SOCIAL FOUNDATIONS OF ECONOMIC DEVELOPMENT

Dr. B.J. Heinzen

November 1984

INTRODUCTION

The work in this paper began in order to understand what might be expected from developing countries over the next twenty years. Two questions in particular were posed:

1- What accounts for variations in development and rates of economic growth?

2- How can development and growth rates be predicted?

To answer these questions, we have separated this paper into three parts. In Part I, we consider the developing countries and discuss the relationship between social and economic indicators of development as conceptualized by a Double-S Curve. In Part II, we examine the potential for shifts in the balance of the world economy due to the changing levels of development in Third World countries. In Part III, we imagine a second Double-S Curve facing mature societies and hypothesize some of its characteristics, which will be shaped in part by the change in developing countries.

PART I - THE DOUBLE-S CURVE

However, in order to account for variations in development, we needed first to establish the nature of the development process. What is it? How does it behave?

Obviously, these are questions that have been tackled by many writers and economists and researchers as one of the principal targets of basic research. There is an abundance of theory and mostly economic data that has been assembled to approach the issues. Here, however, we are not interested in the problem as basic research. Instead, we need only develop some understanding of what the development process might entail so that we can a) establish a vision of "expectable" development, b) identify the variations from the expected, and c) create ways of predicting both expectable and variable behavior.

Influencing the Development Process

In moving from an understanding of the nature of development to an ability to predict how it is going to behave in the future, we needed to know what factors are likely to be involved in the development progression. Eventually, we would like to examine some of the cultural and political factors in addition to purely economic considerations. What, for example, will be the effect of various political philosophies, how much might a hierarchial social structure valuing obedience affect economic development based on independent entrepreneurial talent? In short, can we, by understanding the social and cultural elements of development, anticipate the nature and extent of subsequent economic growth?

United Nations Research Institute for Social Development, Geneva

Approaching an understanding of development was made considerably simplier when we acquired the data base and all written research done by the

2

United Nations Research Institute for Social Development (UNRISD). Since the 1960s, UNRISD has supported a Statistical Unit that has been looking for social and economic indicators of development and has identified nineteen core indicators which are highly correlated with development, relatively "clean" data, and have fairly good coverage, i.e., are available for a fairly large number of countries.

This data base, which was developed for 120 countries for 1970 data, has been used in this study to present ideas on what is the expectable progression of development. The data have also been used to identify those countries which vary from the expected. In the course of that work, we have also been able to test several predictors of economic growth.

In the analysis that follows, we have relied heavily on the approaches developed by the UNRISD Statistical Unit. This reliance is justified for several important reasons. First, the UNRISD people have spent the past twenty years doing basic research on the nature of the development process and have acquired considerable expertise. Second, they have assumed that development was both a social and an economic phenomenon and have therefore operated with a more broadly-based perspective than one normally finds. Third, it was reasoned that if we wanted eventually to identify cultural factors in development, it seemed important to know what social indicators were most highly correlated with development and to learn how those social indicators behaved in the process.

Early Findings

In the next few pages we have summarized the early findings drawn from the UNRISD data. The material falls into four sections. In the first we compare the behavior of social indicators to the behavior of economic indicators of development. In the second section we present the "Double-S Curve", a graphic conceptualization of how social and economic development work together. In the third section we look at the effect of various levels of development on the growth rate of the Gross Domestic Product. The fourth and final section examines selected social indicators in order to test the hypothesis that where social advances are greater than economic advances, they will serve to "pull up" economic development.

The findings presented in Part I of this paper are still somewhat speculative. In that sense they are more akin to hypotheses in need of further testing than they are firm and absolute conclusions. Still, the evidence is strong enough and sufficiently replicated from several different angles, to suggest that any understanding of economic progress is incomplete until it includes consideration of the social foundations.
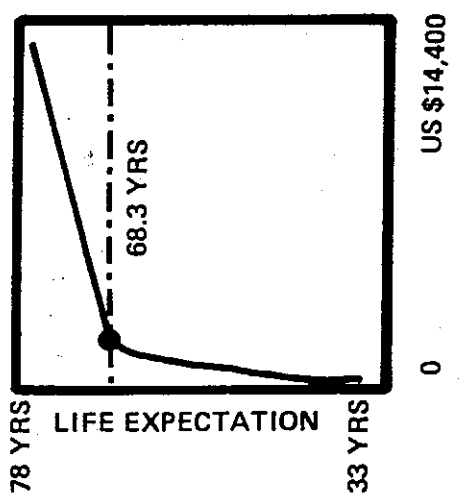
The Turning Point: 68 Years

In Figures 1 and 2, sketches have been drawn of the Best-Fitting Lines that were generated by UNRISD when statistics for Life Expectation were plotted against statistics for six social and six economic indicators. Several interesting observations can be made from these graphs:
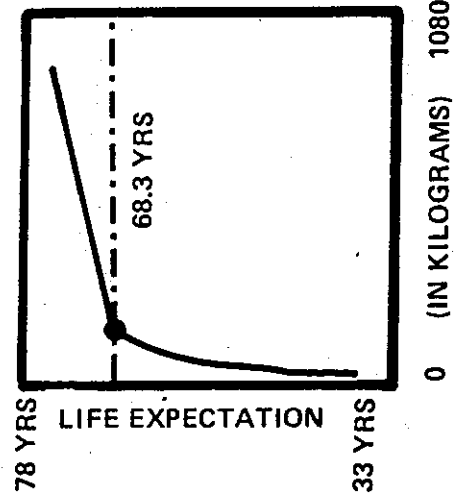
LIFE EXPECTATION AND SIX ECONOMIC INDICATORS
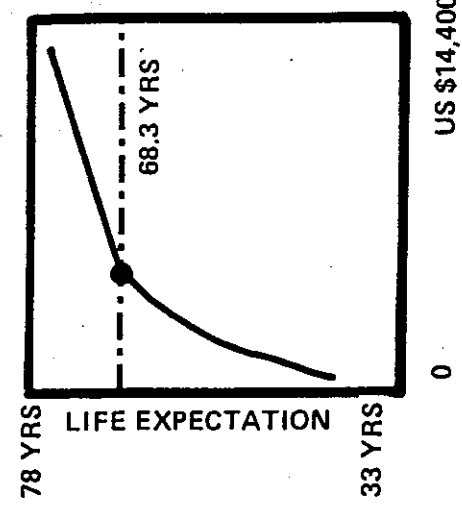## BEST FITTING LINES 1970 DISTRIBUTION DATA
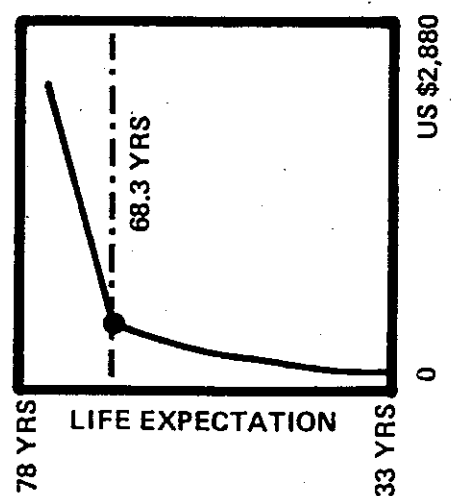

ALL US $ ARE IN 1970 PRICES

68.3 YRS

78 YRS   LIFE EXPECTATION   33 YRS

US $14,400   0

MANUFACTURING PRODUCTION PER PERSON

68.3 YRS

78 YRS   LIFE EXPECTATION   33 YRS

(KILOGRAMS COAL EQUIV.)
18,000   0

PER CAPITA ENERGY CONSUMPTION

68.3 YRS

78 YRS   LIFE EXPECTATION   33 YRS

(IN KILOGRAMS)
1080   0

PER CAPITA STEEL CONSUMPTION

68.3 YRS

78 YRS   LIFE EXPECTATION   33 YRS

US $2,160   0

PER CAPITA INVESTMENT

68.3 YRS

78 YRS   LIFE EXPECTATION   33 YRS

US $14,400   0

AGRICULTURAL PRODUCTION PER MALE WORKER

68.3 YRS

78 YRS   LIFE EXPECTATION   33 YRS

US $2,880   0

PER CAPITA FOREIGN TRADE

BJH — 2/85
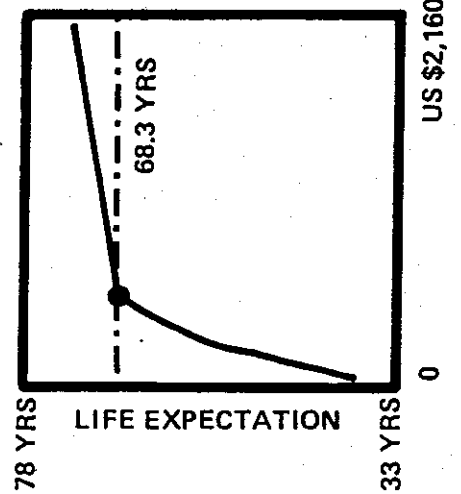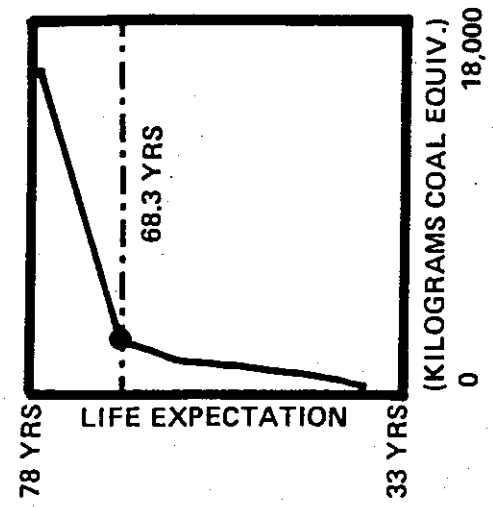
LIFE EXPECTATION AND SIX SOCIAL INDICATORS
BEST FITTING LINES 1970 DISTRIBUTION DATA
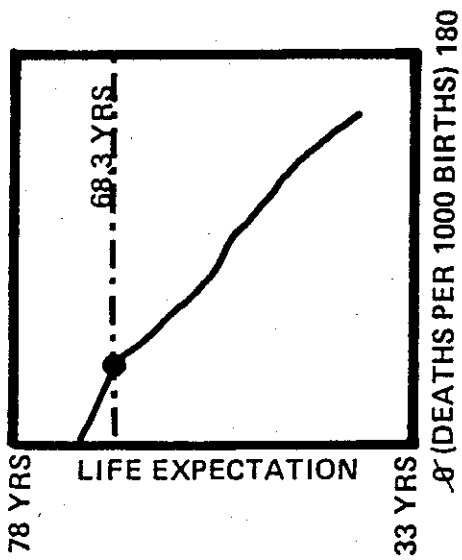
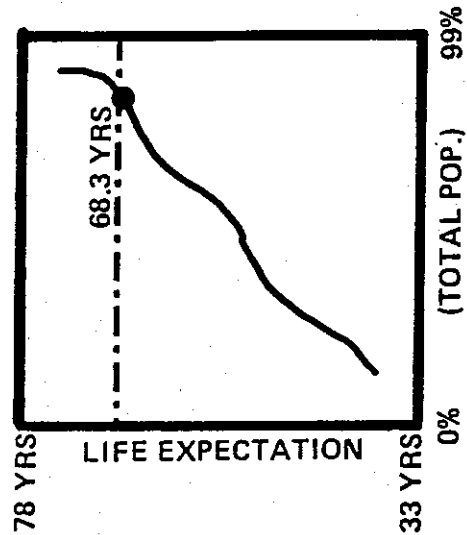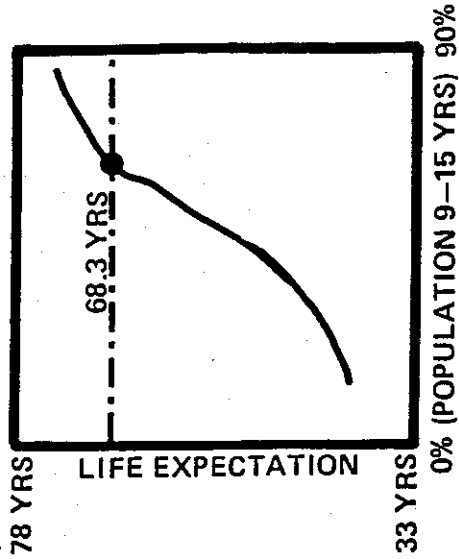INFANT MORTALITY

LITERATE POPULATION

COMBINED SCHOOL ENROLLMENT

MEN IN AGRICULTURE

ACCESS TO A WATER SUPPLY

SALARIED & WAGE EARNERS

BJH — 2/85
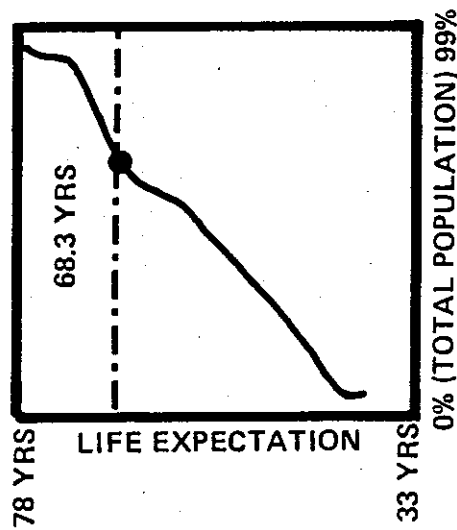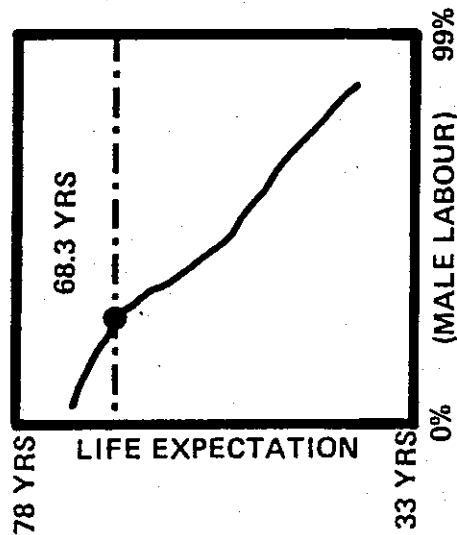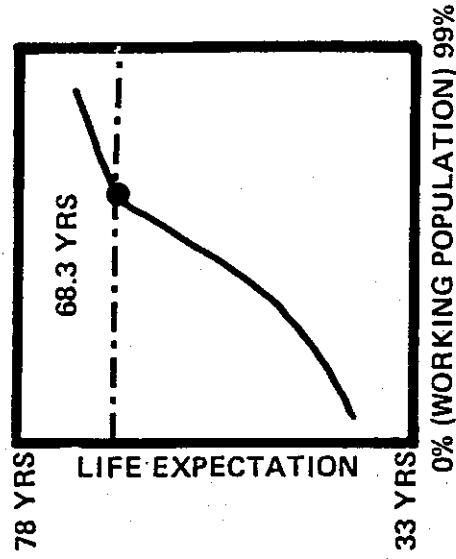
1- for all indicators, a noticeable turning point in the rate of deve-
lopment seems to occur when life expectation in a country reaches
about 68 years;

2- social development proceeds gradually up to that point with at
least two-thirds of all possible progress being made before the
turning point at 68 years; and

3- economic development makes insignificant advances before the
turning point, but grows thereafter at a much faster pace than any
of the social indicators.

