumstances it would be surprising if labour intensive techniques and processes were adopted, even if the price of labour were to fall out of sight."[23]

In reality, however, the price of industrial labour is not falling. Especially disturbing is the recent accumulation of evidence indicating that wage trends in Latin America do not follow the pattern presented in the dominant "labour surplus" development models. The less developed countries are characterized by a massive surplus of labour to be found in the traditional areas of the economy (generally considered to be the agricultural sector where negligible or zero marginal productivity is common). The accepted theory explains that the real wage level will be determined by that additional margin which is necessary to attract labour from the "subsistence" sector into jobs in the modern sector, be it industry, commerce, transportation, or the basic services.[24] Accordingly, in the labour surplus economy real

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[23] Elliot J. Berg, "Wages and Employment in Less-Developed Countries" in The Organisation for Economic Co-operation and Development, The Challenge of Unemployment to Development and the Role of Training and Research Insitutes in Development (Paris: OECD, 1971), pp. 109-110.

[24] This is the celebrated body of theory elaborated originally by W. Arthur Lewis and later modified by J.C.H. Fei and G. Ranis.

/wages will

wages will not be pulled up along with productivity increases, as in the case with industrialized countries but will remain practically unchanged until investment fostered by rising profits from lower labour costs absorbs the surplus labour.

In contrast to the above hypothesis, however, it has been shown that for a number of Latin American countries real wages are most often rising in the modern sector at a rate which is higher than expected under the surplus labour model.[25/] For Colombia industrial wages are three times as high as in the traditional sector; in the case of Venezuela they are two and a half times as great; in Chile four times higher; and in Peru wages in industrial firms, where trade union activity is intense are many times higher, varying between 40 and 80 soles per day.

Numerous reasons for this complex phenomenon are advanced: collective bargaining procedures isolated from the general labour market, minimum wage legislation, trade union pressure and governmental intervention, the prevalence of monopolistic conditions in many activities, and a general world wide inflationary mechanism. Among the major consequences of this escalation of wage rates in the modern sector over the supply price of labour is that employment is limited. As the movement of the modern sector's wage level resembles not the trend of a labour surplus economy but that of labour scarce industrial countries, the association between rising real wages and capital intensity also grows with firms adopting as far as possible labour cost conscious policies. It should also be noted

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[25/]   Evidence of the existence of this situation is to be found for fifteen countries: Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Puerto Rico, Trinidad-Tobago, and Venezuela. See: Christopher Clague, "Capital-Labour Substitution in Manufacturing in Underdeveloped Countries" Econométrica, 37,3 (July, 1969), H.A. Turner and D.A.S. Jackson, "On the Determination of the General Wage Level - A World Analysis"; or "Unlimited Labour Forever", The Economic Journal, 80,320 (December, 1970), L. Reynolds and P. Gregory, Wages, Productivity and Industrialization in Puerto Rico, (Homewood, Illinois, 1965), the I.L.O. employment study on Colombia, Ibid., chapter 13, David Turnham, The Employment Problem in Less Developed Countries, (Paris: O.E.C.D., June, 1970), Chapter 14, James L. Payne Labour and Politics in Peru (New Haven: Yale University Press, 1965), pp. 13-26.

that the rural-urban wage differential ranks among the important factors
which stimulate urban migration and further contribute to urban
unemployment. Thus, without possibilities of being absorbed by the
modern sector, the increase in the labour force produced by rapid
population growth only expands the labour surplus itself. Radical
changes in wage structure, the supply conditions of capital as well
as a more slowly expanding labour force are thus called for to lessen
this gap between certain urban labour groups and the traditional,
handicraft, service and rural sectors.

A further conclusion to be drawn from this section relates to an
issue introduced earlier in the discussion of the Cobb-Douglas production
function, namely that of the role of technological progress in the
utilization of the labour force. If the patterns of technological
absorption observed thus far in the region are not changed, it is quite
possible that more investment, more productivity and more total output
associated with the reception of new technical systems will result in
more unemployment. Perhaps overly influenced by conventional Keynesian
and neoclassical thinking, we find ourselves working under the assumption
that overall increases in investment will increase employment and the
utilization of human resources. This follows from the application of
those aggregate production functions which relate the growth of investment
to an increase in the demand for labour while maintaining technology as
a neutral element. But especially since production functions play such
key roles in the formulation of sweeping statements concerning long range
economic growth and technical change and, of late in the construction of
economic-demographic models, the basis for such pronouncements must be
viewed with a critical eye. A growing body of literature already exists
which challenges the present use of conventional aggregate production
functions - in particular, the interrelations posited therein between
technological advance and the elasticity of substitution of capital and
labour. From these studies may be culled a view of the heterogeneity of

/technology rather

technology rather than its homogeneity or neutrality in respect to its effect on the economically active population and the degree of utilization of employed labour.[26]

For this reason it is important to perceive the impact of new technical systems not only across the distinct economic sectors (e.g. agricultural, non-agricultural), but also as applied within each sector, in order to discern alternative technologies appropriate to different levels of the sector. Capital intensity and modern technology are not to be censured per se, but rather their indiscriminate application across an economic system.

To illustrate this point, let us consider the manufacturing sector. Reference has already been made of the practice of modern industries. producers of capital goods or consumer durables to employ production systems which are heavily capital intensive. An implicit corollary is often that the traditional industrial sector in developing countries producing basic consumer goods because of its inherent low-capital-labour ratio would always form a major source of employment. Yet on the contrary, in Latin America the expansion of these industries (e.g. textiles, clothing, food, wood processing, etc.....), following the pattern of the "dynamic" industries has also been to employ the most advanced production techniques available from the more developed nations which offer less possibilities to absorb labour. This process has occurred in Brazil where an expansion of traditional industries was

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[26] See: Franklin M. Fisher, "The Existence of Aggregate Production Functions", Económetrica, 37,4 (October, 1969); P. Garegnani, "Heterogeneous Capital, the Profuction Function and the Theory of Distribution", The Review of Economic Studies, 37,111 (July, 1970): The elasticity of factor substitution parameter has been expanded from that of the Cobb-Douglas and the CES (constant elasticity of substitution) functions to vary in linear fashion as a tool to analyze different elasticities of substitution within different sectors across countries by Nagesh S. Revankar, "A Class of Variable Elasticity of Substitution Production Function", Económetrica, 39,1 (January, 1971). Promising results in Latin America might be forthcoming from the use of this VES function if adequate data on the price of capital variable were gathered and proper allowances made for the assumptions about competitive conditions existent in the factor and product markets.

accompanied by an overall modernization of the production techniques
with adverse effects on the increase of job openings in these industries.[27]

A critical issue therewith arises especially if, as a result of
an effective policy of income redistribution accompanied by a notable
increase in the demand for basic consumer goods, these industries were
to expand according to the patterns already established. Not only would
the firms adopting such capital intensive methods provide a smaller
labour market themselves, but the danger exists that they would bring
increasing pressure to bear against the survival of small labour
intensive enterprises operating in the same sub-sector. It is for
this reason that in the formulation of development programmes during
the Second Development Decade particular attention on the part of the
region's policy makers ought to be paid this crucial problem area.

