SOME INTERACTIONS BETWEEN ECONOMIC GROWTH
AND POPULATION CHANGE IN THE PHILIPPINES

by

Robert J. Lampman*

This paper is devoted to a discussion of two questions
as they apply to the Philippine economy. The first question is
in two parts: What is the economic price or cost associated
with the post-war acceleration of population growth? And what
economic benefit would flow from a gradual return to a lower
rate of population growth? The second question is: given the
present rate of population growth, what costs must be paid to
accelerate the rate of economic growth? In particular, we are
interested in what changes in the character and distribution of
the population may be required to achieve faster economic growth.

It may be in order to recite some information about
the population and economy of the Philippines as general
background to the discussion. The Philippines has about 1 per

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cent of the world's population and produces about ¼ of 1 per cent of the world's income. Its population, which has long grown faster than that of the world, has grown at an accelerated pace since the end of World War II. In this shift, the Philippines has paralleled the world's experience but at a higher level. When the world's rate of increase moved from 1 to 2 per cent per year, the Philippines' rate shifted from 2 to 3 per cent. Starting with an unusually high and stable fertility rate (how high is reflected by the fact that 7.22 is the average number of births per ever-married woman aged 45-54), the rate of population growth increased because of a sharp reduction of mortality. This reduction has been comparable in scope and timing to that experienced in recent years by many low-income nations.

The explosive increase of the rate of population growth has resulted in an extraordinarily young population, namely, one with a median age of 17 years. The percentage of the population in the central or working ages of 15-64 years is low, by comparison with the past and with other nations, at 51.2. Unlike Indonesia, the Philippines does not have a "hollow generation" caused by a previous period of low
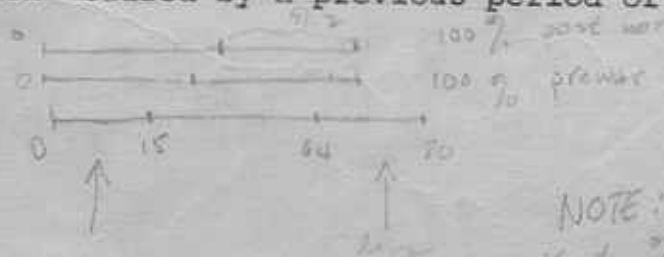
fertility.[1] Hence there is no startling improvement ahead in
the percentage in working ages. However, this percentage will
stop declining for a few years now. Out of a population of
33 million, 11 million are in the labor force, of whom 57 per
cent are engaged in agriculture and 12 per cent are in manufac-
turing. The median educational attainment of the labor force is
4.8 years of schooling.

The gross national product (GNP) in 1966 is expected
to be about 20 billion pesos. On a per capita basis this is
620 pesos, which is probably about midway in the range of per
capita products among Asian nations. The income is more
unequally distributed than in most nations and the trend in
1956-1961 was toward greater inequality.

The Philippines would appear to have considerably
less than its per capita share of the world's agricultural land,
but not far below its share of all natural resources. Its
stock of reproducible capital goods, which is provisionally
estimated at twice the GNP, or 40 billion pesos in value, is

[1] For an interesting discussion of the Indonesian case see
Everett D. Hawkins, "Indonesian Population Booms," forthcoming
in Asian Population Problems, S. Chandrasekhar (ed.), London,
George Allen and Unwin.

Also relevant is Nathan Keyfitz, "Age Distribution as a
Challenge to Development," American Journal of Sociology,
(May, 1965), pp. 659-668.

markedly lower than ¼ of 1 per cent of the world's capital
stock.   In 1966, gross domestic investment, public and private,
is 16 per cent of GNP, or 3.2 billion pesos.   Net of deprecia-
tion, assuming that to be 5 per cent, or 2 billion pesos, this
represents an addition to the capital stock of about 3 per
cent, a rate below that of population increase.   In spite of
the foregoing relationship, GNP has been increasing at 4 to
5.5 per cent per year in the post-war period, and per capita
income has been improving at rates of 1 to 2 per cent per year.