These three observations should mean that we can expect the most rapid
increases in economic performance from those countries which have established a
strong foundation of social development.

A Double-S Curve

This relationship between social development and economic development
can be conceptualized with the Double-S Curve illustrated in Figure 3. In this
illustration, the curve for social development is shown to be preceding economic
development and both curves have been marked off into four segments. Each
segment represents a different stage in the overall development process.

1- Stage 1 is for basic foundations. Economic growth is fairly static
and most creative energy goes to achieving minimum standards of
health, education, general welfare and political stability.

DOUBLE — S CURVE

3.
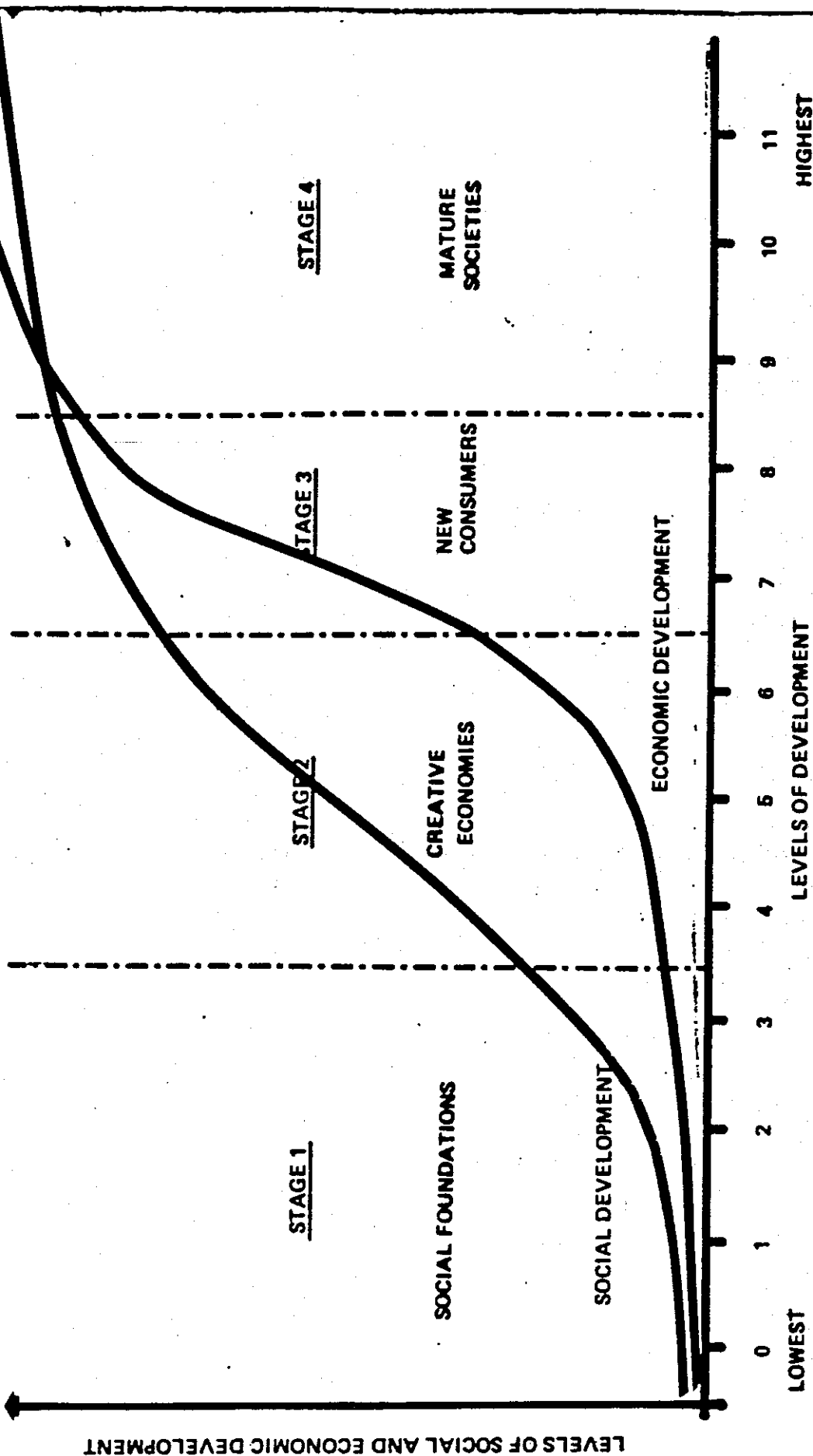
BJH — 11/84

2- <u>Stage 2</u> is a creative society. Social progress is being steadily
made and, as it increases, it pulls behind it key sectors of the
economy, such as export manufacturing. This allows for more
investment in the social base and the overall result is an
increasingly strong, healthy society with a modestly diversified
economy. Here there will be high reinvestment and low consumption.

3- <u>Stage 3</u> is a period of increasing consumption. A solid social base
has been established, but the economy is still not very large. At
this stage, rapid growth is likely to be based on increasing con-
sumption of established technologies.

4- <u>Stage 4</u> is maturity and the technological frontier. In mature
societies, the goods people choose to consume may change, but the
high level of overall consumption will be relatively static.
Theories about New Waves and High Tech Industries are likely to be
most relevant here. Alternatively, "Growth", as usually defined,
may not be the best measure of these societies.

The Double-S Curve is a simple paradigm and obviously many countries
will deviate from this model. It is also important to remember that this model
is based largely on distribution analysis, rather than time series analysis.
However, an interesting confirmation of the Double-S Curve appears in Figure 4,
which we discuss below.

Growth Rates and the Development Index

One of the simpliest tools developed by the UNRISD Statistical Unit is
the Development Index. The Development Index is created by first converting all
the data on the nineteen social and economic indicators to a uniform scale from
0-100. Then, from this data, each country's Development Index is the average of
the transformed values of its indicators. Since the average reflects both
social and economic progress, it is a reasonably strong indicator of a country's
overall level of development on both frontiers.

In Figure 4 we have taken all those countries for which there was
sufficient data to create a Development Index and grouped them according to the
Index. Within each Group, the countries are listed in rank order from the
lowest to the highest Index, and each country is shown with its GDP Growth Rate
for 1970-1980. These GDP Growth Rates were averaged for each grouping, and the
average appears at the bottom of each column.

The Development Index is based on 1970 data, while the growth rates are
for the following decade. We have, therefore, an opportunity to see whether
there is any possible relation between the level of development and subsequent
rates of growth. Here, it is useful to remember that the decade, 1970-1980, is
widely viewed as a world-wide recession.

In spite of the recession, Figure 4 tends to confirm the Double-S Curve.
First, it should be noted that Groups 0-3 show fairly low growth rates, on
average 3.0%. These Groups correspond to Stage 1, "Basic Foundations". In

COUNTRY RANK ORDER BY 1970 DEVELOPMENT INDEX (DI)
SHOWING AVERAGE ANNUAL GROWTH OF GDP PER CAPITA
1970 — 1980

GROUP 0 — DI< 0.00

Country	Value
MALI	4.90
BURUNDI	2.80

A = 3.85%

GROUP 1 — DI< 10.00

Country	Value
YEMEN (A.R.)	9.20
NEPAL	2.50
RWANDA	4.10
ETHIOPIA	2.00
NIGER	2.70
MALAWI	6.30
UPPER VOLTA	3.60
GUINEA	3.30
BENIN	3.30

A = 4.10%

GROUP 2 — DI< 20.00

Country	Value
CENT.AFR.REP.	3.00
TANZANIA	4.90
HAITI	4.00
LAOS	N.D.
PAKISTAN	4.70
MOZAMBIQUE	-2.90
SOMALIA	3.40
TOGO	3.40
INDONESIA	7.80
ZAIRE	0.10
INDIA	3.60
CHAD	-.20
SIERRA LEONE	1.60
SUDAN	4.40
MADAGASCAR	0.30
UGANDA	-1.70
NIGERIA	6.50

A = 2.66% — STAGE 1

GROUP 3 — DI< 30.00

Country	Value
LIBERIA	1.70
CAMEROON	5.60
KENYA	6.50
MAURITANIA	1.70
SENEGAL	2.50
THAILAND	7.20
ANGOLA	-9.20
PAPUA-N.GUINEA	2.30
GHANA	-.10
IVORY COAST	6.70

A = 2.49%

GROUP 4 — DI< 40.00

Country	Value
MOROCCO	5.60
BOLIVIA	4.80
PARAGUAY	8.60
HONDURAS	3.60
EGYPT	7.40
GUATEMALA	5.70
SRI LANKA	4.10
IRAN	2.50
ALGERIA	7.00
TURKEY	5.90
TUNISIA	7.50
JORDAN	N.D.
ZIMBABWE	1.80
ECUADOR	8.80
PHILIPPINES	6.30
EL SALVADOR	4.10
CHINA (EST)	

A = 5.56% — STAGE 2

GROUP 5 — DI< 50.00

Country	Value
ZAMBIA	0.70
DOMINICAN REP.	6.60
IRAQ	12.10
KAMPUCHEA	N.D.
SYRIA	10.00
SAUDI ARABIA	10.60
KOREA (REP.)	9.50
NICARAGUA	0.90
MALAYSIA	7.80
BRAZIL	8.40
ALBANIA	N.D.
PERU	3.00
COLOMBIA	5.90

A = 6.86%

GROUP 6 — DI< 60.00

Country	Value
YEMEN (P.D.R.)	N.D.
MONGOLIA	N.D.
MEXICO	5.20
LIBYA	2.20

A = 3.70%

GROUP 7 — DI< 70.00

Country	Value
PORTUGAL	4.60
YUGOSLAVIA	5.80
PANAMA	4.00
COSTA RICA	5.80
SOUTH AFRICA	3.60
CUBA	N.D.
CHILE	2.40
JAMAICA	-1.10
ROMANIA	8.60
GREECE	4.90
VENEZUELA	5.00
URUGUAY	3.50
LEBANON	N.D.

A = 4.28%

GROUP 8 — DI< 80.00

Country	Value
SINGAPORE	8.50
KOREA (D.P.R.)	N.D.
ARGENTINA	2.20
SPAIN	4.00
BULGARIA	7.10
HONG KONG	9.00
POLAND	8.90
HUNGARY	5.40

A = 6.44% — STAGE 3

GROUP 9 — DI< 90.00

Country	Value
U.S.S.R.	N.D.
ITALY	3.00
IRELAND	3.50
JAPAN	5.00
ISRAEL	4.10
CZECHOSLOVAKIA	5.10
AUSTRIA	3.70

A = 4.06%

GROUP 10 — DI< 100.00

Country	Value
FINLAND	3.10
FRANCE	3.50
GERMANY (D.R.)	4.80
UNITED KINGDOM	1.90
GERMANY (F.R.)	2.60
BELGIUM	3.00
AUSTRALIA	3.00
DENMARK	2.50
NETHERLANDS	2.90
NEW ZEALAND	2.30
SWITZERLAND	0.40
NORWAY	4.80

A = 2.90% — STAGE 4

GROUP 11 — DI> 100.00

Country	Value
CANADA	3.90
U.S.A.	3.00
SWEDEN	1.70

A = 2.86%

A = GDP GROWTH RATE, AVERAGE FOR EACH GROUPING
ND = NO DATA

B.J.H — 2/85

11

Groups 4, 5 and 6, however, one sees an average GDP Growth Rate of 5.9%, which

makes these countries the "Creative Societies" of Stage 2. This higher rate of

growth is repeated in Groups 7 and 8, averaging 5.1%, and identifies this group

as the equivalent of Stage 3, "Increased Consumption". Groups 9, 10 and 11 look

most like the hypothesized "Mature Societies" and again show a lower average
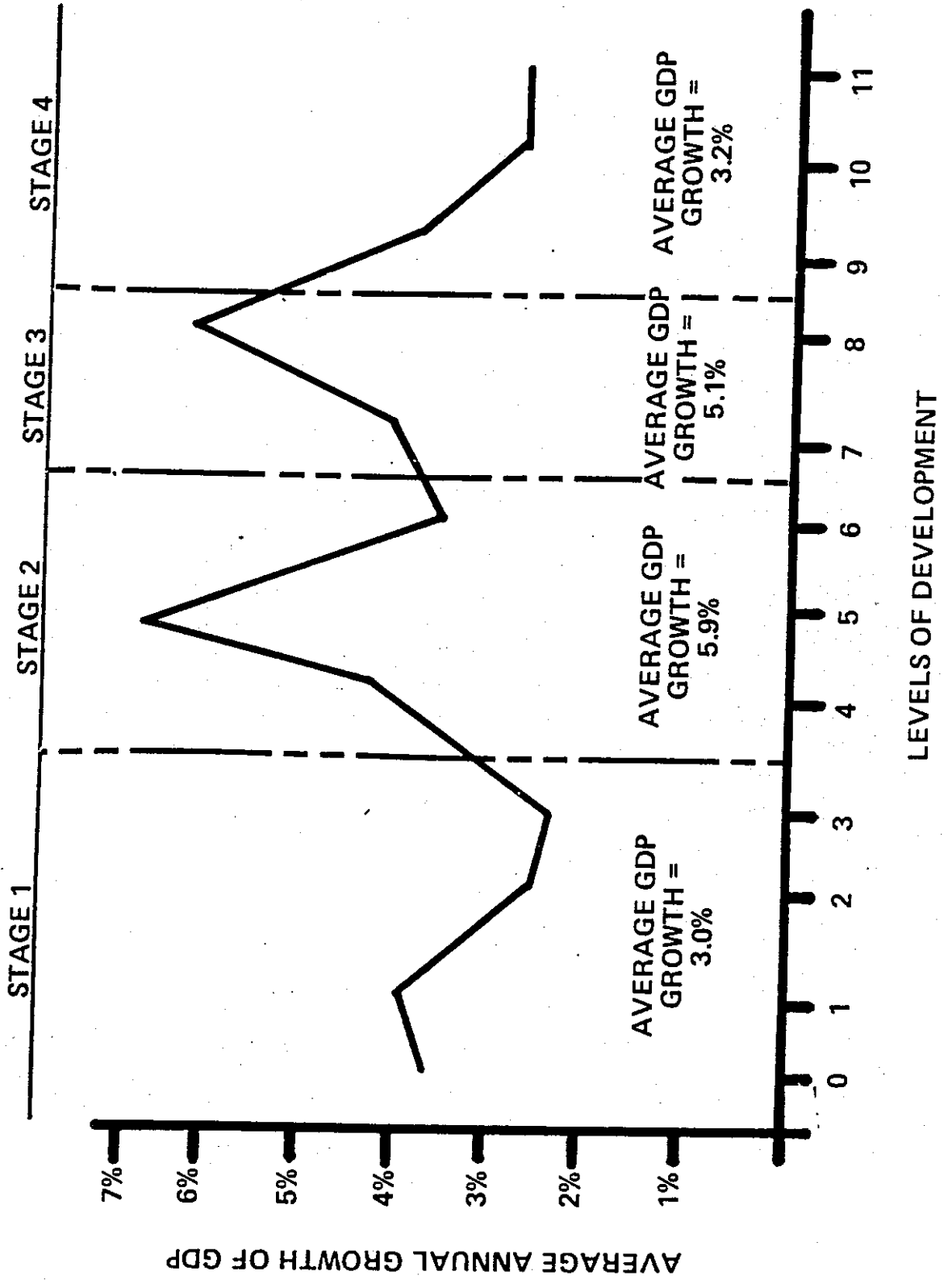
annual growth rate at 3.2%.