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27/   Brazil, Instituto de Pesquisa Económico-Social Aplicada, Industrias
      Tradicionais: Um Reexame Crítico (Rio de Janeiro, 1969, Mimeo) as
      discussed in: Esteban Lederman, Secuencia del Proceso de Formulación
      de Metas de Empleo en la Planificación, document presented to the
      DEMOPLAN Conference, Santiago: August, 1971 (ST/ECLA/Conf.41/L.5),
      pp. 13-19.

/VI. FEMALE

VI. FEMALE ECONOMIC ACTIVITY IN LATIN AMERICA

The participation of women in the labour force rises to a cardinal position in any treatment of the economic effects of fertility decline. In addition, the more detailed attention afforded in this paper to the determinants and consequences of female economic activity is justified if the implications of the entrance of over ten million women into the labour force of Latin America in the projections to the end of the century referred to earlier are reflected upon. In itself, female economic activity is a complex problem since it responds not only to those variables which act upon male participation such as age structure, the demand for labour, the extent of education, and social security facilities, but also marital status, number and age of children, husband's income level, and cultural factors. Furthermore, the issue resists any comprehensive analysis of the direction and degree of causation since adequate data is sorely lacking. Not only is census data not available with which to measure the effect on activity rates according to age and number of children, but in some cases even the most elementary information is not forthcoming. The 1950 Ecuadorian census, for example, reported female activity rates at 30.3 per cent, while in 1962 it was declared to be 16.7 per cent; a recent analysis of human resources in that country after concluding that the difference was due to tremendous errors in the 1962 enumeration, summarily resolved the problem by adjusting rural female participation rate upward by somewhat over 50 per cent. [28/]

Until more reliable and detailed empirical source material are available either in the form of official samples of national censuses or by way of surveys, it will be impossible to reach conclusions of a definitive nature which identify and illuminate with precision the inter-action of all the relevant variables. Nonetheless, on the basis of existing data some commnets may be made which, in conjunction with conclusions of previous studies serve to reveal the major currents of this problem area. For the most part the information on which the present analysis is based derives from a comparative study of urban fertility in seven major

28/ Ecuador, Junta Nacional de Planificación y Coordinación, Plan Ecuatoriano para el Desarrollo de los Recursos Humanos, (Quito, 1970), Volumen I, p. 89. The same study also shows that of a sample of 377,931 men and 156,107 women, 12.8 per cent of the men and 15.3 per cent of the women are employed over 70 hours per week and 2.4 per cent of the total wish to work over 30 hours per week more. See: Ibid., Tables II-28-A and II-28-B.

Latin American metropolitan areas conducted by the Latin American Demographic Centre.[29/] The surveys of these cities, covering samples of 2,100 to 2,500 women, twenty to fifty years of age were conducted between late 1963 and the end of 1964. Unfortunately, until the present moment the tabulations are not controlled by a third variable and so findings perforce must be tentative in nature.

Table 5

FEMALE ACTIVITY RATES BY CITY AND COUNTRY

(Percentages)

City	Activity rate	Country [a/]	Activity rate
Bogotá	39.1	Colombia	20.3
Buenos Aires	38.2	Argentina	23.2
Caracas	26.8	Venezuela	20.2
Mexico	26.8	Mexico	19.7
Panama	38.1	Panama	24.7
San José	39.5	Costa Rica	17.5
Río de Janeiro	30.7	Brazil	18.4

Source: CELADE: (PECFAL-U), Tabulation Group II, Variables 25 x 12 and International Labour Office, Yearbook of Labour Statistics, 1969. Based on data in Table 2A.

a/   15 years + according to 1960 round of censuses.

29/   CELADE: Programa de Encuestas Comparativas de Fecundidad — Zona Urbana, hereafter referred to as PECFAL-U.

/Table 6

Table 6

FEMALE AGE SPECIFIC ACTIVITY RATES BY URBAN AREA AND BY COUNTRY

(Percentages)

Age	A. Female age specific activity rates by urban area							B. Female age specific activity rates by country around 1960						
	Bogotá	Buenos Aires	Caracas	México	Panamá	San José	Río de Janeiro	Colombia	Argentina	Venezuela	Mexico	Panama	Costa Rica	Brazil
20-24	45.6	59.1	32.0	32.8	37.4	34.6	28.0	26.3	39.7	25.8	23.0	31.2	24.4	22.5
25-29	37.2	36.9	30.6	25.8	38.2	35.7	26.6	21.6	29.4	23.8	16.9	28.3	20.3	18.8
30-34	36.4	34.4	31.2	29.2	33.9	30.6	24.4	19.8	24.4	22.9	16.1	27.7	18.8	17.4
35-39	39.7	37.0	30.7	29.6	39.3	33.2	19.9	19.7	22.6	22.0	17.1	27.1	17.9	17.2
40-44	37.0	30.1	38.2	33.0	41.9	33.3	18.4	19.8	21.5	21.0	18.3	27.0	16.6	16.8
45-49	37.3	23.5	31.1	34.6	40.5	30.0	22.2	19.3	19.4	19.3	18.3	26.1	14.9	16.3
50 +	25.9	22.1	29.8	32.0	32.6	34.2	9.2							

Sources: For A: CELADE (PECFAL-U), tabulation group II, variables 14 x 26.

For B: CELADE: Boletín Demográfico, Año 2, vol. III, (January 1969), table 5 and El Colegio de México, Dinámica de la Población de México (Mexico 1970), table VI-7.

- 35 -

/Activity rates

Activity rates for the women vary between 26.8 and 39.5 per cent (table 5), and the course of the age specific rates for the major cities correspond in general terms to the pattern observed for the nations with the exceptions of Venezuela and Costa Rica (table 6). Numerous studies have pointed to the positive correlation existing between the evolution of urbanization-industrialization and feminine participation in the labour force. In addition, it has been maintained that another principal feature of female activity is the inverse relationship to be found between fertility and residence in large urban centres among economically active women. Table 5 confirms the first of these observations; the second hypothesis will be dealt with later. The activity rates for women in the seven cities are considerably higher than those for the respective countries. Naturally, the age limitations of the surveys tend to distort the differences as well as the fact that women are undernumerated in the Latin American rural sector not only by reason of simple error but also by design as in the case of women in farm households. However, age specific activity rates from age 20 to 50 evidence the same trend (table 6). Degree of urbanization also appears to exercise influence over activity rates. In Venezuela (1961), the rate for women living in urban areas outside of Caracas was 16.6 per cent while the rate for Caracas was 29.1 per cent. The same situation was found for Guatemala (1964), where the rates were: Guatemala City, 28.2 per cent; other urban areas 13.7 per cent; and similarly in Chile (1960), the rates were Santiago 31.6 per cent; other urban areas 23.9 per cent. In Mexico (1960), the differences between Mexico City rates and other urban places were also considerable.[30]

As might be expected, the largest proportions of the women interviewed were occupied in the lower occupational categories with noticeable differences among the countries, most probably to be explained either by transitional stages in the economic structure of the country, rapid urban migration, or by a greater degree of industrialization already attained over a large economic base. This is indicated (table 7), in the cases of Buenos Aires with 16.2 per cent of its active women in unspecialized manual occupations in

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30/ Murray Gendell, "The Trends and Patterns of the Economic Activity of Women in Latin America during the 1950's", Estadística, 24,100 (September, 1968), p. 567, El Colegio de México, Dinámica de la Población de México, (México, D.F., 1970), Table VI-8 and CELADE, Tabulations from sample of 1960 Chilean census in "Operación Muestra de Censos" (Proyecto OMUECE), Table 33.

varying degrees of contrast to Mexico (27.2 per cent), Bogotá (36.2 per cent), Caracas (41.3 per cent), and Río de Janeiro (51.9 per cent) leaving aside for the moment the instances of Panama and San José whose national economic structure and evolution present somewhat unique situations.