I

With that over-simplified characterization of the
nation in mind, let us now turn to the question of what the
cost of the above-average population growth has been.   Let us
suppose that the Philippine people had managed to reduce their
birth rate concurrently with the death rate and had sustained
the pre-war rate of increase of 2 per cent from 1948 to 1966.
Further, let us assume that the 1966 GNP would have been the
same, which is not too wild an assumption since the 1966
labor force would have been about the same.   However, the 20
billion pesos worth of output would have been shared, not by
33 million, but by 27½ million persons.   Hence, the per
capita GNP would have been 740 rather than 620 pesos, or 19
per cent higher.   The cost of the decisions by the post-war

generation of parents to have the same number of children as
their parents did in spite of or without regard to rapidly
improving infant mortality experience, is now being paid for
by parents and children alike in the form of foregone consump-
tion and investment equal to 19 per cent of 1966 GNP. A trade
has been made, so to speak, of potential shoes and fish and
radios and bulldozers for live descendants. The trade cannot,
perhaps, be viewed with the cold indifference with which
economists view most transactions, since it is doubtful that
the trade reflects an enlarged enthusiasm to reproduce so much
as a startled discovery that the historic standard number of
infants now result in a larger number of children grown to
adulthood.

In any event, the trade has been made and the price
is being paid. But what about the future? Presumably, the
current generation of parents-to-be will not be so surprised
by falling mortality rates and will, therefore, be in a better
position to consider the cost of sustaining the national
pattern of high fertility. Or, to turn the statement around,
they should be able to see the economic benefit of gradually
going back to the pre-war rate of population growth.

Let us compare the consequences of two different
rates of population growth between now and 1985. Professor
Frank W. Lorimer projects alternative growth paths which are

useful for this purpose. With constant fertility from 1960 the
rate of population growth will accelerate from 3.2 to a 3.57
rate of increase and the population will total 63.9 million in
1985. On the other hand, with a sharp decline in fertility,
the rate of population growth will decelerate from 3.2 to a
2.32 rate of increase and the population will be only 55
million in 1985.

To calculate the economic benefit which could be
collected in 1985 by opting for the sharp decline in fertility,
let us start by again assuming that the GNP will be the same
with or without the decline in fertility. The labor force
would be only about ½ million smaller in the case of declining
fertility. This pattern produces a population with 57.7 per
cent of the people in the working ages of 15-64 years, whereas
the constant fertility population has only 50.5 per cent in
that age group. If the GNP grows at 5 per cent per year it
will reach 50 billion pesos in 1985. With constant fertility,
the per capita GNP would be 780 pesos; with sharply declining
fertility it would be 900 pesos. The benefit of the latter
would be a 15 per cent higher per capita GNP.

But the benefit would be larger in terms of consump-
tion, since a larger, younger, and more rapidly growing
population has greater investment and social expenditure needs.

Consider first the question of capital stock, which will be,

let us assume, 100 billion pesos in 1985. Clearly, the larger

population with its population and labor force increasing at

3.6 per cent per year ought to add more to the capital stock

than the smaller population which has a rate of increase in

1985 of 2.3. If the larger population wants to increase its

per capita GNP at the same rate it will need to invest 3.6/2.3

or 1.6 times as much.[1]/ Thus, if the smaller population

invests 8 billion pesos, the larger one needs to invest 12.8

billion. Second, consider the matter of current government

expenditure and related private expenditures. Some of these

(for example, education) vary with the size of the dependent

population (in which case the relevant factor is the ratio of

the number of people in dependent ages in the two populations,

or 31.6 million over 23.3 million); but some of them (for

example, police protection) vary with the size of the total

population (in which case the relevant factor is 63.9/55).