Figure 4, therefore, offers a rough confirmation of the Double-S Curve.

Tests of significance still need to be run, and several groups by Development

Index fall outside the paradigm. Still, the data are generally supporting the

Double-S Curve model, as can be seen in Figure 5 which plots the 1970

Development Index against the 1970-1980 GDP Growth Rate.

Pull Factors - Predicting GDP Growth

The general credibility of the Double-S Curve model argues that it

should be possible to predict economic development from the level of social

development in a country. In particular, analysts at UNRISD had speculated that

where social development was considerably more advanced than economic develop-

ment, a high rate of economic growth would follow.

We then looked at those countries whose performance in 1970 on selected

social indicators was higher than their performance on GDP per capita in 1970.

Where, for example, a society in 1970 was stronger in health and education than

in GDP per capita, health and education would act to "pull up" the level of GDP,

as evidenced in the GDP Growth Rate from 1970-1980.

1970 DEVELOPMENT INDEX
VS. 1970—1980 GDP GROWTH RATE

STAGE 1

STAGE 2

STAGE 3

STAGE 4

AVERAGE GDP GROWTH = 3.0%

AVERAGE GDP GROWTH = 5.9%

AVERAGE GDP GROWTH = 5.1%

AVERAGE GDP GROWTH = 3.2%

AVERAGE ANNUAL GROWTH OF GDP

7% 6% 5% 4% 3% 2% 1%

0 1 2 3 4 5 6 7 8 9 10 11

LEVELS OF DEVELOPMENT

BJH — 2/85

12
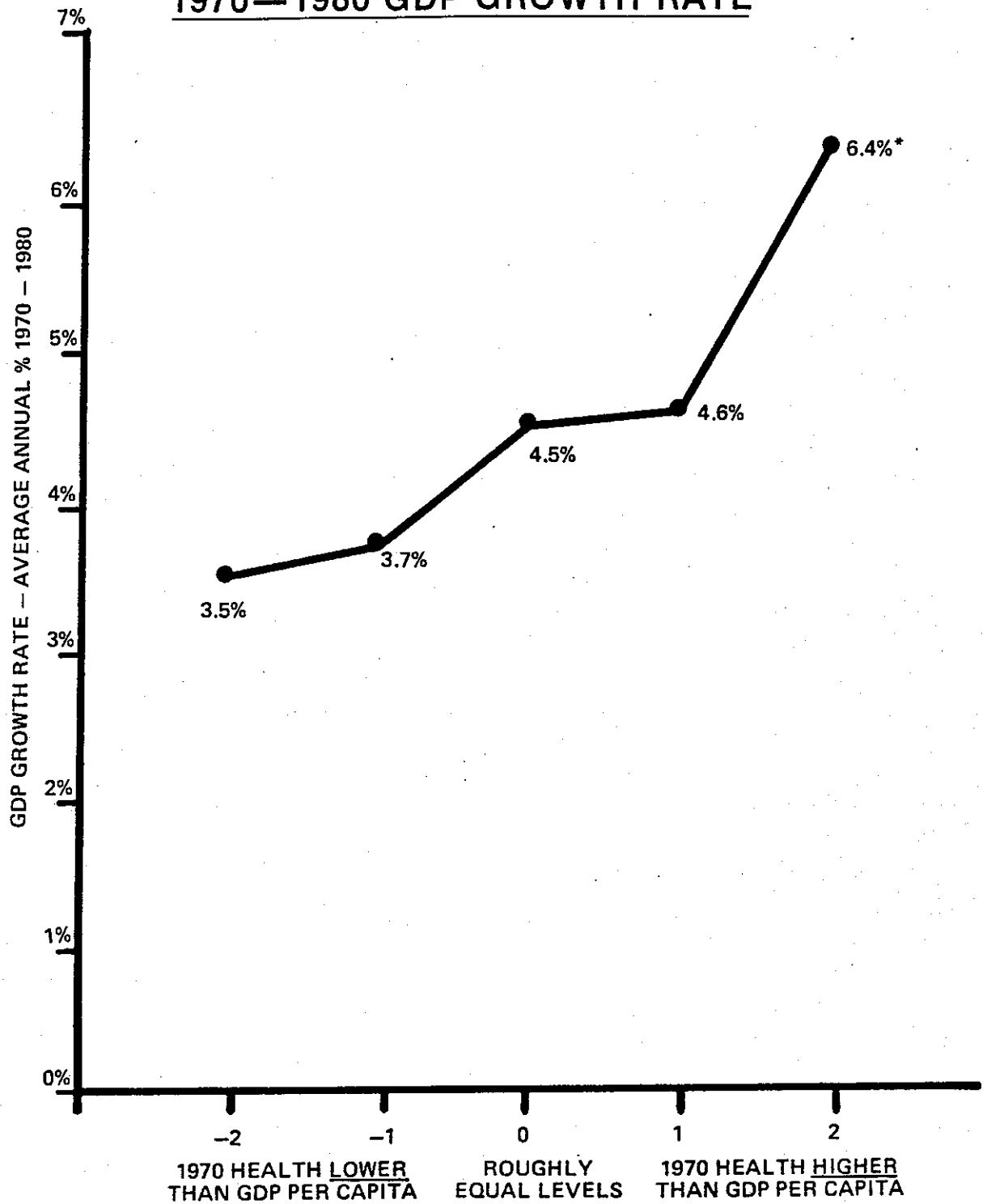
In this exercise, we looked at five different pull factors:

1- Health (as measured by infant mortality rates and life expectation);

2- Education (as measured by literacy rates, school enrollment and circulation of newspapers);

3- Access to Water Supply (per cent of population with reasonable access to a water supply);

4- Men in Agriculture (as per cent of working population);

5- Professional and Technical Workers (as per cent of working population).

We then ranked countries according to the degree of difference between the 1970 levels of GDP per capita and each of the pull factors. This difference was then plotted against the GDP Growth Rate for 1970-1980; the results can be seen in Figures 7-11. 6-10

Of the five pull factors, Health and Education had been the strongest and clearest effect on GDP Growth Rates. Access to Water, which serves as an indicator of health and to some extent infrastructure, also had some influence on GDP Growth Rate. The two indicators with the weakest link to growth rate were Men in Agriculture and Professional and Technical Workers, both of which might be seen as indicating less the relative strength of the human capital base than simply indicating the deployment of the work force.
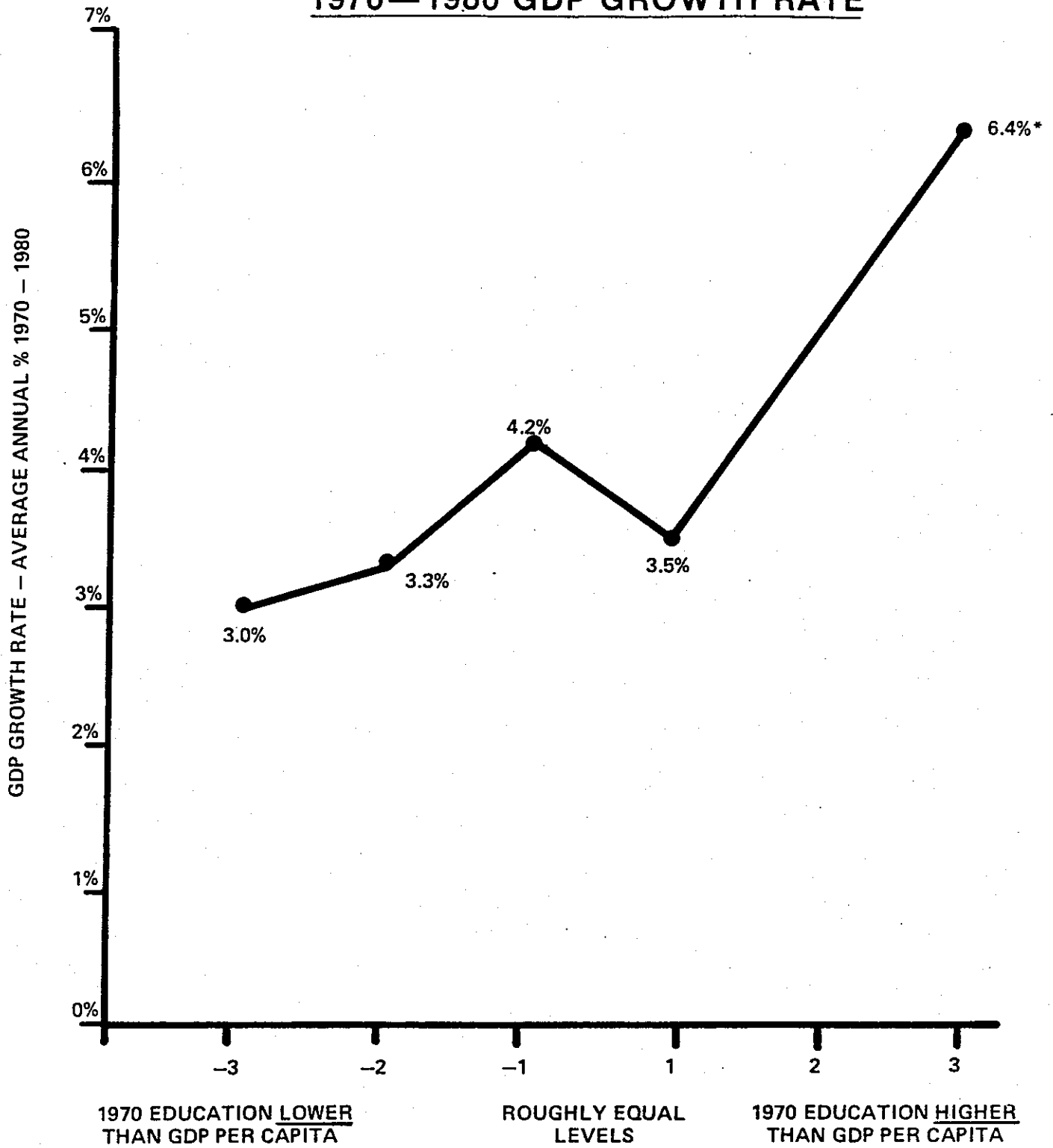
6.

1970 HEALTH AS A PULL ON
1970—1980 GDP GROWTH RATE

GDP GROWTH RATE — AVERAGE ANNUAL % 1970 – 1980

7%
6%
5%
4%
3%
2%
1%
0%

6.4%*

4.6%

4.5%

3.7%

3.5%

−2   −1   0   1   2

1970 HEALTH <u>LOWER</u>   ROUGHLY   1970 HEALTH <u>HIGHER</u>
THAN GDP PER CAPITA   EQUAL LEVELS   THAN GDP PER CAPITA

*EACH POINT REPRESENTS THE AVERAGE FOR A GROUP OF COUNTRIES,
WITH ROUGHLY 15 COUNTRIES IN EACH GROUP.

BJH — 2/85

15

7.