To some extent this profile is also conditioned by the preparation of the women in the labour force. Low educational attainment limits the employment possibilities of women to those occupations which require no special preparation and which mirror negligible productivity and income levels (such as the general service sector). Table 8B reveals a strong relation between women with no schooling to only three years of primary education, which in most cases would mark them as functional illiterates and the lowest occupational categories. This corresponds in general to the differential among cities of women in unspecialized manual occupations just noted in the preceeding paragraph. Thus, in Buenos Aires there are 6.9 per cent of active women with no more than three years of schooling, while in Mexico there are 36.3 per cent, Bogotá 38.8 per cent, Caracas 32.3 per cent, and Río 34.8 per cent.

A significant difference is also to be noticed in activity rates according to educational level where a positive correlation exists with regard to those women who had some university experience even if uncompleted (Table 8A). A higher correlation with respect to the activity rates of women with secondary education would be evidenced if this category were broken down among those who had merely attended 1 to 3 years and those who had completed the secondary cycle. The implications of this phenomenon to circumstances of lower fertility may be related to the possibilities for governments to augment the proportions of people of school age who may be given the opportunity to lengthen their period of education and thus enter the labour force at a later age. In the long term, however, larger numbers of better educated women will enter the labour force with higher occupational aspirations -- and this will require the broad-based reforms fundamental to a global developmental process capable of providing considerably more jobs with adequate income levels for a skilled labour force.

Table 7

DISTRIBUTION OF ACTIVE WOMEN ACCORDING TO OCCUPATION

(Percentages)

Occupation	Bogotá	Buenos Aires	Caracas	México	Panamá	San José	Río de Janeiro
Professional	0.9	0.7	2.3	3.0	1.3	1.1	1.7
Managerial	4.0	1.5	2.1	5.5	7.3	3.8	14.2
Higher supervisory	5.0	19.4	15.5	11.7	26.5	22.6	11.2
Lower supervisory	17.9	28.4	14.0	25.6	6.3	13.5	8.1
Specialized manual	36.0	33.8	24.8	27.0	27.1	44.0	12.9
Unspecialized manual	36.2	16.2	41.3	27.2	31.5	15.0	51.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: CELADE (PECFAL-U), Tabulation Group II, variables 14 x 26

/Table 8

Table 8

FEMALE ECONOMIC ACTIVITY BY EDUCATIONAL LEVEL

| City | A. Activity rates by education | | | | B. Distribution of active women by education | | | | |
	None – 3 years primary	Primary, 4 years + and complete	Second-ary	University	None – 3 years primary	Primary, 4 years + and complete	Second-ary	University	Total
Bogotá	40.6	37.2	38.2	69.0	38.8	30.3	28.3	2.6	100.0
Buenos Aires	39.6	31.6	46.4	65.9	6.9	52.4	29.3	11.4	100.0
Caracas	29.4	29.7	35.3	57.5	32.3	38.5	22.8	6.4	100.0
México	37.9	27.5	37.1	50.0	36.3	29.3	26.1	8.3	100.0
Panamá	32.0	32.0	39.0	63.3	7.5	31.7	45.0	15.8	100.0
San José	34.1	36.2	42.5	70.5	22.6	37.9	27.8	11.7	100.0
Río de Janeiro	35.3	24.5	31.8	49.3	34.8	28.6	32.0	4.6	100.0

Source: CELADE (PECFAL-U), Tabulation group II, variables 20 x 25.

/It is

It is of interest to examine to what extent active women are employed either in or outside the home inasmuch as this variable presumably would have some direct relation to fertility levels. The largest percentage of women who were occupied outside the home was to be found in Panama, Buenos Aires and San José with a marked difference between these levels and those observed in Bogotá, Caracas, México and Río (table 9). For those active within the home, a deviation in the combination of cities may be seen with the percentages registered in Bogotá, San José and Río now grouped together in the highest ranking. This denotes a greater significance of artisan cottage industries and services in these cities. The data also suggest that as a result of changes in production and distribution systems, e.g. the growth of modern industries; activities such as dressmaker, small retail outlets, etc. ... are no longer as viable in the other cities which exhibit relatively less home based female economic participation.

Further insight into the manner by which this transitional mechanism operates may be gleaned from the changes noted in female participation rates in Mexico between 1950 and 1960. In Figure 2 it may be seen that both the entire nation and the region comprising the State of Mexico and the Federal District, that is, the most urbanized area, female economic activity rose for all age groups from 15 to 59 years of age and diminished for those groups at the extremes of the age spectrum. It may also be observed that while in 1950, participation rates remain practically constant from age 25 on, in 1960, they fall constantly from 50 years of age. Since the same trend exists for male participation rates, only in a more marked fashion, it is reasonable to assume that the changes in the extreme age groups correspond to such factors as expanded educational and social security coverage. Closer examination of the behaviour of the different groups within the 15 to 59 year range reveals changes from 1950 to 1960, which to some degree may be related to the phenomenon of the evolution of the economic structure discussed in the preceding paragraph. Whereas in 1950, the highest participation rates at the lower age level correspond to the 15-19 group, in 1960, they are found in that of 20-24 years of age. Yet in 1960, there is significantly higher economic activity on the part of women between the ages of 40 and 50. The presence of the U-shaped curve thus formed in 1960 would seem to indicate the presence of a transitional economic stage with high rates for the older female population (characteristic

Table 9

PERCENTAGE DISTRIBUTION OF WOMEN INACTIVE, ACTIVE: WITHIN AND OUTSIDE HOME

	Bogotá	Buenos Aires	Caracas	México	Panamá	San José	Río de Janeiro
Inactive	60.9	61.8	73.2	73.2	61.9	60.5	69.3
Active home	19.7	8.5	7.6	9.3	7.6	14.2	13.1
Active outside	19.4	29.7	19.2	17.5	30.5	25.3	17.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: CELADE (PEOFAL-U) Tabulation Group II, variables 25 x 12

of less developed nations), and rising rates for the younger generation
(typical of more concentrated industrial economies). Although this
suggests the coexistence of two economic systems, the trend from 1950
to 1960 points to the growing prevalence of modern techniques of production
and distribution in Mexico.

Parting from the supposition that the major responsibility of women
responds to their family obligations, the relationship between female
participation in the working force and marital status may be examined.
In table 10A it may be seen that significant differences in activity rates
exist between two types of marital status. For single women, widows and
those separated or divorced, activity rates - although to slightly differing
degrees -- all exhibit the same tendency towards much higher activity rates
than married women or those living in consensual union. The lowest rates
were to be found among married women with the exceptions of Panama and
Buenos Aires. But in the latter case the miniscule number of cases reported
of consensual union probably affects the pattern.