A mid-point between the first factor of 1.36 and the second of

1.16 is 1.26, which seems reasonable to use. Now, if the

larger population is to have the same standards of social

services and is to invest the same amount in education per

1/An investment outlay 1.6 times as great would not be
adequate if the composition of investment for the larger popu-
lation yields a higher capital-output ratio or if the land and
natural resource base is so limited that the larger population
requires substitution of capital for land. For this point, I
am indebted to John H. Power.

child it will need to spend via taxes and voluntary contribu-
tions 1.26 times as much as the smaller population.[1] Thus,
if the smaller population spends 5 billion pesos, the larger
one will need to spend 6.3 billion.

We can then sum the extra 4.8 billion of investment
and the extra 1.3 billion of social expenditure to get a total
of 6.1 billion pesos of extra non-consumption expenditures
which the larger population would need to make. Hence, the
larger population would have 50 - (12.8 + 6.3) = 30.9 billion
available for consumption. This, divided by the population of
63.9 million yields a per capita consumption amount of 483
pesos. The smaller population of 55 million would have 50 -
(8 + 5) = 37 billion pesos. This means per capita consumption,
after provision is made for capital and social expenditure
needs, could be 672 pesos, which is 38 per cent higher than in
the case of the larger population.

Data which will be useful in reviewing the calcula-
tions which led to this estimate of the 1985 consumption
benefit of sharply reduced fertility are presented in Table 1.

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[1] This factor could be larger or smaller than 1.26 if
there are economies or diseconomies of scale in the provision
of public services.

TABLE 1

Population and Income Characteristics for 1985, Assuming Two Patterns of Fertility

	Sharp Decline in Fertility	Constant Fertility
Total Population 1985 (millions)	55.0	63.9
GNP assumed for 1985 (billions of pesos)	50.0	50.0
GNP per capita (pesos)	900.0	781.0
Per cent in working ages	57.7	50.5
Number in labor force (millions)	18.8	19.4
Number in dependent ages (millions)	23.3	31.6
Stock of capital assumed (billions of pesos)	100.0	100.0
Allocation to investment (billions of pesos)	8.0	12.8
Allocation to social expenditures (billions of pesos)	5.0	6.3
Available for consumption (billions of pesos)	37.0	30.9
Consumption per capita	672.0	483.0

Sources: Population estimates from Frank W. Lorimer, "Analysis and Projections of the Population of the Philippines," _First Conference on Population, 1965_, published for the Population Institute by the University of the Philippines Press, (Quezon City, 1966) Tables 18 and 19, pp. 301-303. For income and expenditure assumptions and estimates, see text.

Another way to think of the premium or benefit from a slower rate of population growth is in terms of the difference such a rate makes to the ease of attaining a given rate of increase of per capita consumption. To achieve a _per capita_ increase in GNP of 2 per cent with a 2.5 per cent population increase requires a 4.5 per cent increase in total GNP; a 3.5 per cent population increase requires a 5.5 per cent increase

in GNP. But the latter increase will occur only if some extra allocation is made to increase the capital stock and extra outlays are made for social purposes in order to keep up with the more rapidly rising population. (The reasoning here is parallel to that in the 1985 example above.) So one can say that to achieve a 2 per cent per capita increase in consumption with reduced fertility is less than $\frac{4.5}{5.5}$ or about 80 per cent as difficult. About 80 per cent of the increase in economic inputs (land, labor, capital, technique) will be required to improve living standards with the slower rate of population growth.[1]/

Up to this point in the paper we have offered the following estimates concerning the cost of higher (or the benefits of lower) population growth. (1) To date, the post-war

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[1]/ In the 1985 example we asked: what consumption level would be warranted if people made appropriate sacrifice for capital and social needs? In the second case we asked: how much extra sacrifice is required to meet a given consumption target with a faster population growth? A still different question is: what consumption level will follow from equal sacrifice given two different rates of population increase? This is the question asked by Ansley J. Coale and Edgar M. Hoover in their book on Population Growth and Economic Development in Low Income Countries, Princeton, 1958. They argue that capital formation will, in fact, be less in the case of more rapid population growth, and that because of that both total and per capita consumption would be substantially lower. An approach similar to this is followed by Theodore K. Ruprecht in his paper prepared for this conference.

acceleration of population growth is costing the Philippine
people about a 19 per cent reduction in annual per capita GNP.
(2) Looking ahead to 1985, a pattern of sharply reduced ferti-
lity would yield an increase of as much as 38 per cent in
annual per capita consumption over what it would be if constant
fertility prevailed through that year.   (3) The extra effort to
achieve a 2 per cent rate of increase in per capita consumption
could be only 80 per cent as great with reduced fertility.