1970 EDUCATION AS A PULL ON
1970—1980 GDP GROWTH RATE

GDP GROWTH RATE – AVERAGE ANNUAL % 1970 – 1980

7%

6%
6.4%*

5%

4%
4.2%

3%
3.0%   3.3%   3.5%

2%

1%

0%

−3   −2   −1   1   2   3

1970 EDUCATION LOWER   ROUGHLY EQUAL   1970 EDUCATION HIGHER
THAN GDP PER CAPITA   LEVELS   THAN GDP PER CAPITA
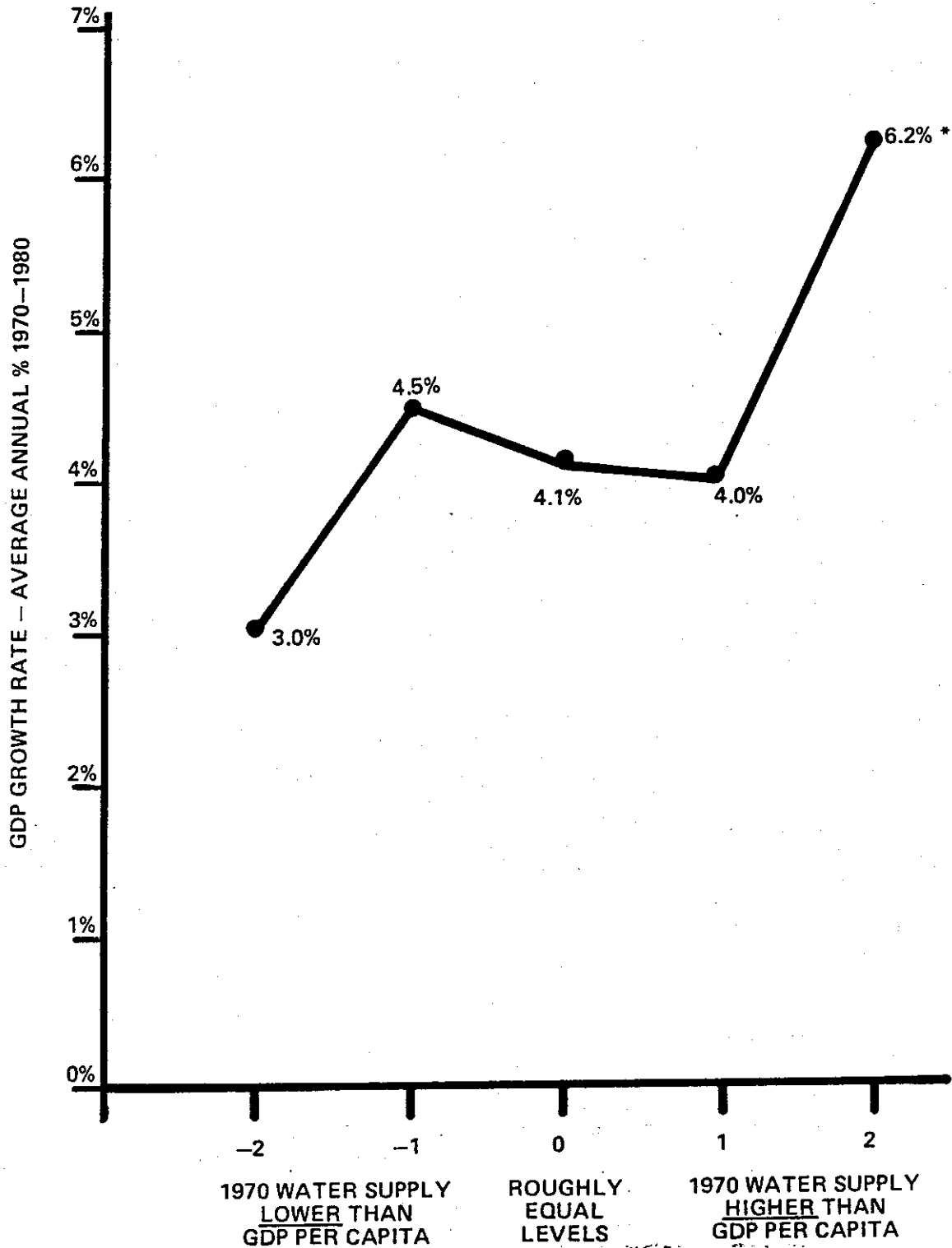
* EACH POINT REPRESENTS THE AVERAGE FOR A GROUP OF
  COUNTRIES, WITH ROUGHLY 15 COUNTRIES IN EACH GROUP.
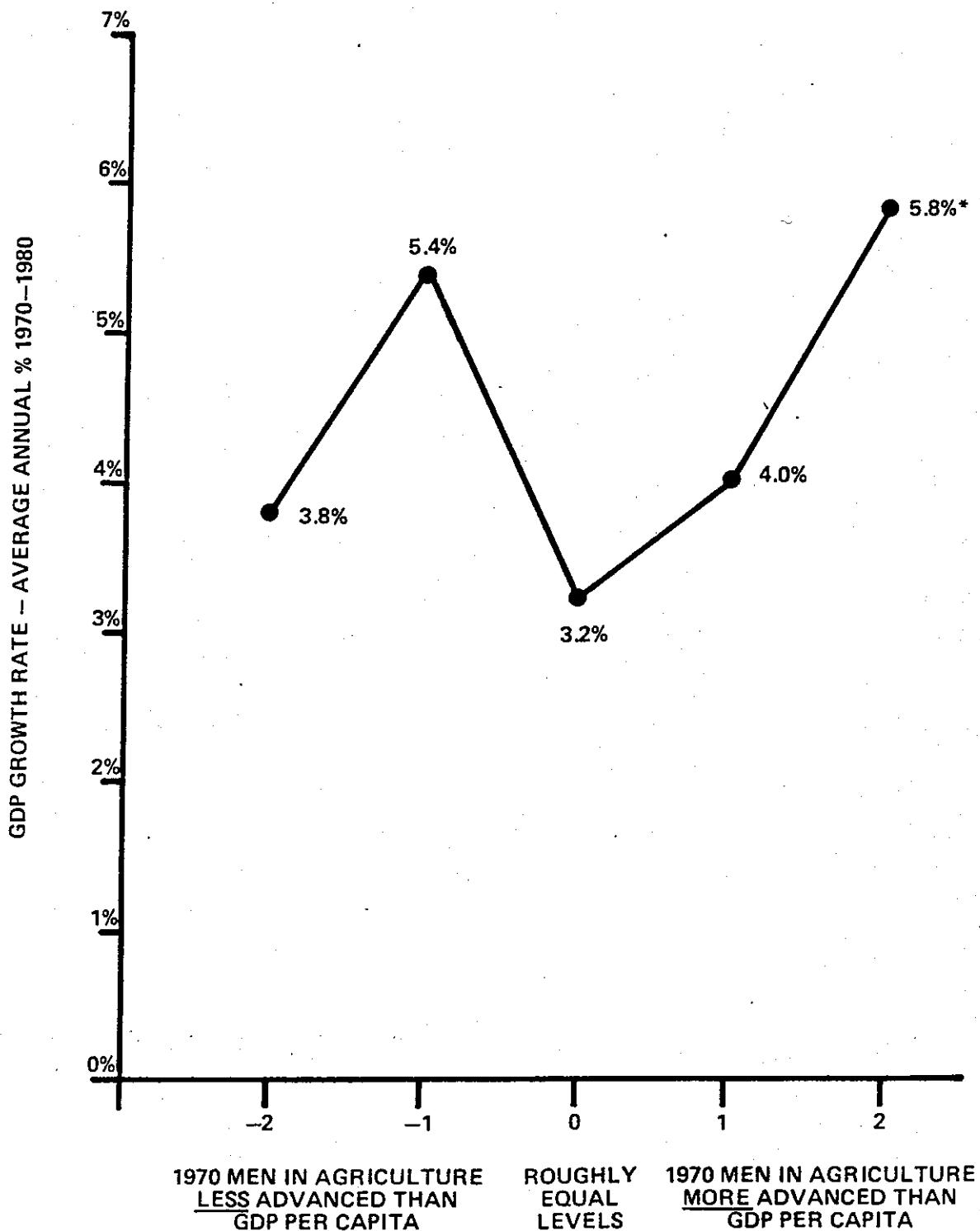
BJH — 2/85

6

1970 ACCESS TO WATER SUPPLY
# AS A PULL ON 1970—1980 GDP GROWTH RATE

*EACH POINT REPRESENTS THE AVERAGE FOR A GROUP OF COUNTRIES, WITH ROUGHLY 15 COUNTRIES IN EACH GROUP.

BJH — 2/85

9.

1970 MEN IN AGRICULTURE
AS A PULL ON 1970—1980 GDP GROWTH RATE

GDP GROWTH RATE – AVERAGE ANNUAL % 1970–1980

3.8%

5.4%

3.2%

4.0%

5.8%*

1970 MEN IN AGRICULTURE
LESS ADVANCED THAN
GDP PER CAPITA

ROUGHLY
EQUAL
LEVELS

1970 MEN IN AGRICULTURE
MORE ADVANCED THAN
GDP PER CAPITA

*EACH POINT REPRESENTS A GROUP OF COUNTRIES, WITH ROUGHLY
15 COUNTRIES IN EACH GROUP

BJH — 2/85

8

10.

1970 PROFESSIONAL & TECHNICAL WORKERS
AS A PULL ON 1970—1980 GDP GROWTH RATE
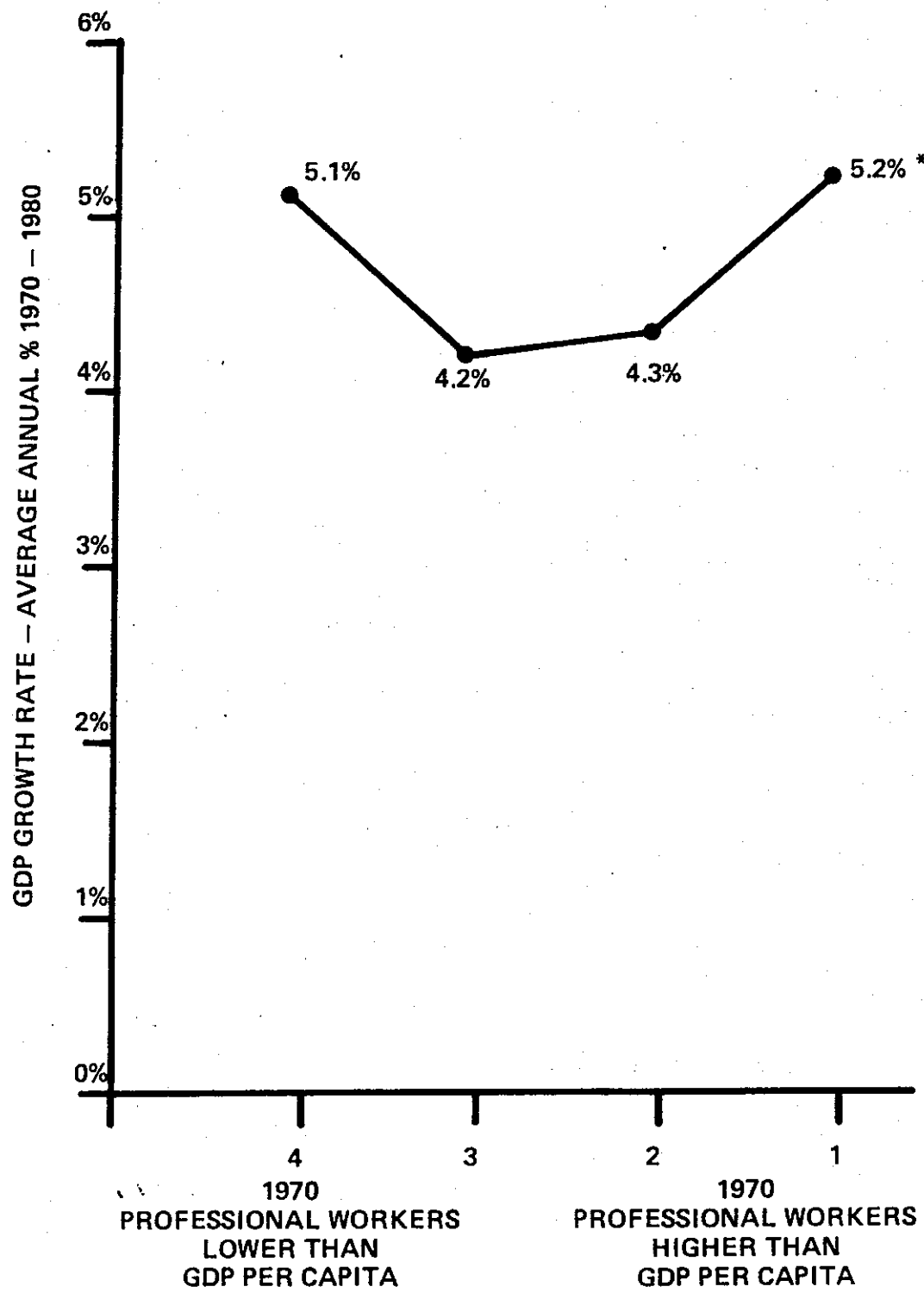
* EACH POINT REPRESENTS A GROUP OF COUNTRIES, WITH
 ROUGHLY 15 COUNTRIES IN EACH GROUP

BJH — 6/85

The theory that a strong human capital base will pull up a weak GDP is further strengthened by examining those countries with the greatest variance between health and education and GDP. The average growth rate for the fifteen countries with the greatest positive variance was 6.3%. For all others with lower or negative variances, the average growth rate was only 3.9%. This is illustrated in Figures 11 and 12.

This work in pull factors is useful in several respects. First, it offers clear evidence on the importance of a strong human capital base to the process of development. Second, it suggests that we can begin to identify which countries are more likely to show high growth rates, since high GDP Growth is associated with the disparity between a relatively high level of health and education and a relatively low level of GDP. This also suggests that there might be as yet unidentified pull factors, and that there might also be particular pull factors that are associated with growth in particular areas of an economy. To the extent that pull factors can be discovered and their effects charted, our ability to forecast likely rates of development is enhanced. Figure 13.

Conclusions to Part I

This work with the UNRISD data base is still fairly new. It does, however, point to the importance of social foundations for economic development, and in specifying the relation between social and economic growth, suggests ways of defining the potential of any country and anticipating its ability to meet that potential. The work also provides several ways of characterising

EFFECT OF 1970 SOCIAL PULL FACTORS
ON GDP GROWTH 1970-80

GDP GROWTH RATE 1970 — 1980
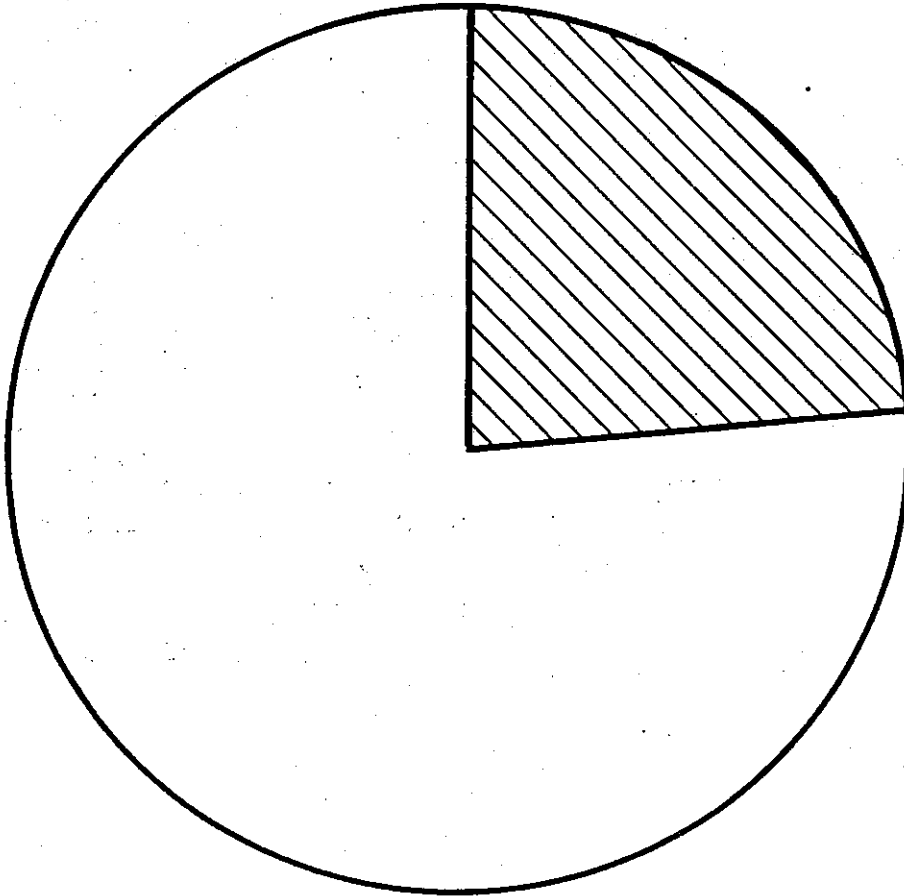
HEALTH   EDUCATION   WATER SUPPLY

PULL FACTORS
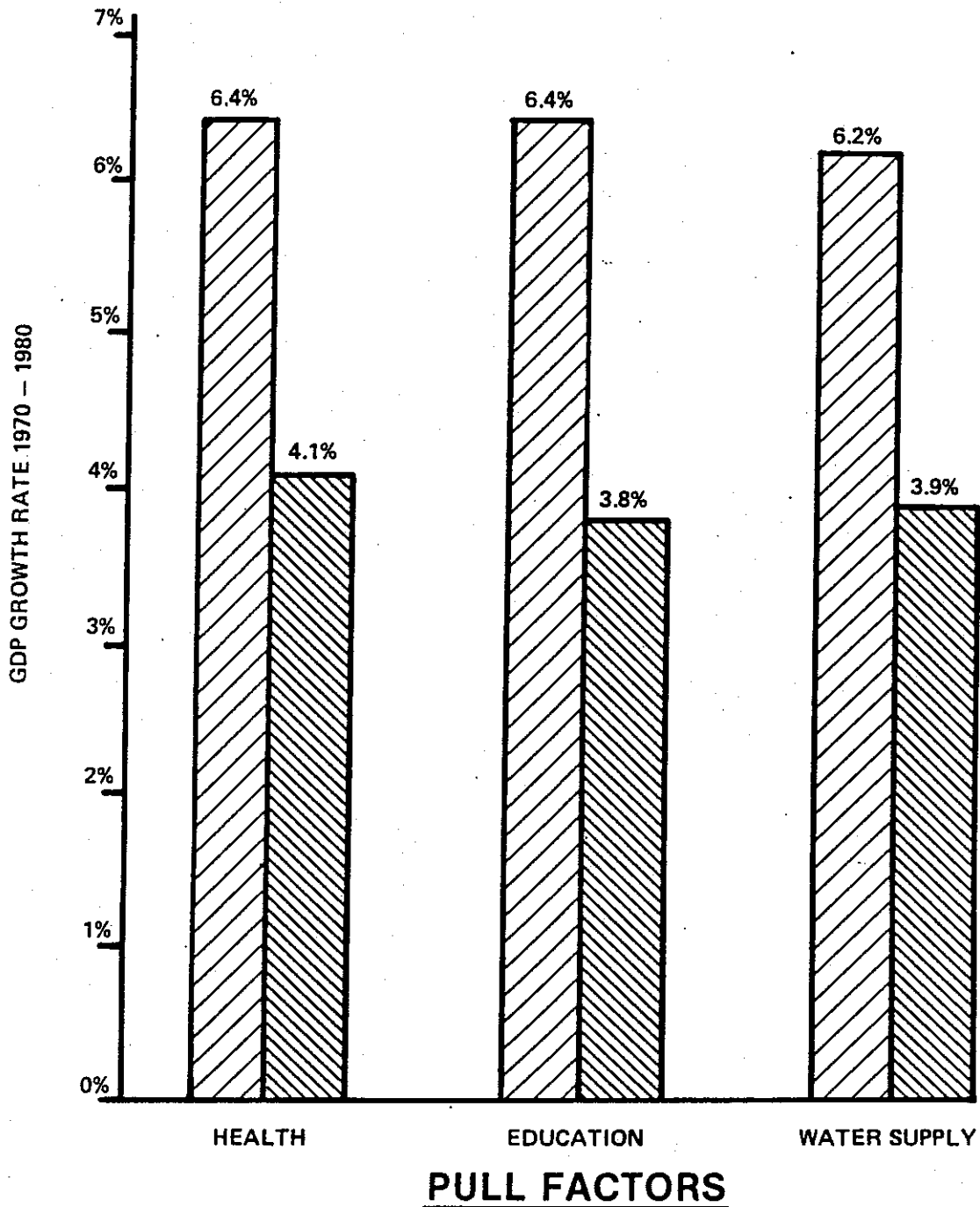
15 COUNTRIES WHERE 1970 LEVEL OF HEALTH, EDUCATION OR ACCESS TO WATER WAS HIGHER THAN GDP PER CAPITA IN 1970