Well over half of the inactive women were married in each of the
cities except in Panama where 45.5 per cent were married (table 10C). A
third of the inactive women in that city and almost 27 per cent of all
women interviewed were living in consensual union, displaying a rather
large proportion of women in that marital status as compared with the other
cities. A closer examination of table 10B and 10D reveals that for all
cities there is a greater percentage of single women among those active
in the labour force which could point to other intervening variables, such
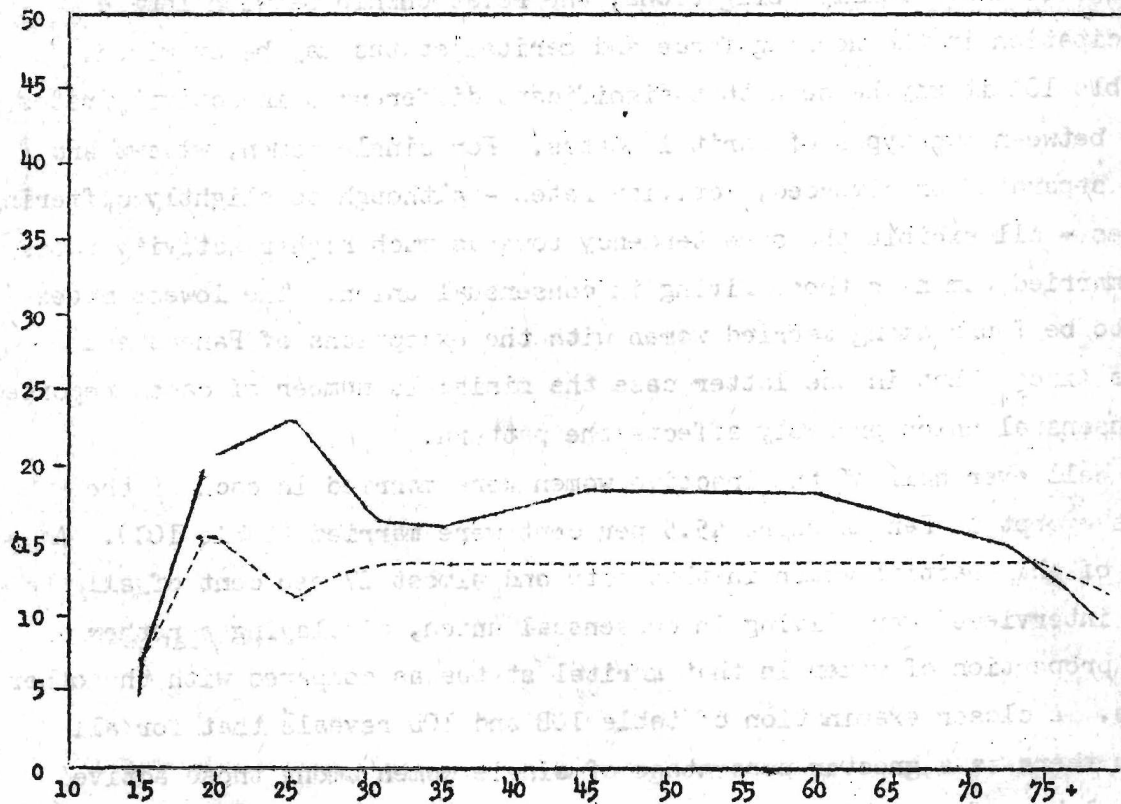as age at marriage, as determining the lower fertility among economically

/Table 10

Figure 2

MEXICO: FEMALE AGE SPECIFIC ACTIVITY RATES, 1950-1960

State of Mexico and Federal District
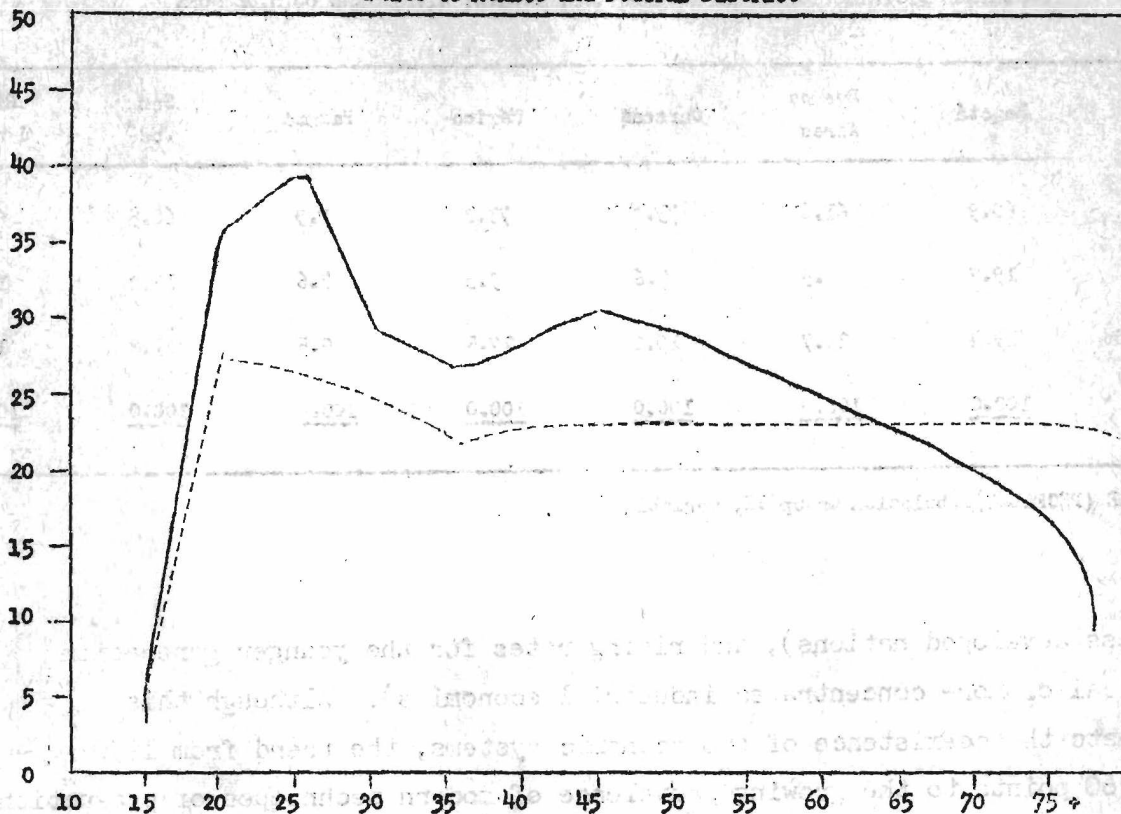
Country

Source: Appendix, Table IV.