We may look at extra consumption as something that
can be "bought" by the sacrifice of a number of unborn children.
Perhaps it should be underlined that even the "sharp reduction"
in fertility will not, assuming continued improvements in
mortality, bring the rate of population increase down to its
pre-war level for many years. However, it is important to see
that there are other ways to "buy" increased consumption. This
brings us to the second question to which this paper is
addressed, namely, if the population rate of increase is given,
what is the cost of attaining a higher rate of economic growth?

II

The broad question we have dealt with is: given a
rate of economic growth, what difference in the allocation of
the GNP is associated with higher or lower fertility? Now we
turn to the question: given a rate of population increase,

how can the Philippines induce and allocate added inputs to achieve higher levels of economic well-being?

We will deal with this question first at the aggregative and secondly at a sectoral level. Thinking in aggregative terms, the nation's current potential to produce is a function of its present stock of developed land, accumulated capital, and available labor. The cheapest way to get additional output may be to bring the actual production more nearly into line with potential production via a "full employment" monetary-fiscal policy. When there is considerable idle labor and under-utilized capital equipment it is possible that an increase of 1 per cent in employment levels may result in a one-shot increase in production of as much as or more than 1 per cent. Professor Sicat and Miss Tidalgo speculate that this elasticity of output with respect to labor may be as high as 1.5.[1] Beyond some point, however, monetary and fiscal expansion will not yield additional employment without undue inflation, and further progress in raising actual nearer to potential product will depend upon "structural" reforms or breaking of "bottlenecks" which restrict the fuller use of existing resources.

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[1] Gerardo P. Sicat and Rosa Linda Tidalgo, "Output, Capital, Labor and Population: Projections from the Supply Side," First Conference on Population, 1965, pp. 354-388.

But to achieve an increase in potential to produce, one needs to look to more fundamental matters such as the increase of the capital stock, improvement of the quality of the labor force, discovery and development of new supplies of natural resources, introduction of new techniques, and improved management and organization. It is a reasonable first approximation that increased output will flow from increased inputs and that a one per cent increase in all inputs simultaneously will yield a one per cent increase in output. But it is not clear what increase in output will flow from an increase in one or a few inputs. For example, the extra output associated with a 3.2 per cent increase in the labor force, all other things remaining the same, is hard to determine, but it is surely less than 3.2 per cent.

Assuming that the labor force increases at 3.2 per cent per year and that capital stock is increased 3.9 per cent per year, and that the elasticity of output with respect to capital is low and that technical change is nil, Professor Sicat and Miss Tidalgo estimate that potential product for the Philippines would increase at 3.5 per cent per year. On the other hand, if the labor force increases at 3.2 per cent, the capital stock increases at 5.8 per cent, the elasticity of output with respect to capital and the rate of technical change are high, then potential to produce would increase at a rate

of 6.76 per year. It is pertinent here to note that the causes
of variation in elasticity of output with respect to capital
and the effectiveness of "technical change" are relatively
unknown and unpredictable. But working from experience of
this and other countries, Sicat and Tidalgo come up with a
reasonable range of annual growth rates of 3.5 to 6.76 per
cent for potential GNP.