ALL OTHER COUNTRIES IN EACH SAMPLE

BJH — 6/85

HEALTH AND EDUCATION AS A PULL
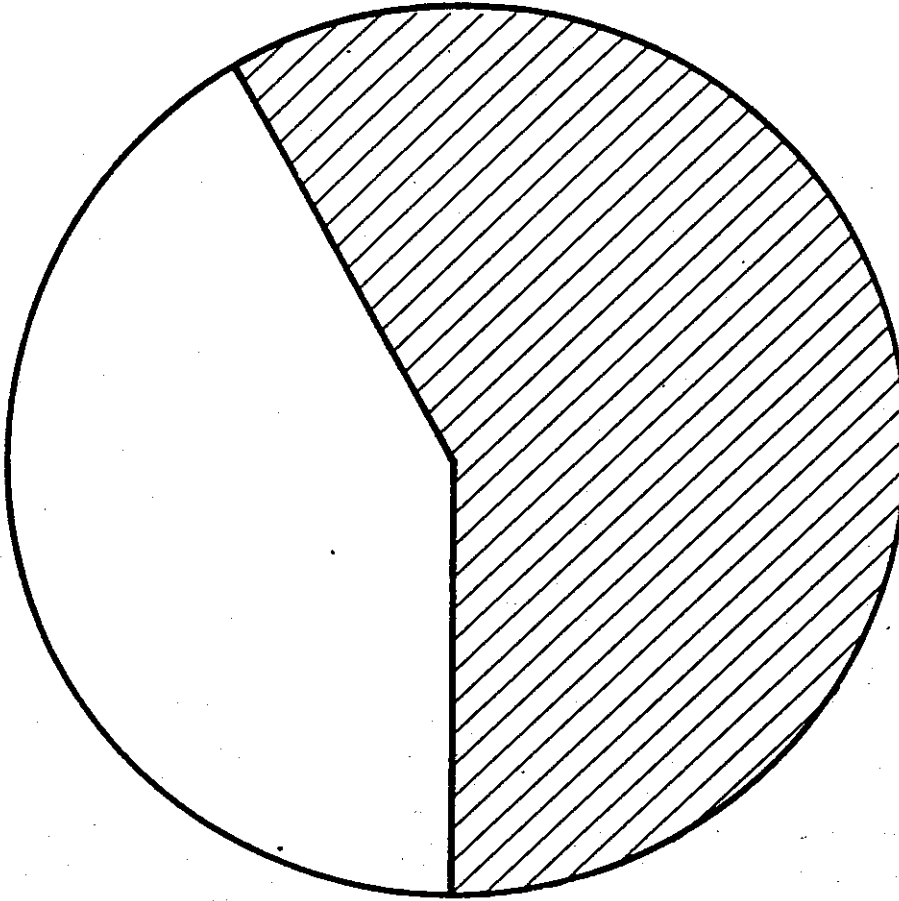# ON GDP GROWTH RATE

= PROPORTION OF COUNTRIES WITH 1970 – 1980 GDP GROWTH RATES GREATER THAN 6%

HIGH VARIANCE COUNTRIES
N = 22
COUNTRIES WITH
HIGHER LEVELS OF HEALTH AND
EDUCATION COMPARED TO GDP

ALL COUNTRIES
N = 104

BJH – 6/85

1970 HEALTH AND EDUCATION AS PREDICTORS OF 1970/80 GDP GROWTH

HIGH VARIANCE COUNTRIES

GROWTH PREDICTED BUT NOT SEEN

ZAIRE	0.1%
PERU	3.0%
INDIA	3.6%
SPAIN	4.0%
EL SALVADOR	4.1%
SRI LANKA	4.1%
EAST GERMANY	4.8%
BOLIVIA	4.8%
GREECE	4.9%

TOTAL: 9 COUNTRIES
AVERAGE GROWTH: 3.9%

GROWTH PREDICTED AND SEEN

PHILIPPINES	6.3%
KENYA	6.5%
BULGARIA	7.1%
THAILAND	7.2%
INDONESIA	7.6%
MALAYSIA	7.8%
SINGAPORE	8.5%
PARAGUAY	8.6%
ROMANIA	8.6%
ECUADOR	8.8%
POLAND	8.9%
HONG KONG	9.0%
SOUTH KOREA	9.5%

TOTAL: 13 COUNTRIES
AVERAGE GROWTH: 8.0%

GROWTH SEEN, BUT NOT PREDICTED

MALAWI	6.3%	NO DATA, LOW POSITIVE VARIANCE
NIGERIA	6.5%	NO DATA
DOMINICAN REPUBLIC	6.6%	NO DATA, NEGATIVE VARIANCE
IVORY COAST	6.7%	NO DATA, NEGATIVE VARIANCE
ALGERIA	7.0%	NEGATIVE VARIANCES
EGYPT	7.4%	LOW POSITIVE VARIANCES
TUNISIA	7.5%	NEGATIVE VARIANCES
LESOTHO	7.9%	NO DATA
BRAZIL	8.4%	NO DATA, NEGATIVE VARIANCE
YEMEN ARAB REP.	9.2%	NO DATA
SYRIA	10.0%	LOW POSITIVE VARIANCES
SAUDI ARABIA	10.6%	NO DATA
IRAQ	12.1%	NEGATIVE VARIANCES

BJH — 6/85

"expectable" development and, therefore, of identifying important variations
from the expected.

PART II - SHIFTING THE BALANCE

In this section we examine the Double-S Curve as a closed system within
which more and more countries are competing as "developed" economies to achieve
an advantageous position. For this analysis, we will eventually be drawing on
the 1980 UNRISD data when it is available, and until then we will only suggest
what might be found.

Part I: As A Closed System

In looking at the Double-S Curve as a closed system, we are examining
some of the implications of an observation made in Part I: namely, that Mature
Societies grow more slowly than societies which can be classified as Creative
Economies or New Consumers, i.e. at Stages 2 and 3 of the development process.
Probably the major implication of these different rates of growth is that as the
Mature Societies slow down, the Stage 2 and 3 societies catch up. This has
already resulted in a global economic system that is more complex than any other
the world has known. It is a complexity due in large part to the increased
number of sophisticated participants and the changes in comparative advantages
that has caused.

In the course of charting this transition and looking at some of its
features, we will be looking at three subjects. First, we compare some of the

ideas of the Double-S Curve to the work in stages of economic growth by W. W. Rostow. Second, we show how the number of countries at different levels of development has changed since 1960, and suggest how that change has shifted the balance of economic power. Third, we examine the role of population size and growth in the development process and in the changing relationships between "developed" and "developing" countries.

W. W. Rostow

The Double-S Curve was based on distribution data from 1970, rather than any kind of time series data. Nonetheless, it shows some interesting parallels with W. W. Rostow's work, The Stages of Economic Growth. (Rostow, 1971, first published 1960.) In particular, the stages he describes have rough equivalences with the stages of the Double-S Curve, as show below.

	Rostow		Double-S Curve
Stages:	1. Traditional Society	=	1. Social Foundations
	2. Preconditions for Take-off		
	3. Take-off	=	2. Creative Economies
	4. Drive to Maturity		
		=	3. New Consumers
	5. High Mass Consumption		
			4. Mature Societies

Clearly, the language is different, yet the sense of what happens at each stage is quite similar. That Rostow places "maturity" at a different

point is largely due to the fact that he was writing thirty years ago, and since that time the development process has continued among all countries at every stage. Thus, from the perspective of 1984, maturity signals the <u>comple-</u> <u>tion</u> of the process of moving from traditional society to saturated mass con- sumption. While for Rostow in the 1950s, maturity meant the economic <u>ability</u> <u>to meet</u> the demands of mass consumers.

One of the criticisms of applying Rostow's 1950s analysis to the developing countries of 1984 is that conditions have changed; the world facing the LDCs today bears no resemblance to the world in which Rostow's countries began the development process. It is a criticism with which I fully agree. Yet one needs to identify what exactly has altered and from that try to image the effect of those changes on the development process today. A suggestive list of those changes appears below:
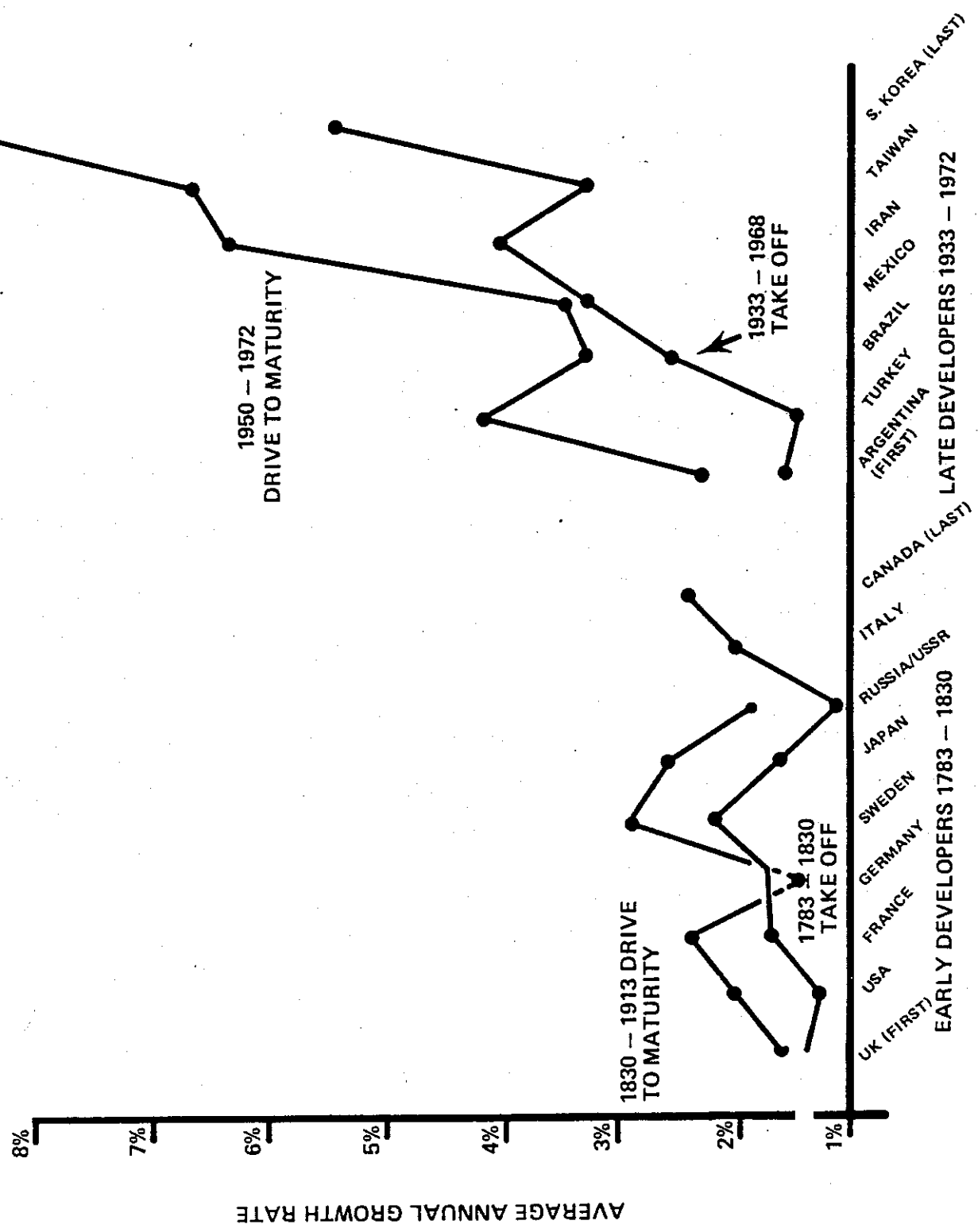
What is Different Today

- General level of technology
- Speed of travel and communications
- Increased amounts of international aid
- Increased international economic integration
- Growth of population; increased density
- Spread of mass education and university training.

What is significant about this list, and what cannot be emphasized too strongly, is that each one of these items serves to accelerate the development process. Thus, it is not surprising that those countries which Rostow calls the "Late-Comers to Industrialisation" show faster growth rates than countries which developed earlier. This is shown in a diagram derived from Rostow's 1980 book, <u>Why the Poor Get Richer and the Rich Slow Down</u>, p.266-269, Figure 14.

G

PER CAPITA GROWTH RATES AMONG
EARLIER AND LATER DEVELOPING COUNTRIES

14.