———— 1960

------ 1950

Table 10

FEMALE ECONOMIC ACTIVITY BY MARITAL STATUS

(Percentages)

City	Single	Married	Consensual union	Widowed separated, etc.	Total
A. Activity rates by marital status					
Bogotá	72.0	25.4	34.3	62.1	39.3 a/
Buenos Aires	70.2	25.7	21.1	67.6	35.5 a/
Caracas	57.9	10.6	13.5	54.2	31.8 a/
México	62.0	17.6	27.6	61.6	30.4 a/
Panamá	55.6	31.5	24.4	59.6	37.9 a/
San José	60.4	21.5	26.6	50.5	33.2 a/
Río de Janeiro	49.3	12.2	29.3	43.9	23.3 a/
B. Distribution of active women by marital status					
Bogotá	34.9	41.4	4.0	19.7	100.0
Buenos Aires	34.0	55.7	0.5	9.8	100.0
Caracas	29.2	34.4	6.3	30.1	100.0
México	33.7	37.7	7.2	21.4	100.0
Panamá	25.1	34.3	17.1	23.5	100.0
San José	38.6	39.1	5.9	16.4	100.0
Río de Janeiro	40.5	34.3	7.1	18.1	100.0
C. Distribution of inactive women by marital status					
Bogotá	8.8	78.6	4.9	7.7	100.0
Buenos Aires	8.0	88.3	1.1	2.6	100.0
Caracas	9.0	59.1	19.1	11.9	100.0
México	9.0	77.0	8.2	5.8	100.0
Panamá	12.3	45.5	32.5	9.7	100.0
San José	12.6	71.1	8.2	8.1	100.0
Río de Janeiro	12.7	75.1	5.2	7.0	100.0
D. Distribution of all women by marital status					
Bogotá	19.1	64.0	4.5	12.4	100.0
Buenos Aires	17.2	76.8	0.9	5.1	100.0
Caracas	16.0	51.3	15.0	17.7	100.0
México	16.5	65.0	7.9	10.6	100.0
Panamá	17.2	41.2	26.7	14.9	100.0
San José	21.3	60.5	7.4	10.8	100.0
Río de Janeiro	19.2	65.5	5.7	9.6	100.0

Source: CELADE (PECFAL-U), Tabulation Group II, variables 19 x 26.

a/ Total activity rates vary from those in table 3 due to the different number of respondents.

/active women

active women which is indicated in table 11.[31]

Apart from the increased domestic obligations of married women and their greater likelihood of pregnancy (in which case number and age of children will be most important factors in explaining labour force participation), the role of married women (as determined by the prevailing attitude toward working wives and the adversion of employers to expose themselves to the risk of providing maternity leave and pay), and their dependence upon their husband's income are, no doubt, influential variables. With a limited demand for labour, married women who might enter the labour force do not; they either remain inactive or, if once employed and having lost their jobs, are more likely to fall back on the husband's income as the family's source of support.

The hypothesis referred to earlier (page 36) concerning the inverse relation between female economic activity and fertility rates may now be considered. The results of the survey add weight to this frequently reported occurrence (table 11).[32] A significant difference in the average number of children between active and inactive women exists for all seven cities. Lower fertility among economically active women than among those inactive is clearly distinguished. The lowest average number of live births for working women, as is to be expected, occurs in Buenos Aires, with exceptionally higher levels in Mexico and Caracas. And for Chile a recent study has provided empirical evidence to show that female participation rates are differential not only based on whether or not the woman has had children, but to a greater degree according to the number of children, a factor which would obviously affect the woman's domestic obligations. From an analysis

31/ Detailed studies of the effects of fertility, age structure, and age of marriage on activity rates are to be found in Ana María Rothman, La Participación Femenina en Actividades Económicas en su Relación con el Nivel de Fecundidad en Buenos Aires y México (Santiago: CELADE, 1969) and Murray Gendell et al, "Fertility and Economic Activity of Women in Guatemala City, 1964" Demography, 7,3 (August, 1970).

32/ In the early 1960's this negative correlation was discovered for 13 metropolitan areas of Latin America to the extent that for every 1 per cent increase in the female participation rate, the number of children per 1 000 women dropped by 7 per cent. See: Andrew Collver and Eleanor Langlois "The Female Labour Force in Metropolitan Areas: An International Comparison", Economic Development and Cultural Change, 10,4 (July, 1962), p. 384.

Table 11

PERCENTAGE DISTRIBUTION AND AVERAGE NUMBER OF LIVE BIRTHS PER WOMAN ACCORDING TO ACTIVITY

City	Inactive		Active		Total		Active outside home	
	Percentage	Average number of children	Percentage	Average number of children	Percentage	Average number of children	Percentage	Average number of children
Bogotá	60.9	3.68	39.1	2.36	100.0	3.16	19.4	2.12
Buenos Aires	61.8	1.78	38.2	1.01	100.0	1.49	29.7	0.84
Caracas	73.2	3.69	26.8	3.11	100.0	3.53	19.2	3.12
México	73.2	4.08	26.8	3.77	100.0	4.00	17.5	3.42
Panamá	61.9	3.07	38.1	2.26	100.0	2.76	30.5	1.38
San José	60.5	3.58	39.5	1.92	100.0	2.92	25.3	1.77
Río de Janeiro	69.3	2.46	30.7	1.81	100.0	2.26	17.6	1.44

Source: CELADE (PECFAL-U) Tabulation Group II, variables 25 x 12

Table 12

AVERAGE NUMBER OF LIVE BIRTHS PER WOMAN AND OBSERVED
DIFFERENCE ACCORDING TO ACTIVITY STATUS

City	Inactive (1)	Active (2)	Active outside home (3)	A Difference (2-1)	B Difference (3-1)
Bogotá	3.68	2.36	2.12	-1.32	-1.56
Buenos Aires	1.78	1.01	0.84	-0.77	-0.94
Caracas	3.69	3.11	3.12	-0.58	-0.57
México	4.08	3.77	3.42	-0.31	-0.66
Panamá	3.07	2.26	1.38	-0.81	-1.69
San José	3.58	1.92	1.77	-1.66	-1.81
Río de Janeiro	2.46	1.81	1.44	-0.65	-1.02

Source: Table 9.

of 1960 census data it was found that for the country as a whole the effect
of one child on feminine activity rates was minimal, but that for those
women who were married or living in consensual union, the presence of two
or more children considerably reduced economic activity.[33]

With respect to those women active outside the home, the effect of
childbearing evidenced in the survey is quite strong. The differential in
the average number of live births is greater if a comparison is made between
women who work away from home and those who are inactive (table 12). A
corollary to this relation is that the fertility pattern of those women
who are active within the home is more similar to those who are inactive
with the apparent exception of Caracas, the only case where fertility levels
for women active away from home are slightly higher than for those women
working at home. Although numerically small, this sole deviation from
the pattern of the other cities suggests that other social factors are
operating at stronger levels there than elsewhere as might be such a problem
as child neglect or abandonment. In fact, it has been reported that the
majority of mothers who work away from home are obliged to do so due to
the absence or lack of responsibility of the fathers.[34]

An analysis of the fertility differential among the cities reveals
that for Buenos Aires, fertility is the lowest in all categories - inactive,
active, and active away from home - with Mexico and Caracas exhibiting the
highest levels. A comparison of the data among the cities themselves
leads to a further observation that for the developing countries of
Latin America, the trend of rapid urbanization unless accompanied by
a corresponding process of modernization and global development is not
conducive to lower fertility.[35]

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[33]   Victoria Ostrovich, "Características y Evolución de la Población
        Económicamente Activa de Chile, 1940-1960" (Santiago: Universidad
        de Chile, Centro de Estudios Socio-económicos, 1970), pp. 30-31.