In the light of the above, it is interesting to
examine the recently formulated Four-Year Economic Program for
the Philippines, Fiscal Years 1967-1970,[1] which sets a target
rate of growth of GNP of 6.2 per cent. A part of the growth
envisioned would be increasing the actual relative to potential
product, i.e., reducing unemployment, but the larger part
would represent increases in potential product. The extra
inputs called for in the plan are a 3.5 per cent per year
increase in employment, a 7 per cent per year increase in the
capital stock, and a 12 per cent per year increase in govern-
mental services. If these extra inputs are accompanied by
technological advance and if there is a favorable responsiveness
of output with respect to capital input, then the aggregative
conditions would suggest that 6.2 is a plausible rate of

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[1] Office of the President of the Philippines, Manila,
September, 1966.

growth for GNP. To achieve the planned increase in output,

investment is to go from 16.1 to 23.5 per cent of GNP, govern-

ment current expenditure is to rise from 8.8 to 10.2 per cent

of GNP, and consumption is to fall as a share of GNP. The

increase in the per capita level of consumption, as planned,

will be almost two per cent per year, which is in contrast to

recent experience of about a one per cent increase. To get

the extra one per cent increase in consumption the nation will

pay the costs as indicated by the extra inputs. These, in

turn, will have to be induced by a set of pushes and pulls and

changes and shifts. For example, investment will rise only if

someone is induced to go into debt. Consumption will be

restrained only if more taxes are collected, and so forth.

We have, of course, greatly over-simplified the

aggregative theory of economic growth, but it should be apparent

that the process of growth is much more complicated than merely

cranking in more capital and more labor. Growth does not

ordinarily involve having people produce more of the same

goods by means of doing more of the same activity with more of

the same equipment in the same location. More typically, it

means producing different goods by different methods in

different locations. Hence, in order to comprehend more

fully how economic growth occurs, one needs to look beneath

the aggregative level and into inter-sectoral and inter-group

changes. Some economic theorists believe that policy must be
brought to bear on relationships among regions and industries
if growth is to be accelerated. We can distinguish two strains
of thought. One strain, which is concerned with "efficiency,"
sees the problem as how to allocate extra packages of inputs
(e.g., 1000 extra laborers and 10 extra units of capital) to
the industry where they will yield the greatest immediate
addition to total product. Within this strain there is
controversy about the degree to which "the market" will accom-
plish this allocation and the degree to which government ought
to intervene. The other strain of thought emphasizes the
necessity of hastening a process of shift of resources from
traditional to modern sectors and is willing, if necessary, to
make some sacrifice of contemporary efficiency. Some writers
identify a "leading sector" which, it is hoped, will not only
innovate with new products and methods, but also accomplish
the saving identified as critical at the aggregative level of
analysis.

It is not our purpose here to review all the exciting
controversies concerning economic development, but rather to
set forth some interesting inter-group changes which are taking
place in the Philippines. The foregoing is merely to indicate
why economists are apt to be interested in the statistics
which some of you at this conference have had a hand in
collecting.

One such set of data is that concerning the urban-rural division. See Table 2, which shows that people and income are both shifting from rural to urban settings. It also suggests that this shift, along with an increase in inequality within the urban sector, facilitates an increase in inequality in the overall distribution of income, with the top tenth of families increasing their share from 39 to 41 per cent. It will be interesting to see what the 1965 survey, now being tabulated, will show about the trends in these relationships after 1961.

TABLE 2

Percentage Distribution of Families and Family Money Income, by Urban and Rural Residence, 1956 and 1961

	Urban	Rural	Total
	Per Cent		
Families			
1956	33	67	100
1961	34	66	100
Family Income			
1956	55	45	100
1961	56	44	100
Ratio of urban to rural average family income			
1956			2.45
1961			2.48
Top Tenth of Families' share of total income			
1956	34	30	39
1961	40	31	41

Source: Philippine Sample Survey of Households, Series No. 4 and 14.