AVERAGE ANNUAL GROWTH RATE

8%
7%
6%
5%
4%
3%
2%
1%

1950 — 1972
DRIVE TO MATURITY

1933 — 1968
TAKE OFF

1830 — 1913 DRIVE
TO MATURITY

1783 — 1830
TAKE OFF

EARLY DEVELOPERS 1783 — 1830

LATE DEVELOPERS 1933 — 1972

UK (FIRST)
USA
FRANCE
GERMANY
SWEDEN
JAPAN
RUSSIA/USSR
ITALY
CANADA (LAST)
ARGENTINA (FIRST)
TURKEY
BRAZIL
MEXICO
IRAN
TAIWAN
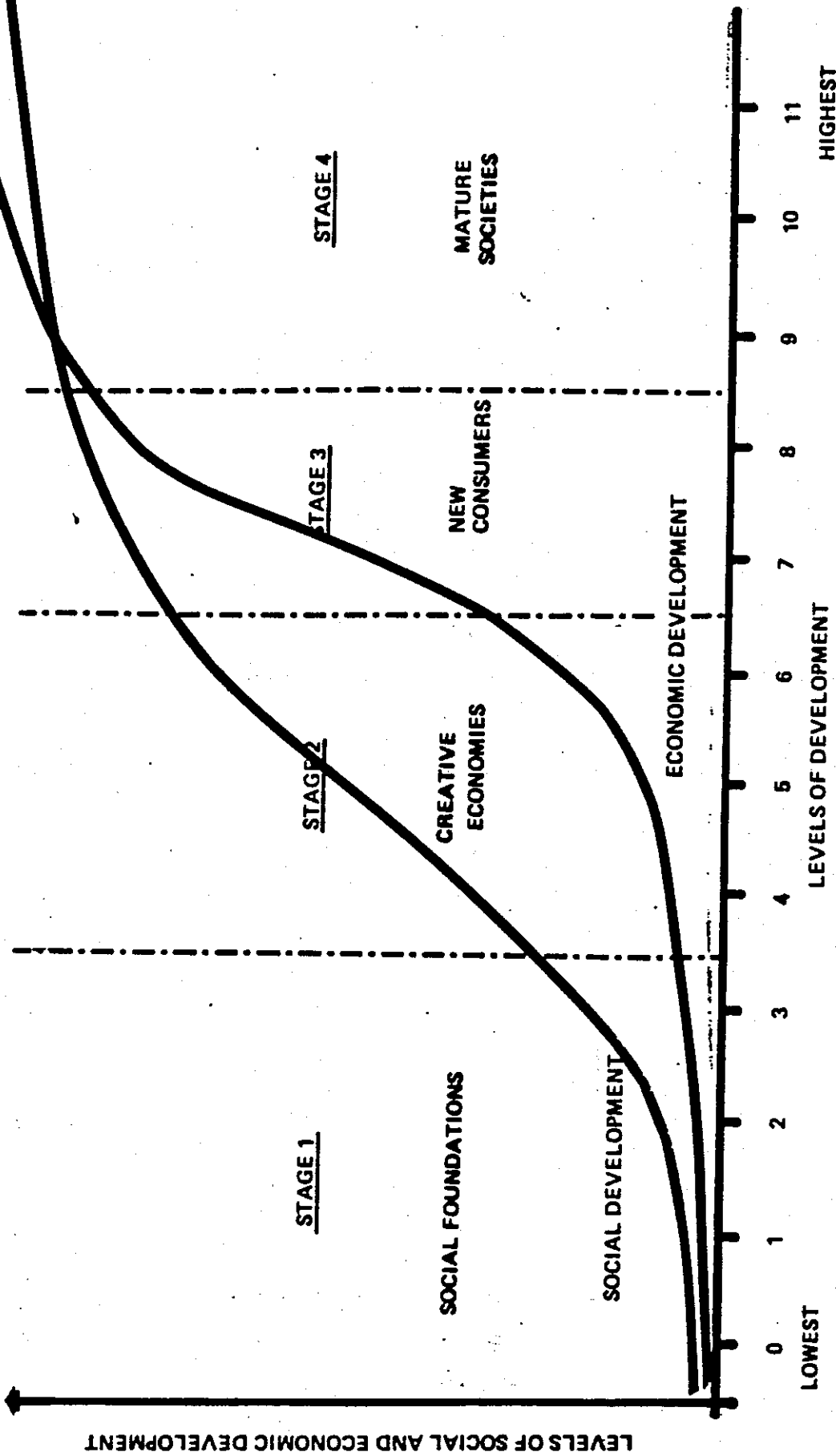S. KOREA (LAST)

(FROM ROSTOW, 1980)
P266 — 269

BJH — 2/85

Shifting Economic Power

Obviously, Rostow's sample of countries in Figure *14* has been carefully selected and can be challenged on that basis. Yet it is useful to combine the idea of faster growth among late developers with the idea of faster growth in Stages 2 and 3 of the Double-S Curve, as shown in Figure *15*. Both ideas lead us to our second point: that the OECD countries are coming under increasing pressure from the developing world, where a large number of countries are rapidly achieving "developed" status. In effect, the club of the developed countries is becoming less and less exclusive.

In Figures *16-20*, an attempt has been made to show how the number of "developed" countries has increased sinced 1960. Figures *16-18* are based on the 1960 sample of UNRISD countries for which there was sufficient data to make a comparison from 1960, 1970 and 1982. Figures *19* and *20* are based on the much larger UNRISD sample from 1970. In the absence of 1980 UNRISD data, life expectation figures for 1982 have been taken from the World Bank's World Development Report, 1984. These figures have then been transformed in order to find the development levels represented by life expectation figures (See UNRISD, Contents and Measurement of Socioeconomic Development, New York, 1972, for a discussion of methodology.), and to show thereby the increasing number of "developed" countries.
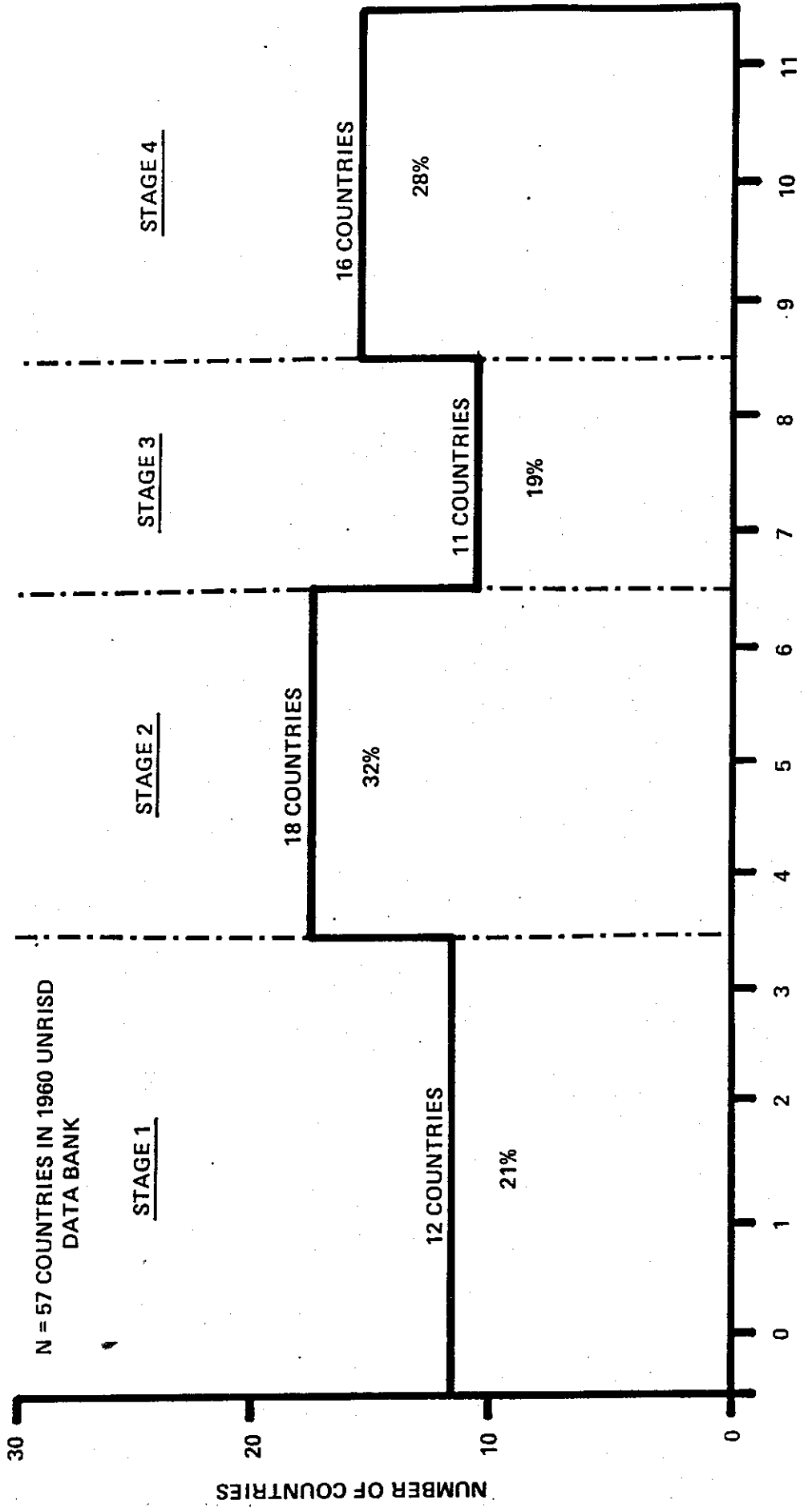
Significantly, whether one uses the 1960 sample of 57 countries, or the 1970 sample of 113 countries, the number of Stage 4 countries (Mature Societies)
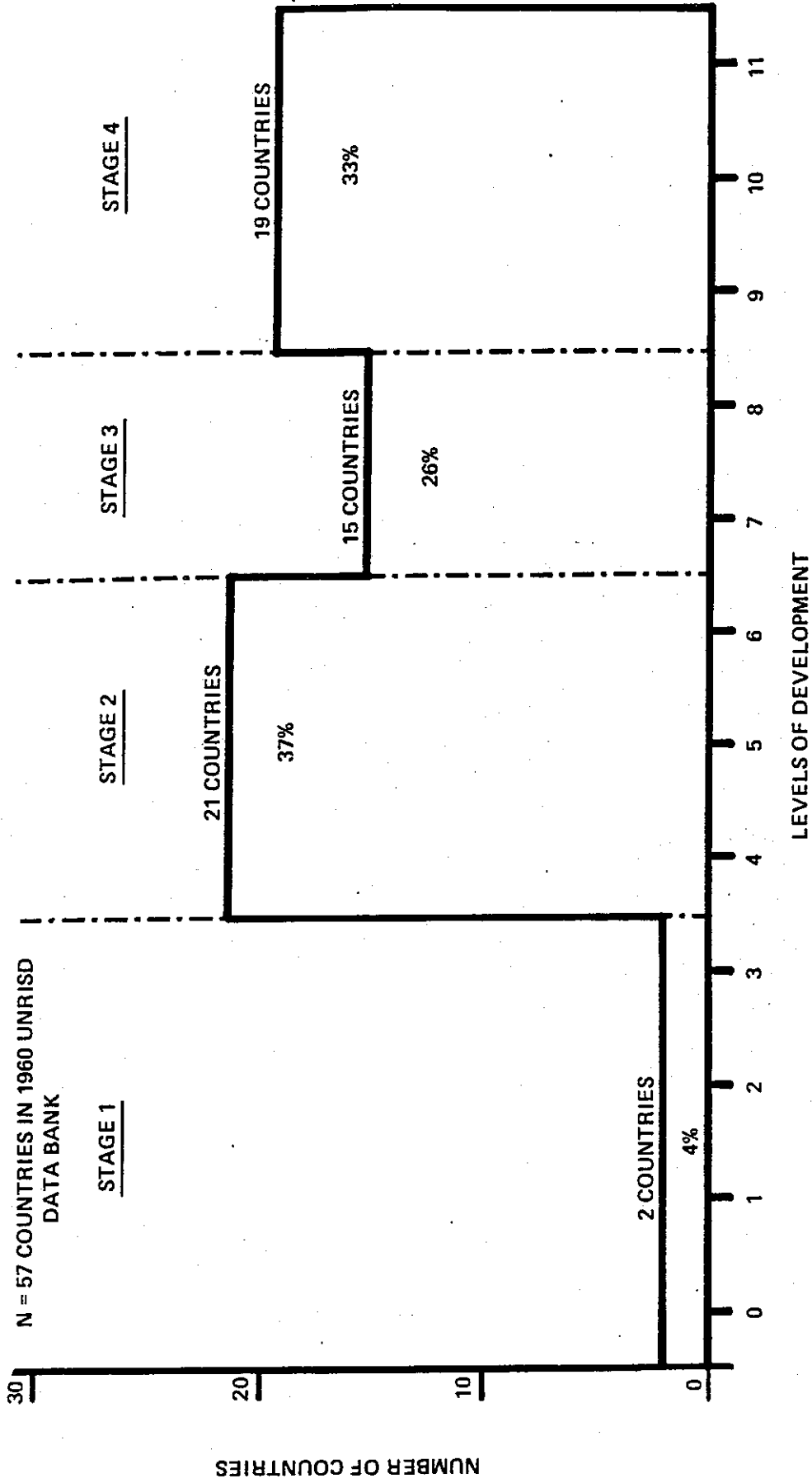
DOUBLE — S CURVE

LEVELS OF SOCIAL AND ECONOMIC DEVELOPMENT

STAGE 1

SOCIAL FOUNDATIONS

SOCIAL DEVELOPMENT

STAGE 2

CREATIVE ECONOMIES

STAGE 3

NEW CONSUMERS

STAGE 4

MATURE SOCIETIES

ECONOMIC DEVELOPMENT

LEVELS OF DEVELOPMENT

LOWEST

0 1 2 3 4 5 6 7 8 9 10 11

HIGHEST

BJH — 11/84

15.

29

1960 DISTRIBUTION OF COUNTRIES BY DEVELOPMENT STAGES

N = 57 COUNTRIES IN 1960 UNRISD
DATA BANK

STAGE 1

12 COUNTRIES

21%

STAGE 2

18 COUNTRIES

32%

STAGE 3

11 COUNTRIES

19%

STAGE 4

16 COUNTRIES

28%

NUMBER OF COUNTRIES

30

20

10

0

0 1 2 3 4 5 6 7 8 9 10 11

LEVELS OF DEVELOPMENT

BJH — 2/85

16.