[34]   The illegitimacy rate in Venezuela is 62.5 per cent, and great concern
        has been expressed by the Venezuelan Ministry of Health for the well-
        being of the large numbers of children who are growing up in the
        absence of a father figure. See: Population Reference Bureau,
        Población, 2,1 (1971).

[35]   This, of course, refers only to the situation among cities, and not
        that to be found between rural and urban areas where differential
        fertility levels certainly exist.

/Unfortunately, the

Unfortunately, the survey data do not permit analysis by age of children. Nontheless, other researchers have demonstrated that this is a key variable delineating the extent of female economic activity. One study has shown that in Chile women's participation in the labour force declines in the order of 3 per cent for every additional child under 14 years of age.[36] This appears to be of particular importance in those cases where two or more children are already present since the possibilities for women (especially younger mothers who would not have older children) to arrange for the care of the children while they work is quite limited.

VII. FERTILITY DECLINE AND THE EVOLUTION OF THE LABOUR FORCE IN LATIN AMERICA

The relationship between urban participation in the labour force and fertility is such, then, that it may be expected that any significant decrease in fertility will result in larger numbers of women looking for jobs, and this, in turn, will increase the strain upon the already over-burdened labour absorptive capacity of the Latin American economies. Whatever the direction of causation - employment status as a cause of fertility or as a consequence - and both are no doubt operative, the prospects on this level alone are not heartening for the medium-term. Yet the other relevant factors must be recalled. For Mexico it has been shown that demographic factors account but for a small percentage of the increase in female activity.[37] In the case of married women and those living in consensual union, the husband's condition of employment, the attitude of society with respect to working wives and mothers, and that of employers to hiring married women and incurring consequent liabilities to higher labour costs under labour regulations governing maternal leave represent potentially important obstacles to the employment of many women. Also, one of the most important factors which would act

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[36] Population Council, "Chile", Country Profiles (October, 1970), p.3.

[37] El Colegio de México, Dinámica de la Población de México, pp. 155, 164-168.

/to diminish

to diminish female activity rates is the very limited availability of job opportunities itself.

When the levels of un- and underemployment are high, recourse may be had to the "discouraged" and "additional worker" hypotheses to fathom the problem of the incorporation of potential workers into the labour force. The first hypothesis states that when unemployment increases, a number of potential workers leave the labour force, and do not even seek work because they are discouraged by the lack of job opportunities. The counterpoint to the first hypothesis is that of the "additional worker" which occurs when in response to rising unemployment so-called secondary workers entre the labour force. Quarterly survey data for Bogotá from 1963 to 1966, used in a regression study to test these hypotheses indicated that total participation rates for both sexes between the ages 15 to 54 did indeed fall as unemployment rose.[38/] The association was such that a 1 per cent increase in the unemployment rate was accompanied by a 2.6 per cent decrease in the participation rate. For women in the 15-19 year old age group and older women in the 45-49 group, however, a positive relation existed so that an increase of about 1 per cent in the rate of unemployment was related to an increase of 2 to 2.6 per cent in the participation rate; the rate of increased participation for men aged 45-49 was 0.5 per cent. The presence of this "additional worker" effect within these age groups particularly for women is explained in terms of the increased need during periods of growing over-all unemployment for women of those ages to supplement family incomes by going out to work. This need is made even more critical given the low and unequal distribution of income and the lack of unemployment insurance. At the same time it is important to note that the Bogotá study points to the existence of a social bias against the hiring of women and the fact that a slack labour market exercises negative pressures on the participation rates of the majority of women age 15-54.

38/ For the formulation of this hypothesis see Thomas Dernberg and Kenneth Strand, "Hidden Employment, 1953-1963: A Quantitative Analysis by Age and Sex", American Economic Review, 56,1 (March, 1966), pp. 71-96. Its application to the case of Colombia is found in Miguel Urrutia, "El Desempleo Disfrazado en Colombia" Empleo y Desempleo en Colombia, (Bogotá: Centro de Estudios sobre Desarrollo Económico, 1968), pp. 39-52.

A weighing of the net effect of the discouraged and additional worker in the labour force suggests that female activity rates will not increase substantially as a result of lower fertility until the demand for labour undergoes meaningful alteration. To some degree the pressure will be offset in addition by the relative expansion of the educational and vocational training system facilitated under conditions of lower fertility. Of course, the latter is a medium-term palliative, and jobs will eventually have to be found for the better trained women upon completion of their education.

In quantitative terms for the long-run, the aforementioned process may be approximately summarized by the labour force projection for Latin America to the year 2000 mentioned earlier. Assuming constant participation rates, a continuation of past trends in fertility and overall economic growth (table 13, Hypothesis 1), the economically active population of the region for the end of the century was calculated at about 217.5 million people. But under circumstances of more rapidly decreasing fertility, redistribution of income and consumption patterns, expanded educational and social welfare systems, increased per capita income and changing male and female participation in the urban labour market (Hypothesis 2), the figure rises to 221.2 million people. Although, at first glance the difference in that time frame may not appear very great, its sex-age composition alludes to the demands which would be made of the region's economic structure to furnish jobs for women, education for the young and social security for the old.

Table 13

LATIN AMERICA: ECONOMICALLY ACTIVE POPULATION, YEAR 2000

(Thousands of persons)

	Total	Men	Women
Hypothesis 2	221 183.9	162 888.7	57 295.2
Hypothesis 1	217 538.3	170 482.6	47 055.7
Diference	3 645.6	-6 593.9	10 239.5

Source: Fucaraccio and Arretx, Relaciones entre Variables Económicas y Demográficas, table 20.

/The above

The above calculation, however, may overestimate to a considerable extent the increase in female participation since it is based upon the results of a linear regression analysis which depends only upon the gross birth rate variable to determine urban female economic activity. And as has already been emphasized, this is a more highly complicated problem area. The instances of Argentina and Uruguay should be recalled in regard to this issue. They are countries in which the burden of child care is no greater than in most industrialized countries of the West as an impediment to female economic activity, and yet female participation is significantly lower. In view of the data already presented, it is not unreasonable to conclude that a weak labour market in combination with social prejudices restrains female participation rates from reaching higher levels. The cultural bias which better educated women will have to confront in their search for jobs compatible with their preparation was manifest in a recent study conducted in Chile. In interviews with industrial supervisory personnel in Santiago, the overwhelming reluctance of these men to accept women who had graduated from technical secondary schools in either technical or lower supervisory capacity was most evident. [39]

Since the empirical data needed to measure and forecast with precision the net effect of these opposing forces is not yet available in sufficient quantity, findings must be tentative in nature. Yet it should be noted that although the influences determining female incorporation into the labour force are extremely complex, those factors are not active in the case of male participation rates which are primarily governed by age structure (with the exception of the very young and oldest groups); and in the long-term this responds directly to the birth rate. As indicated earlier in this discussion population control is essentially complementary in nature with respect to a unified development strategy just as is concern over per capita income growth rates. From a broader perspective the choice is not between lower fertility and higher growth rates, nor between output or employment, the long heralded

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[39] Alicja Iwánska, "Final Report from the Mission: Pilot Project on the Access of Women to Technological Careers", (unpublished manuscript, UNESCO Regular Program Reg/CHILSOC/1).

factor-proportions problem. These are merely artificial dichotomies
which may indeed present short-run contradictions, but which ignore the
basic question of the well-being of much of the population of Latin
America and avoid the issue of human welfare planning as a total process.
Integration rather than separation of population, employment and economic
growth policies is an essential requirement toward the realization of this
goal.