Related to the matter of inequality is the question
of how the relatively low-income population is faring during a
period of economic growth. Some insight into this is offered
by Table 3, which classifies families (including one-person
units) as "low-income" if their income is less than equivalent
to 1000 pesos of 1961 purchasing power for a family of 5 persons.
The equivalent income cut-offs are shown in row 3. The 1956
cut-offs are lower than the 1961 cut-offs by 14 per cent, which
was the increase in the consumer price level over the five-year
period. 51.7 per cent of all persons fell below the "low-
income" mark in 1956. Almost the same percentage, 52.3, fell
below the mark in 1961. (See the second row from the bottom.)
However, absolute number of "low-income" persons increased from
11,438,000 to 13,236,000 in the 1956-1961 period. (See the
third row from the bottom in lower right hand corner of the
table.) Thus, while the share of the larger population which
was in "low-income" status, as defined, rose slightly the
number rose substantially. In other words, the population
increase was too great when coupled with a rise in income
inequality to allow a one per cent per year rise in median
family income to prevent a rise in the numbers of persons
below the selected income mark. Again, it will be interesting
to see what the 1965 survey shows.

TABLE 3

Number (in thousands) and Per Cent of Families and Persons in "Low-Income Status," 1956 and 1

	FAMILY SIZE									
1 9 5 6	1	2	3	4	5	6	7	8	9	10 or More
No. of Families in all Income Groups	64	265	474	578	644	555	460	390	240	286
Percentage Distribution	1.6	6.7	12.0	14.6	16.3	14.0	11.6	9.9	6.1	7.2
No. of Persons in all Income Groups	64	530	1422	2312	3220	3330	3220	3120	2160	2860
Income Cut-Off (current pesos)	351	482	614	746	877	1009	1114	1272	1403	1578
Percentage of Families in Low-Income Group	56.6	46.4	45.3	48.1	50.9	55.4	52.5	56.4	52.8	46.2
No. of Families in Low-Income Group	36	123	215	278	328	307	242	220	127	132
No. of Persons in Low-Income Group	36	246	645	1112	1640	1842	1694	1760	1143	1320
Low-Income Persons as Percentage of Total in Family Size Group	56.6	46.4	45.3	48.1	50.9	55.4	52.5	56.4	52.8	46.2
Percentage of Low-Income Persons by Family Size	.3	2.2	5.6	9.7	14.3	16.1	14.8	15.4	9.9	7.7

1 9 6 1	FAMILY SIZE									
	1	2	3	4	5	6	7	8	9	10 or More
No. of Families in all Income Groups	87	308	475	645	654	625	539	416	292	382
Percentage Distribution	2.0	7.0	10.7	14.6	14.8	14.1	12.2	9.4	6.6	8.6
No. of Persons in all Income Groups	87	616	1425	2580	3270	3756	3773	3328	2628	3820
Income Cut-Off (current pesos)	400	550	700	850	1000	1150	1300	1450	1600	1800
Percentage of Families in Low-Income Group	48	41.8	39.2	47.6	57.6	56.3	49.0	53.8	53.7	54.9
No. of Families in Low-Income Group	42	129	186	307	377	352	264	224	157	210
No. of Persons in Low-Income Group	42	258	558	1228	1885	2112	1848	1792	1413	2100
Low-Income Persons as Percentage of Total in Family Size Group	48.0	41.8	39.2	47.6	57.6	56.3	49.0	53.8	53.7	54.9
Percentage of Low-Income Persons by Family Size	.3	2.0	4.2	9.3	14.3	15.9	14.0	13.5	10.7	15.8

Source of Basic Data: PSSH Series No. 4 and 14. Table 6.

It is doubtless true that in any developing economy
some incomes rise more than others. But it is striking that
in the Philippines in recent years the real incomes of certain
key groups of urban workers are falling. Between 1955 and
1965 national income per capita (at constant prices) rose by
15 per cent. However, during the same period the real wage
rates of skilled and unskilled workers in industrial establish-
ments in Manila declined from an index number of 100 to 81 and
87 respectively. It is intriguing to try to puzzle out how
per capita real incomes could rise at the same time that urban
real wage rates are falling. National income data on factor
incomes are inadequate to support a detailed inquiry on this
matter, but it would appear that what is happening is that the
shift from low income regions and occupations is raising
average incomes even though industrial workers' incomes are
falling. At the same time, urban non-wage incomes are not
falling and this compounds the urban income inequality referred
to earlier.