30

1970 DISTRIBUTION OF COUNTRIES BY DEVELOPMENT STAGES

N = 57 COUNTRIES IN 1960 UNRISD DATA BANK

STAGE 1

STAGE 2

STAGE 3

STAGE 4

2 COUNTRIES

21 COUNTRIES

15 COUNTRIES

19 COUNTRIES

4%

37%

26%

33%

NUMBER OF COUNTRIES

LEVELS OF DEVELOPMENT

BJH — 2/85

31

1982 DISTRIBUTION OF COUNTRIES BY LIFE EXPECTATION*

N = 57 COUNTRIES IN 1960 UNRISD DATA BANK

STAGE 1

1 COUNTRY

2%

STAGE 2

18 COUNTRIES

32%

STAGE 3

6 COUNTRIES

11%

STAGE 4

32 COUNTRIES

56%

NUMBER OF COUNTRIES

30

20

10

0 1 2 3 4 5 6 7 8 9 10 11

* 1984 World Development Report, World Bank

BJH — 2/85

32

1970 DISTRIBUTION OF COUNTRIES BY DEVELOPMENT STAGES

N = 114 COUNTRIES IN 1970 UNRISD DATA BANK

38 COUNTRIES
33%
STAGE 1

33 COUNTRIES
29%
STAGE 2
INCLUDING CHINA

21 COUNTRIES
18%
STAGE 3

22 COUNTRIES
19%
STAGE 4

NUMBER OF COUNTRIES

DEVELOPMENT LEVELS

BJH – 2/85

1982 DISTRIBUTION OF COUNTRIES BY LIFE EXPECTATION*
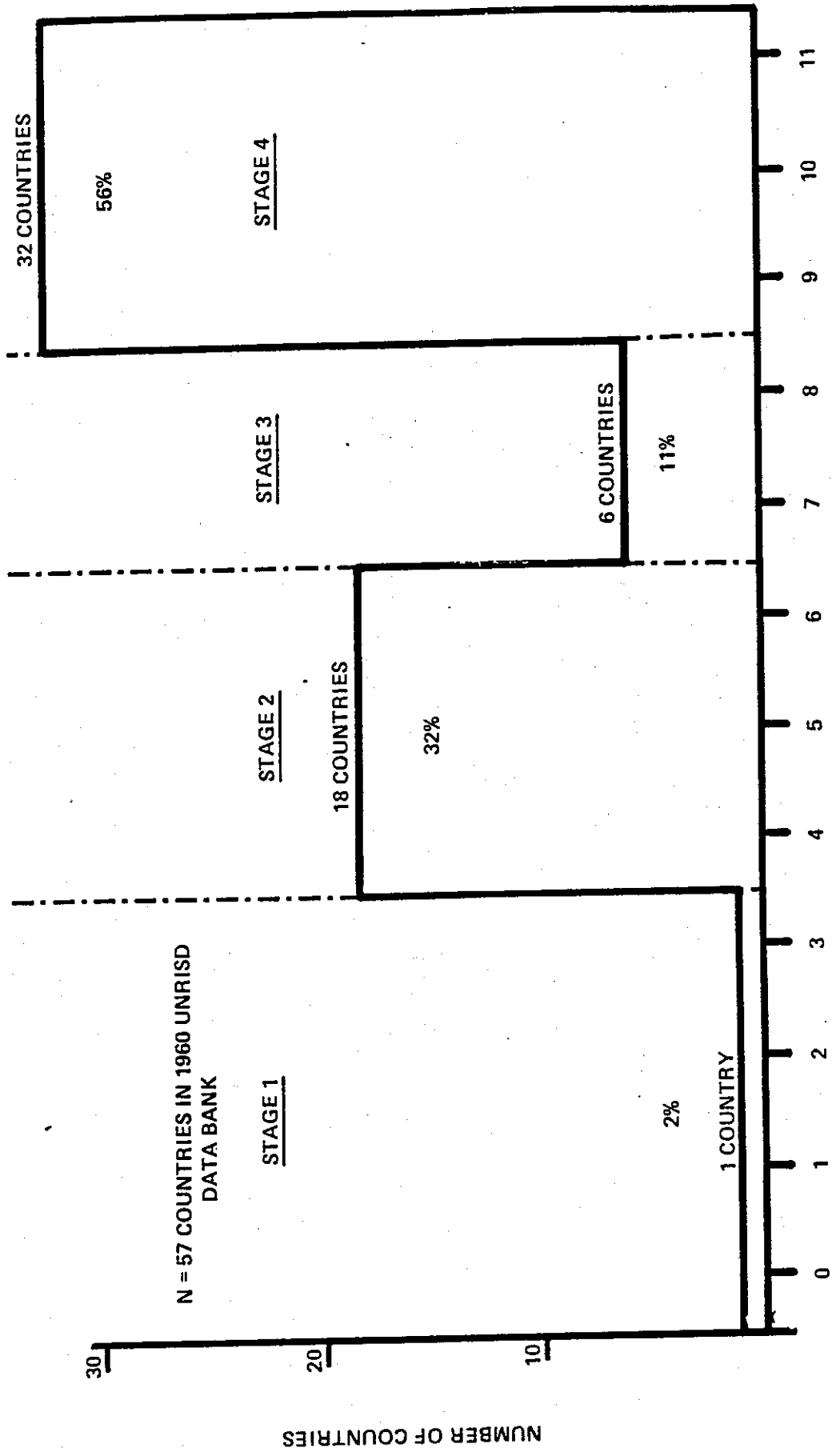
N = 114 COUNTRIES IN 1970 UNRISD DATA BANK

40 COUNTRIES — 35%

INCLUDES SOUTH KOREA AT LEVEL 9

STAGE 4

37 COUNTRIES — 32%

INCLUDES AT LEVEL 7:
CHINA
MEXICO
MALAYSIA

INCLUDES BRAZIL AT LEVEL 6

STAGE 2

10 COUNTRIES — 9%

STAGE 3

27 COUNTRIES — 24%

STAGE 1

NUMBER OF COUNTRIES

DEVELOPMENT LEVELS

* 1984 World Development Report, World Bank

BJH – 2/85

20.

34

has doubled from 1960-1982. During the same period, the number of Stage 1

countries, which are at the beginning of the development process, has dropped

significantly.

Two things are of immediate interest in these figures: first, the

steady rise in the levels of development generally; and second, the startling

expansion of the numbers of countries which can now be classified as "Mature

Societies," based on life expectation figures. These changes are in large part

responsible for a very different configuration of the world's economic and poli-

tical power, and go a long way to explaining many of the strains in the world

economic system.

This view tends to be confirmed when countries are grouped by their

1970 levels of development and then used to compare the distribution of world

GDP in 1960 versus the 1981 distribution, as derived from figures in the World

Development Report, 1983. (See Figures 10 and 11.) The most dramatic shifts in

the proportions of world GDP are away from the most developed countries in level

11 (The USA, Canada and Sweden) to those countries in levels 5-10. In 1960, the

USA, Canada and Sweden accounted for 48% of the world GDP. In 1981, their pro-

portion was down to 33%.

Another way of looking at this shift between the 1960s and the 1980s is

to suggest that by 1960 only these three countries (USA, Canada and Sweden) were

well ensconced in Stage 4 of the development process when the saturation of mass

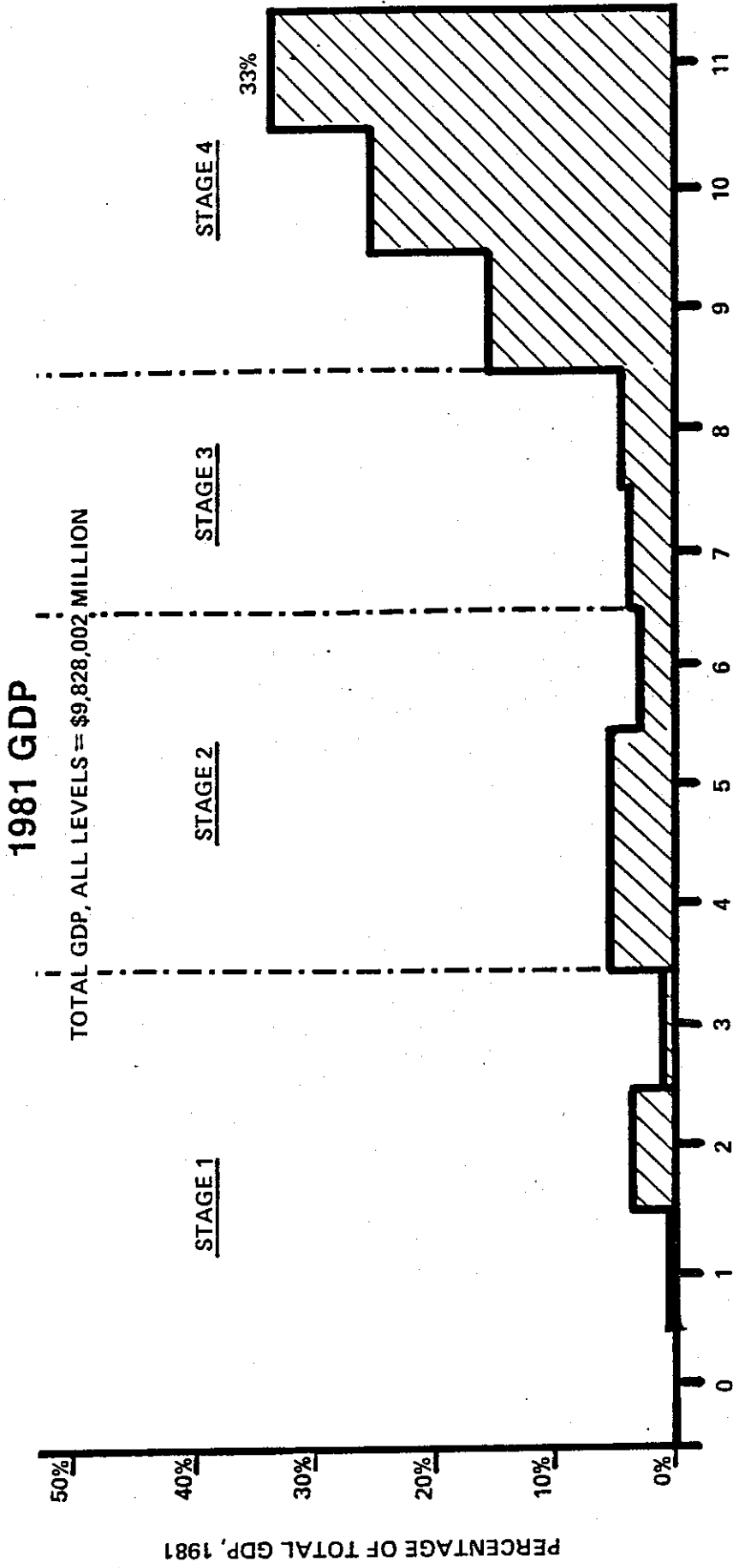consumption needs begins to be approached. In contrast, if the World Bank's

PERCENTAGES OF TOTAL GDP
BY 1970 DEVELOPMENT LEVELS

1960 GDP

TOTAL GDP, ALL LEVELS = $1,164,610 MILLION

STAGE 1

STAGE 2

STAGE 3

STAGE 4

48%

PERCENTAGE OF TOTAL GDP, 1960

50%
40%
30%
20%
10%
0%

0   1   2   3   4   5   6   7   8   9   10   11

1970 LEVELS OF DEVELOPMENT
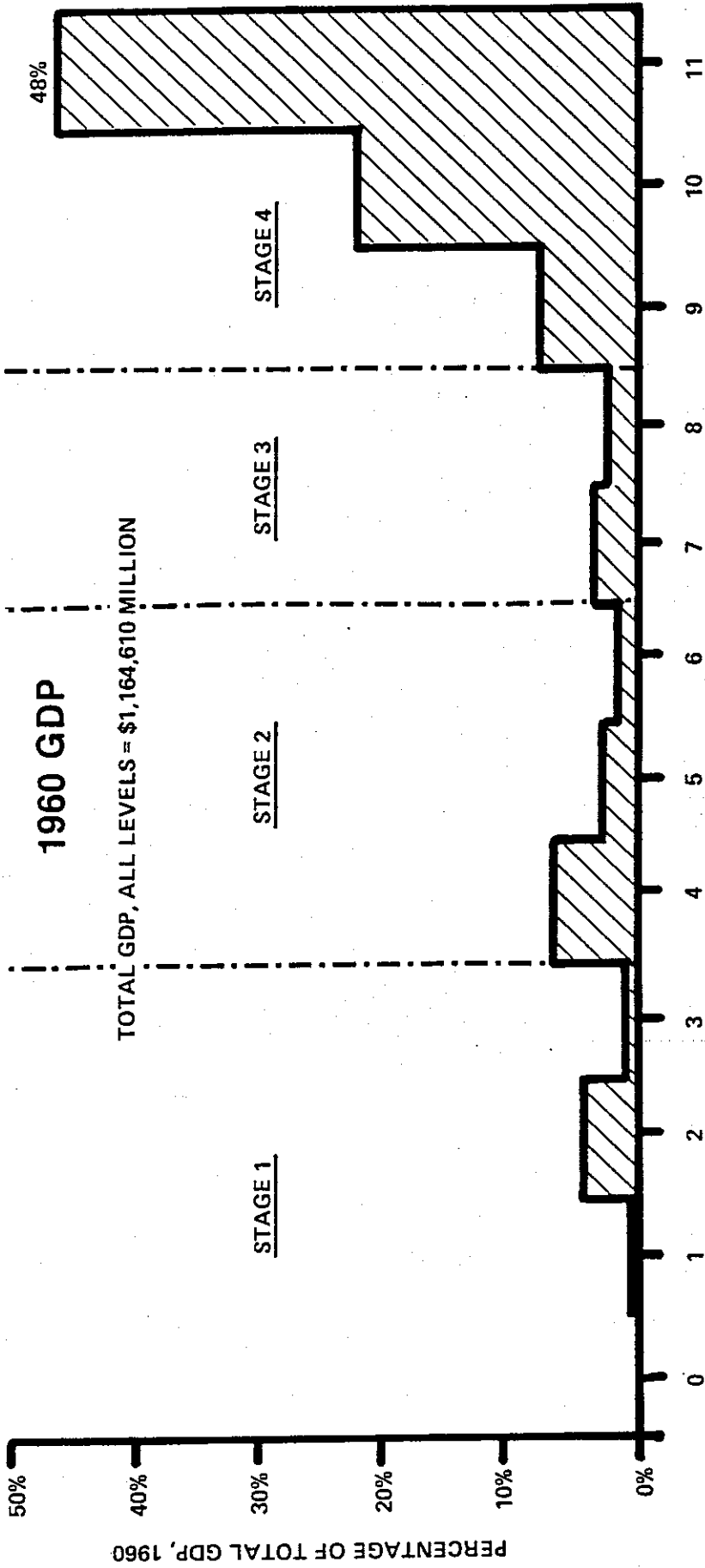
BJH – 2/85

Note: Many Eastern European
Countries Missing Data

21.

36

PERCENTAGE OF TOTAL GDP BY 1970 DEVELOPMENT LEVELS

1981 GDP

TOTAL GDP, ALL LEVELS = $9,828,002 MILLION

STAGE 1   STAGE 2   STAGE 3   STAGE 4

33%

PERCENTAGE OF TOTAL GDP, 1981

50%   40%   30%   20%   10%   0%

0   1   2   3   4   5   6   7   8   9   10   11

1970 LEVELS OF DEVELOPMENT

Note: Many Eastern
European Countries
Missing GDP Data

BJH – 2/85

1982 Life Expectation figures are an adequate substitute for the 1980 UNRISD development indices, about forty countries will have entered or completed Stage 4 during the 1980s. Obviously, such a change cannot have taken place without having some noticeable effect on the relative strengths and weaknesses of all countries in the world economic system.

This view is supported by Michael Beenstock (1983) who argues in The World Economy in Transtion that

> An important global factor in the OECD
> slowdown is the changing balance of world
> economic power, which has moved in favour
> of the developing countries. Economic
> expansion in the Third World has threatened
> the existing economic structures in the
> OECD countries, which in turn have been
> slow to adjust to these new circumstances.
> (p. 12)

In support of this argument, he presents the two tables below, from which he concludes:

> . . . not only were LDCs competing directly
> in OECD domestic markets but . . . they were
> also making inroads into OECD external
> markets. (p. 66)

LDC Share of World Manufacturing Output and Trade, 1950-1980
(% in 1975 dollars)

	Output	Trade
1950	8.4	N.A.
1960	10.3	4.4
1965	10.4	5.1
1970	11.75	5.6
1975	14.9	6.9
1980	15.5	9.8

Note: excludes centrally planned economies
Source: Beenstock, 1983, p. 65

Growth of LDC Manufactured Exports by Destination, 1960-1978
(% per annum at 1970 prices)

	To Developed Countries	To LDCs	Total
1960-8	9.7	9	9.2
1968-78	11.2	14.7	12.3

Source: Beenstock, 1983, p. 65

Obviously, if the speed of the development process over the past twenty years continues, particularly in the Stage 2 and 3 countries, there is every chance that this shift in favour of the LDCs will also continue. This will increasingly undermine the economic dominance of the OECD, and will have even greater impact as the more populous LDCs achieve higher levels of development.