VIII. DATA REQUIREMENTS AND RESEARCH STRATEGY

Attention has been called throughout the preceding pages to stumbling blocks which impede the researcher in his task of providing that incisive analysis most needed by policy makers in Latin America. Several of these merit further comment, particularly if the implications of resolution 310 of ECLA's Fourteenth Session are considered. Inasmuch as the latter calls for an evaluation of the region's developmental process on a biennial basis during the Second Development Decade, the limitations imposed heretofore by the shortage of empirical data as well as the deficiencies of the conceptual framework employed in the elaboration of national programmes rise to the forefront. Consequently, the future efforts of both national and international organizations should proceed toward the evaluation and improvement of the tools of analysis on these two levels: data and concepts,

This approach will not yield easy solutions since, in practice at least, both levels are often mutually dependent and condition one another. A vicious circle is propagated which extirpates flexibility and originality from data collecting and analytical techniques. General concepts and definitions derived for their applicability to all countries fail to provide adequate insight into the vital problem areas of individual nations. A gap exists between what is being measured according to the uniform yardstick and the real information needs created by distinct regional and national situations. Non-complex guidelines may be useful for their easy adaptation to existing data gathering methods but the nature of what is being measured is a different matter. On the other hand countries require definitions which are operational in terms of level of development and the extent of resources made available for data collection. Under these circumstances the feasibility of a biennial examination and evaluation of the developmental process to which ECLA is committed under resolution 310 (XIV) must be submitted to a hard examination especially in regard to such key problem areas as population growth, internal migration, urbanization, labour force evolution and the utilization of human resources. Initially, and as a _sine qua non_, concepts, definitions and statistical services will require a retooling for any evaluation of the region to have meaning.

/For example,

For example, where certain aggregate concepts exist, e.g. un-and under-employment, measured by a single frame of reference, e.g. hours worked, new methods will be needed. Perhaps multi-dimensional analysis adopted in accord with the specific situation of each country will have to be implemented, e.g. the circumstances of employment referred to earlier.

As a further illustration of the above dilemma, in the section of this paper dealing with female economic activity in Latin America reference was made to the underenumeration of women in rural areas (page 36). The 1962 Ecuadorian census served as an example wherein this occurred by reason of simple error, and yet the same results derive from the classification systems used by countries in the region to define members of the labour force in a census. Thus it is that a certain bias is introduced by the "money economy" concept prevalent in the definition of the economically active population, according to which primary emphasis is placed upon the generation of income. This work whose product entails income invariably relates to the established market structure of the national economy just as it is also associated with national per capita income levels, another standard index. In the less developed countries of Latin America, however, where significant segments of the population labour essentially in an agricultural subsistence sphere, for most purposes at the margin of the market economy, the universal application of a census definition of labour force derived from this market or monetary income construct tends to render illusory information, especially where women in farm households are concerned.

The category of "unpaid family worker" does of course exist, and international bodies have recommended that family helpers who do not receive pay be counted as economically active if their work contribution meets a given minimum time requirement per week. Yet this guideline is not effectively applied in census taking in the rural sector since it depends to so great an extent upon the subjective evaluation of the enumerator and respondant, whose sensitivity to the question of work whose product does not register income and amount of time occupied varies considerably from that of the census planner. The recalcitrance of the data to comparative analysis either among countries or in the same country within intercensal periods thus becomes evident. For example, in the 1960 census round,

/women in

women in Paraguay and the Dominican Republic had gross participation rates of 14.4 and 5.9 per cent respectively. Peru in 1940 showed 27.9 per cent, and in 1961 the gross activity rate for women had declined in a curiously rapid fashion to 13.6 per cent. [40]

The shortcomings of data may be appreciated by an examination of that body of material published to date by national and international agencies which provides sources for the study of the labour force. In brief the following state of affairs is revealed: [41]

1. An overall staleness of the data. For that material found in census publications, the situation could not ordinarily be expected to change until the results of the 1970 census round are released. Other sources indicate a time lag of several years.

2. There is a general lack of information on the economically active population by level of education, and few cross references by branch of economic activity, occupation and education.

3. Of the employment indicators which do exist, the most recently published appear in the Yearbook of Labour Statistics, which contains virtually no data for 14 Latin American countries and no country for which complete data are available. Even for the standard category of number of hours worked there is practically no information for 19 countries. The one exception, Peru, has useful data for the Lima-Callao area only and this is derived from a sample survey. The importance of this latter source for future research will be discussed further on.

4. The possibility of developing a research strategy for the study of the labour force in relation to other dimensions of its socio-economic milieu, which was stressed above, is seriously limited by the lack of the

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[40] Juan Carlos Elizaga and Roger Mellon, Población Económicamente Activa (CELADE: 1970, Serie B, N° 30), pp. 10-14, 33, 51 and United Nations, Demographic Aspects of Manpower (Sales N° 61.XIII.4), pp. 2-11.

[41] For detailed information on the extent of this problem in Latin America on a country by country basis see: Valdecir F. Lopes, Problemas que Afectan la Producción de Datos Demográficos en América Latina (CELADE: 1969, Serie A, N° 98), and CEPAL, Guía Bibliográfica de Estadísticas Demográficas y Sociales, August, 1971 (ST/ECLA/Conf.41/L.8).

/component data

component data necessary for such an analysis. For example, adequate information from recent data on income and consumption patterns is not available for most countries in the region.

In summary, data are either lacking, outdated or presented in accord with aggregate definitions which do not substantially contribute to regional planning or to a periodic evaluation of a nation's total development process. Within the time-frame of the Second Development Decade, however, the use of sample survey techniques and more extensive culling of CELADE's Data Bank material merit serious consideration as essential instruments with which to satisfy data requirements and as a base from which to develop fresh concepts from which future research may fruitfully stem.

Sample surveys offer promising results since by their very nature they provide recent information and are quite flexible in scope both in thematic as well as geographical terms. Some such as CELADE's Urban Fertility Surveys or the more recent Rural Fertility Surveys, are executed during one point in time; others are of a periodic or even continuous nature, e.g., the Chilean employment surveys - Ocupación y Desocupación, Encuesta Continua de Mano de Obra; the Venezuelan Encuesta de Hogares por Muestreo. Survey techniques of relatively low cost may be used to introduce new levels of analysis into research on the labour force, e.g. the socio-economic circumstances of underutilized human resources. The sample survey is also ideal for in-depth research of areas selected for their strategic importance in regional planning.