It is also helpful in appraising the development
process to survey changes in the industrial distribution of
employment. See Table 4, which shows that between 1958 and
1965 agriculture's share of employment fell by six points,
that of manufacturing stayed the same and that of all other
industry groups increased. Those who thought or hoped that

manufacturing would rapidly increase its share of employment

have been disappointed, not only with regard to this nation

but with regard to many other developing nations as well.[1]/

It should be emphasized at this point that there are numerous

difficulties with the data on both employment and output by

industry, which make analysis a trying experience.[2]/ For

example, how is one to evaluate the fact that only one-third

of manufacturing employees work in "organized" establishments

of five or more workers?[3]/ And how does one respond to the fact

that income originating in manufacturing (see columns 3, 4, 5,

and 6) does not include any income attributable to manufac-

turing workers in "unorganized" manufacturing? This combination

of facts leads to the implausible finding that one-third of the

persons employed in manufacturing, or about 4 per cent of all

workers, produce 17 per cent of the national income. That

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[1]/cf. Lloyd G. Reynolds, "Wages and Employment in a Labor-
Surplus Economy," American Economic Review (May, 1965), pp. 19-39.

[2]/See Staff Notes on "The Trend of the Labor Force," First
Conference on Population, 1965, pp. 497-502, wherein it is
argued that there had been no real inter-industry shift of
employment by 1961.

[3]/In other words, two-thirds work in "unorganized establish-
ments." This type of activity is apparently of widely varying
significance in developing countries. In Japan in 1939, one-
fourth of manufacturing employees worked in establishments with
under five employees. (G. C. Allen, Japan's Economic Expansion,
London, Oxford University Press, 1965, Table II, p. 271.)

amounts to over 10,000 pesos per employed person in 1965.[1]

According to Table 4, the industrial origins of the national income have shifted similarly to employment. Agriculture's share has fallen and that of each other industry has either risen or remained the same. (columns 3 and 4). National

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[1] How does the product of workers in unorganized manufacturing compare with that in the organized sector? Over half the unorganized workers are "own account" workers and one-eighth are "unpaid family workers" and the remainder are "wage and salary workers" in both urban and rural locations. In the survey week in May, 1965, it would appear that average hours worked by such employees was between 30 and 35. If we assume value added is equal only to wages and, if we further assume that the annual wage equals 3 pesos per day times 100 days, then the total product for unorganized manufacturing is 240 million pesos. This means we are assuming that the product per worker in organized manufacturing is 33 times as great as in unorganized manufacturing. The total product of unorganized manufacturing, if our assumptions are correct, is 1.4 per cent of national income and 7.7 per cent as much as the national income originating in organized manufacturing in 1965. Richard W. Hooley estimates that the product of unorganized manufacturing is only 5 per cent that of organized manufacturing. (Reported to the author in conversation.) However, the Program Implementation Agency in an undated mimeo paper entitled "Trend and Structure of Philippine Manufacturing, 1953-1963," estimated it was 50 per cent. Adam Kaufman, in his book on Small Scale Industry in the Soviet Union (New York, National Bureau of Economic Research, 1962) found that small scale industry produced 40 per cent of Russian manufacturing output in 1913 and 10 per cent in 1933. Hilarion A. Pilapil reports that cottage and small-scale industry (variously defined) accounted for the following shares of manufacturing output in the 1950's: Mainland China, one-third; India, one-half; Pakistan, three-fourths. ("Progress and Problems of Cottage and Small-Scale Industries in the ECAFE Region," Industrial Philippines, May, 1960, pp. 5 ff, at 7.

TABLE 4

Percentage Distribution of Employment, National Income Valued at
1955 Prices, and National Income per Employed Person, by Major
Industry Group, 1958 and 1965.