CELADE's Data Bank merits additional comment. Given sufficient funds it is now possible to construct entirely new tabulations from the comparative fertility surveys. The absence of adequate tabulations referred to earlier, has impeded a thorough testing of many hypotheses. The richness of this data may be revitalized by the application of new computor programmes. The same, to a much greater extent, is also true for CELADE's "Operación Muestras de Censos" (OMUECE) material. Complete information for a representative sample drawn from each country's census exists on tape for the 1960 census round. Not only are data to be found which are not ordinarily published; but as the sample returns of the 1970 censuses are made available to CELADE, fresh material will be at the disposal of the researcher long before it is published by the countries themselves. Furthermore, if proper funding is forthcoming, virtually any question might be studied on a comparative basis i.e. utilizing both 1960 and 1970 data for individual countries and across the entire region.

/APPENDIX

APPENDIX

Table 1

LATIN AMERICA: INVESTMENT COEFFICIENTS CALCULATED IN NATIONAL CURRENCIES, 1960-1969

(Gross fixed investment as a percentage of Gross Domestic Product)

Country	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	Average 1960-1970
Argentina	21.70	23.86	22.05	18.52	18.18	17.49	17.85	18.51	20.12	21.68	22.35	20.21
Bolivia	14.22	11.64	17.48	17.10	16.68	16.85	14.03	15.03	20.82	16.77	17.45	15.28
Brazil	16.93	16.06	15.73	15.05	14.98	14.21	14.24	15.80	17.72	17.51	18.07	16.03
Chile	15.40	17.24	16.94	17.46	16.17	16.10	15.25	15.12	15.86	16.59	16.31	14.74
Colombia	18.11	18.70	17.80	15.46	16.81	15.32	15.71	16.08	17.42	17.63	...	16.90a/
Costa Rica	18.96	17.90	21.05	20.79	17.95	21.86	19.17	18.73	18.59	19.24	20.01	19.50
Dominican Republic	13.15	10.04	13.09	17.07	20.47	12.39	17.32	18.20	18.89	18.59	21.77	16.45
Ecuador	13.41	13.57	12.16	12.31	12.04	11.57	11.01	11.80	12.13	13.01	10.60	12.15
El Salvador	14.39	11.10	11.04	11.40	13.30	14.97	15.69	14.72	11.48	11.28	11.27	12.79
Guatemala	9.78	9.87	9.13	9.88	11.56	11.06	11.01	11.79	12.65	12.81	13.47	11.18
Haiti	5.30	5.28	6.33	6.81	6.78	6.10	5.75	5.31	4.99	5.83	...	5.85a/
Honduras	12.66	11.00	13.45	14.86	14.33	14.82	16.12	17.74	18.45	19.74	20.89	15.82
Mexico	16.94	16.02	15.49	16.29	17.44	16.78	17.10	18.35	18.66	18.61	18.37	17.28
Nicaragua	12.50	16.02	14.81	15.35	17.98	18.51	20.63	19.00	17.07	17.81	18.13	16.81
Panama	14.76	16.94	16.73	17.69	15.03	15.72	20.34	19.79	20.88	21.71	...	17.96a/
Paraguay	12.03	10.97	10.87	9.62	10.50	13.80	14.72	15.22	13.71	14.63	12.53	12.60
Peru	16.76	19.60	20.81	19.36	17.60	20.06	21.38	19.43	16.43	16.38	...	18.78a/
Uruguay	15.05	16.25	16.98	14.10	11.83	11.04	10.34	12.46	12.17	15.29	15.21	13.70
Venezuela	17.94	14.41	13.80	13.25	14.63	14.86	14.84	14.75	16.08	15.42	15.96	15.09
Total Latin America	17.54	17.55	16.95	16.05	16.28	15.82	16.54	16.84	17.79	18.19	19.42b/	17.18

Source: Calculated from data provided by ECLA, Statistical Division, on the basis of official statistics.

a/ Average 1960-1969.
b/ Total gross investment as a percentage of Gross Domestic Product.

Table 2

SELECTED COUNTRIES: INVESTMENT COEFFICIENTS
CALCULATED IN NATIONAL CURRENCIES, 1968

(Gross fixed investment as a percentage of Gross Domestic Product)

Country	Investment coefficient
Canada	22.87
France	24.90
Germany, Federal Republic of	22.85
Italy	19.90
Japan	33.66
Netherlands	26.67
Sweden	23.67
United States of America	16.68
Ceylon	15.75
Ghana	11.28
Malaysia (1966)	16.34
Rodesia	16.45

Source: United Nations, Yearbook of National Accounts Statistics, 1969, (E.71.XVII.2).

Table 3

DISTRIBUTION OF NATIONAL INCOME IN LATIN AMERICA AND SELECTED COUNTRIES CIRCA, 1960-1965

(Percentages)

Country	Income from wages and salaries	Income of un-incorporated enterprises	Income from property	Corporate saving and direct corporate taxes	Other	Total
Argentina	43.7	44.1	7.7	4.6	(-)0.1	100.0
Brazil	47.5	38.8	7.7	7.0	(-)1.0	100.0
Colombia	44.7	49.3		5.7	0.3	100.0
Costa Rica	63.5	26.4	5.9	3.0	1.2	100.0
Ecuador	51.1	39.3a/		3.9b/	5.7	100.0
Guatemala	33.1	66.1a/		0.4b/	0.4	100.0
Honduras	50.5	37.2	8.8	3.6	(-)0.1	100.0
Mexico	32.7	65.7a/		1.5b/	0.1	100.0
Panama	69.4	7.1	7.5	13.4	2.6	100.0
Peru	43.6	31.1	13.2	11.5	0.6	100.0
Uruguay	60.3	38.2		1.8	(-)0.3	100.0
Venezuela	57.0	22.1		12.9	8.0	100.0
France	59.7	28.3	6.1	6.9	(-)1.0	100.0
Netherlands	59.0	31.2		10.3	(-)0.5	100.0
United Kingdom	74.6	8.3	10.6	9.4	(-)2.9	100.0
United States	71.9	11.2	13.5	6.9	(-)3.5	100.0

Source: Adapted from ECLA, La Distribución del Ingreso en América Latina, (S.71.II.G.2), Table 4.

Note: The figures shown are three-year averages. There is some variation in the years covered, depending on the availability of data, but in general the period is the early part of the 1960-1970 decade. The only exception is the data for Mexico, which relate to 1950 only.

a/ Also includes saving of corporate enterprises.
b/ Direct corporate taxes only.

Table 4

MEXICO: FEMALE AGE SPECIFIC ACTIVITY RATES, 1950-1960

Age	State of Mexico and Federal District		Country	
	1950	1960	1950	1960
10-14	5.0	3.1	5.9	4.7
15-19	27.4	36.0	15.2	20.8
20-24	26.2	39.2	11.2	23.0
25-29	24.5	29.3	13.2	16.9
30-34	22.3	26.7	13.4	16.1
35-39	22.6	28.6	13.6	17.1
40-44	22.8	30.3	13.7	18.3
45-49	23.0	28.8	13.8	18.3
50-54	22.9	27.1	13.7	18.2
55-59	22.9	24.5	13.9	17.7
60-64	22.8	22.2	13.5	17.0
65-69	22.7	19.1	13.8	15.9
70-74	22.6	15.9	13.3	14.4
75 +	22.1	9.6	12.5	10.1

Source: El Colegio de México, Dinámica de la Población de México, Tables VI-6 and VI-7.