	Employment (October) Per Cent		National Income Per Cent		National Income per Empl. Person ₱(1955 Prices)		Per Cent Change
	1958	1965	1958	1965	1958	1965	1958-65
Total	100	100	100	100	1052	1175	12
Agriculture	63	57	34	30	556	632	14
Manufacturing	11	11	15	17	1456	1817	25
Commerce	9	11	11	12	1351	1286	(5)
Construction	2	3	3	4	1741	1467	(16)
Other	15	18	37	37	2620	2350	(10)
All non-agriculture	37	43	66	70	1912	1886	(1)

Source: For 1958 data, Isagani C. Belarmino, "Employment and
GNP of the Philippines," The Statistical Reporter, July-
September, 1965, tables 2, 4, 5. For 1965 data, The
Statistical Reporter, April-June, 1966; and Philippines
Sample Survey of Households, Series forthcoming for
October, 1966.

income per employed person increased by 12 per cent between

1958 and 1965. However, this increase took place in spite of

a fall in the national income per employed person in all non-

agricultural industries combined and in each such industry

except manufacturing. The latter point sheds some light on the

puzzle of falling real wages and rising average income discussed

above. Here we see how total output can rise even though the

per worker contribution in some sectors is falling.

Perhaps these scattered examples of change that is occurring in the distribution of population and income will serve to indicate the complexity of the economic development process. It is difficult to comprehend what is going on and to evaluate the contribution of observed changes to economic growth; and it is certainly still more difficult to prescribe a change that will surely make a net contribution to economic growth.

We started out this section of the paper with the query: given a rate of population growth, what is the cost of accelerating economic growth? We have answered, not too confidently, that such growth can be "bought" on a rather unpredictable schedule of more inputs, more growth. But economic growth is not so mechanical as it may sound because it is synonymous with change -- change of inputs, methods of their use, and nature of output. New opportunities, which will be eagerly seized by some people, are being opened up. But it also means that human beings are being pushed and pulled about and drawn into new situations. Some incomes are going up and others are going down. Hence, for some groups of people, the "costs of economic growth" are negative; for others, they are positive and large. Whether the benefits of growth will exceed the costs for the majority of people is not something one can answer affirmatively and for all countries in an off-hand

manner. We can only take the question for the Philippines to
the point of saying that accelerated growth of economic output
can probably be achieved only at a cost of sacrificed current
consumption, added risk, loss of preferred and secure status for
some, and considerable change in way of life for all. This
declaration would hold to a large degree whether the rate of
population growth were slightly higher or lower than 3.2 per
cent. It is not true, as some enthusiasts for fertility control
sometimes imply, that economic success will automatically flow
from reduced population growth.

III

The propositions we have stated are as follows:

1. The Philippine people are presently paying a price, in the
   form of foregone GNP per capita, for the post-war accelera-
   tion of population growth. That is to say, a significant
   portion of the added economic product has been allocated to
   the price of "unexpected survivorship."

2. Sharply reduced fertility, which would gradually return the
   rate of population growth to its pre-war level, would yield
   a benefit in the form of additional goods for consumption.
   In 1985 this benefit would amount to more than a one-third
   increase in consumption per capita.

3. Alternatively, reduced fertility would lower the degree of sacrifice necessary to reaching a given level of GNP per capita.

4. However, even though the population grows at its present high rate, the experience of some other countries leads us to believe that economic growth can be accelerated if the Philippine people are willing to pay the price. This price for growth may be thought of in aggregative terms of more capital, more labor, more technical advance and so forth. But it must also be envisioned in terms of inter-sectoral and inter-group changes. These changes are not always easily arranged nor are they in all cases welcomed. It does not follow that reduced population growth would necessarily make Filipinos more ready to pay the price, although it would then be a somewhat lower price, for a higher rate of economic growth. But it does follow that if Filipinos in this generation are willing to reduce their fertility and to pay the price for accelerated economic growth, then the next generation will claim a double benefit - a larger and more rapidly increasing product to be shared by a smaller and less rapidly increasing number of people. Hopefully, that economic benefit will improve the quality and meaningfulness of life for individual human beings.

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