Population

This brings us to the third aspect of the Double-S Curve as a closed system: the question of population size and growth. As has been previously

39

shown, those countries at Stages 2 and 3 of the development process in 1970
showed the highest rates of GDP growth in the period 1970-1980. (Figure A./5.) In
the case of the 1970 Stage 3 countries, only 7% of the 1981 population lived in
those countries. Therefore, one might consider that the degree to which they
threatened the economic predominance of the Mature (Stage 4) Societies of 1970,
which had 23% of the world population, was necessarily limited.

The same cannot be said of the 1970 Stage 2 countries, the Creative
Economies. They had the highest rate of GDP growth in the period 1970-1980 at
5.94% and, in 1981, they contained the largest proportion of the world's
population at 38%. Much of this proportion was taken by China, yet Brazil,
Malaysia, South Korea and Mexico are also included in the Stage 2 countries of
1970, and in 1981, these five countries contained almost 30% of the world's
population. (See Figure 23/2.)

In the World Economic Outlook published by the IMF in 1983 ten
countries were listed as major exporters of manufactures among developing
countries. Of these ten countries, seven were Stage 3 countries in 1970:

> Hong Kong
> Singapore
> Argentina
> Greece
> Yugoslavia
> Portugal
> South Africa.

Of the remaining three, Israel would be classified under the Double-S Curve as
an early Stage 4 country in 1970, and the other two, Brazil and South Korea,
were, in 1970, Stage 2 countries with large populations.

40

1981 POPULATION BY 1970 LEVELS OF DEVELOPMENT

STAGE 1

STAGE 2

STAGE 3

STAGE 4

32%

38%

7%

23%

INCLUDES:

INDIA
PAKISTAN
INDONESIA
NIGERIA

INCLUDES:

CHINA
MALAYSIA
BRAZIL
SOUTH KOREA
MEXICO

PERCENTAGE OF 1981 POPULATION

60%
50%
40%
30%
20%
10%
9%

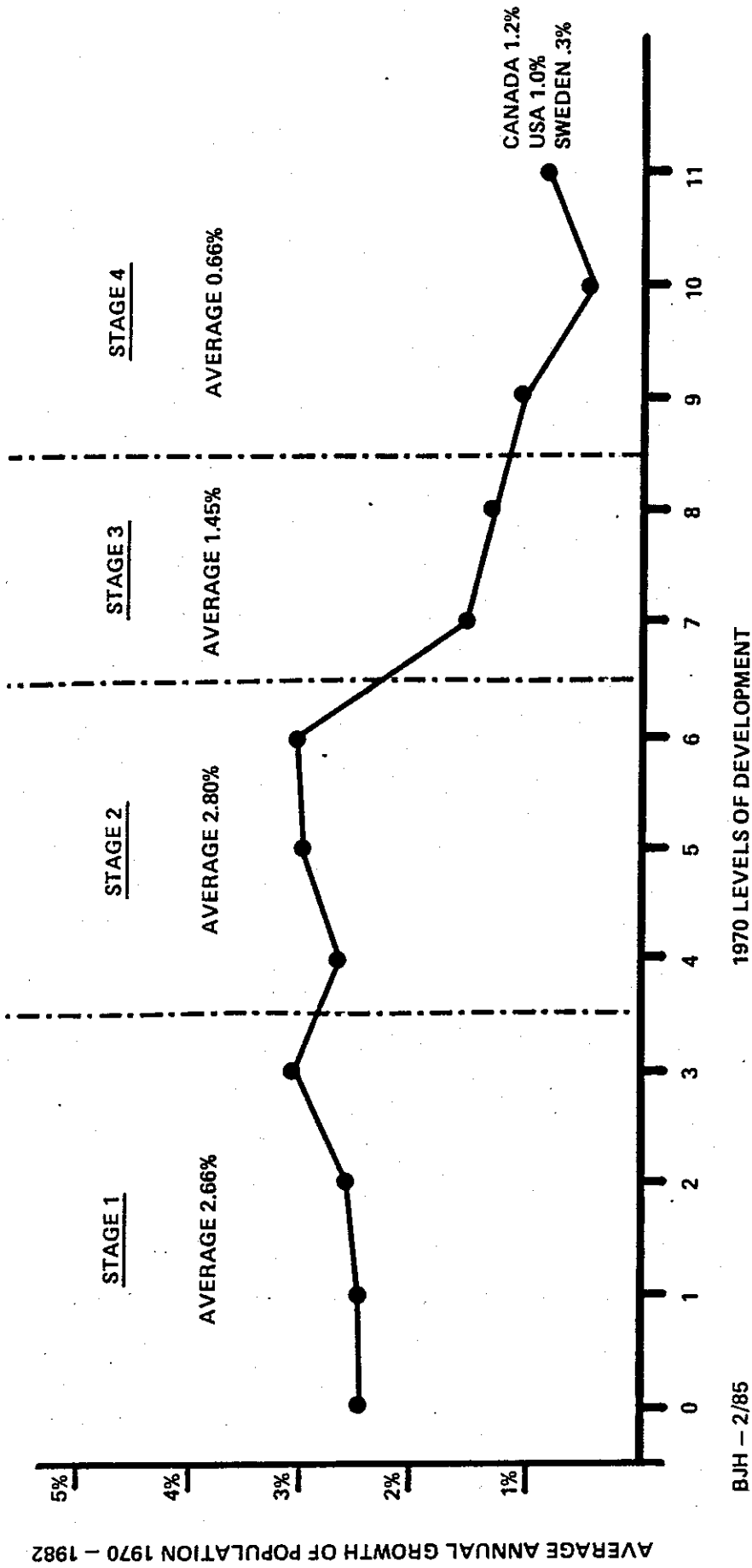0 1 2 3 4 5 6 7 8 9 10 11

1970 LEVELS OF DEVELOPMENT

RJH — 2/85
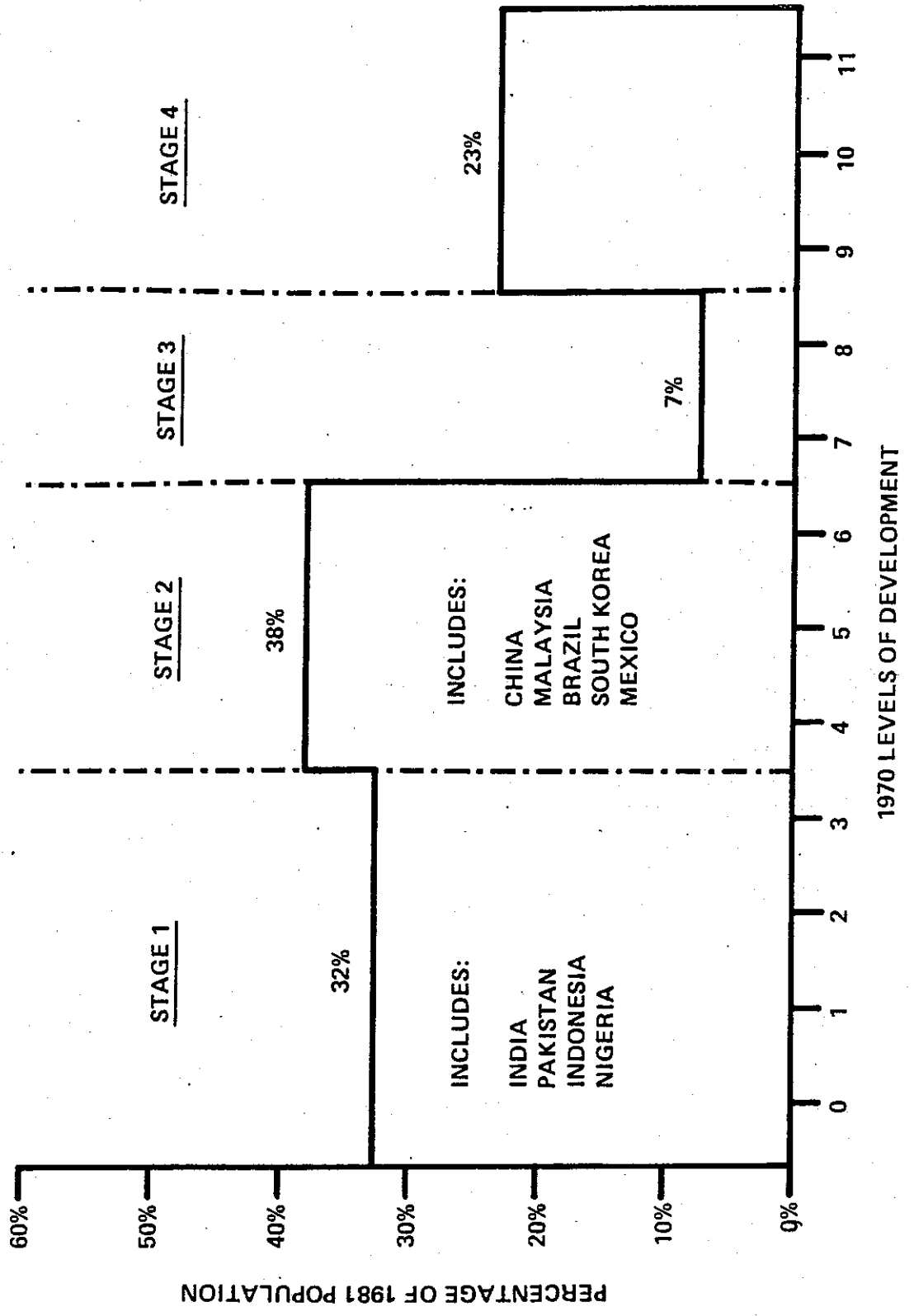
What this 1983 IMF list suggests, when studied against 1970 data, is that Stage 3 countries are most likely to become the Newly Industrialising Countries of subsequent decades. Thus, it is 1970's Stage 2 countries who (if they have progressed) are now, in 1984, likely to provide the next great economic challenge to the developed economies and provide large new markets for the whole world.

At this point, we look again at the most populous of 1970's Stage 2 countries: China, Brazil, Malaysia, Mexico and South Korea. When judged by 1982 life expectation, they were all, except Brazil, in or beyond Stage 3. Thus, these five countries will not simply be small newly industrialised city states like Hong Kong and Singapore, but are approaching industrialisation with 30% of the world's population, a fact which must alter what we can expect from them in terms of their domestic economies and their role in world trade.

There is one final aspect to this intertwined question of population and levels of development. So long as a country experiences rapid population growth, it has to keep expanding social expenditure just to provide extensive, basic coverage of health and education needs. When population growth slows, however, that increasing social investment can either be redirected to other areas of society or used to improve the quality of existing social services.

This idea has particular importance when we look at Figure 1₂ *24* which examines 1970-82 population growth rates according to levels of development in 1970. Here it is interesting to note the clear dichotomy between the Stage 1

24.

1970 — 1982 POPULATION GROWTH RATES
BY 1970 DEVELOPMENT LEVELS

STAGE 1

AVERAGE 2.66%

STAGE 2

AVERAGE 2.80%

STAGE 3

AVERAGE 1.45%

STAGE 4

AVERAGE 0.66%

CANADA 1.2%
USA 1.0%
SWEDEN .3%

AVERAGE ANNUAL GROWTH OF POPULATION 1970 — 1982

1970 LEVELS OF DEVELOPMENT

5%
4%
3%
2%
1%

0 1 2 3 4 5 6 7 8 9 10 11

BJH — 2/85

43

and 2 countries, and the Stage 3 and 4 countries. Countries in the early stages
of the development process in 1970 show population growth rates averaging 2.7%
per year, 1970-1982. Countries in the latter two stages of development in 1970
show population growth rates averaging 1.05% from 1970-1982. Moreover, the
first sign of a decline in population growth rate is seen in the Stage 3
countries and, from there population growth rates fall more or less steadily as
the level of development rises.

Thus, we see that it is during Stage 3 that population growth begins to
slow sufficiently for the quality of social services to start to improve. This
general improvement in social services can in turn serve to enhance the economic
growth potential of the Stage 3 countries.

Conclusion to Part II

As has been shown, the 1970s were a period of slow GDP growth in the
developed countries even before the recession of the 1980s. At the same time
growth and development continued in the less developed countries. This
increased the overall complexity of the world economy, and began to shift the
balances of the world economy in unforeseen ways, as the number of countries
that could be classified as "developed" expanded.

If social development in fact precedes economic development, then the
1981 World Bank figures for life expectation suggest that a number of developing
countries are likely to become even more important economically than previously
imagined. Moreover, several of these countries are not just unusually strong in

44

social development -- as had been the case with Hong Kong and Singapore when they were first classified as Newly Industrialising Countries -- but they are also countries with very large populations, representing 30% of 1981's world population. These countries have the potential, therefore, to contribute to a significant realignment of the world economy, even more dramatic than the experiences of the past decade. It is a realignment which is likely to put an enormous strain on nearly all of our Post-World War II assumptions about the world economy, as a larger number of countries compete for what had been the economic priviledges of the few.

PART III: EXTRAPOLATING THE DOUBLE-S CURVE

One senses in all of this data that we have reached the boundaries of one kind of a world system, and the developing countries are now in the process of filling in the territory that has been defined. It is a system that can be defined as one complete Double-S Curve marking the movement from self-contained agricultural societies to inter-locking industrial societies based on mass consumption. Moreover, within this system, the process that resulted in the first definition of the boundaries is one which took considerably more time than the present process of filing in the territory. Thus, we are shifting more and more rapidly from a system based on a few highly developed countries which dominate, to a system where there is a large number of well-developed countries among whom dominance will become harder to establish. It is a more pluralistic world, and a more sophisticated world.

25.

Figure 1⁄4 seeks to incorporate the model of the Double-S Curve into a

broader framework of ideas designed to help us hypothesize the nature of the

next world system. As such, it first generalises the nature of the curve and

adds four elements not previously included in our graphic representation. It

also assumes that it is not just the developing countries which develop, but

expects that mature societies change as well. Therefore, in the following sec-

tion we will be describing the four new elements of the model, and showing how

they have affected the definition of a second curve representing the growth of

mature societies.

Four New Elements

The four new elements appearing with the extrapolated Double-S Curve

are: 1) ideas and beliefs, 2) population growth, 3) technologies of resource

exploitation, and 4) the natural resource base. These are in constant interac-

tion with the Double-S Curve and both shape and are shaped by its progress.

Of the four elements, the natural resource base is the most fundamen-

25

tal. In Figure 1⁄4, it is represented as finite and constant, something which

cannot grow or change in the way that every other aspect of the system can do.

In this sense, it is the final arbiter, the element to which all others must be

reconciled.

However, despite its finite and constant nature, the natural resource

base can be artificially expanded by improved technologies of exploitation.

Thus, for example, although there is a finite amount of oil, our ability to

recover and make use of that oil acts to expand the resource base.
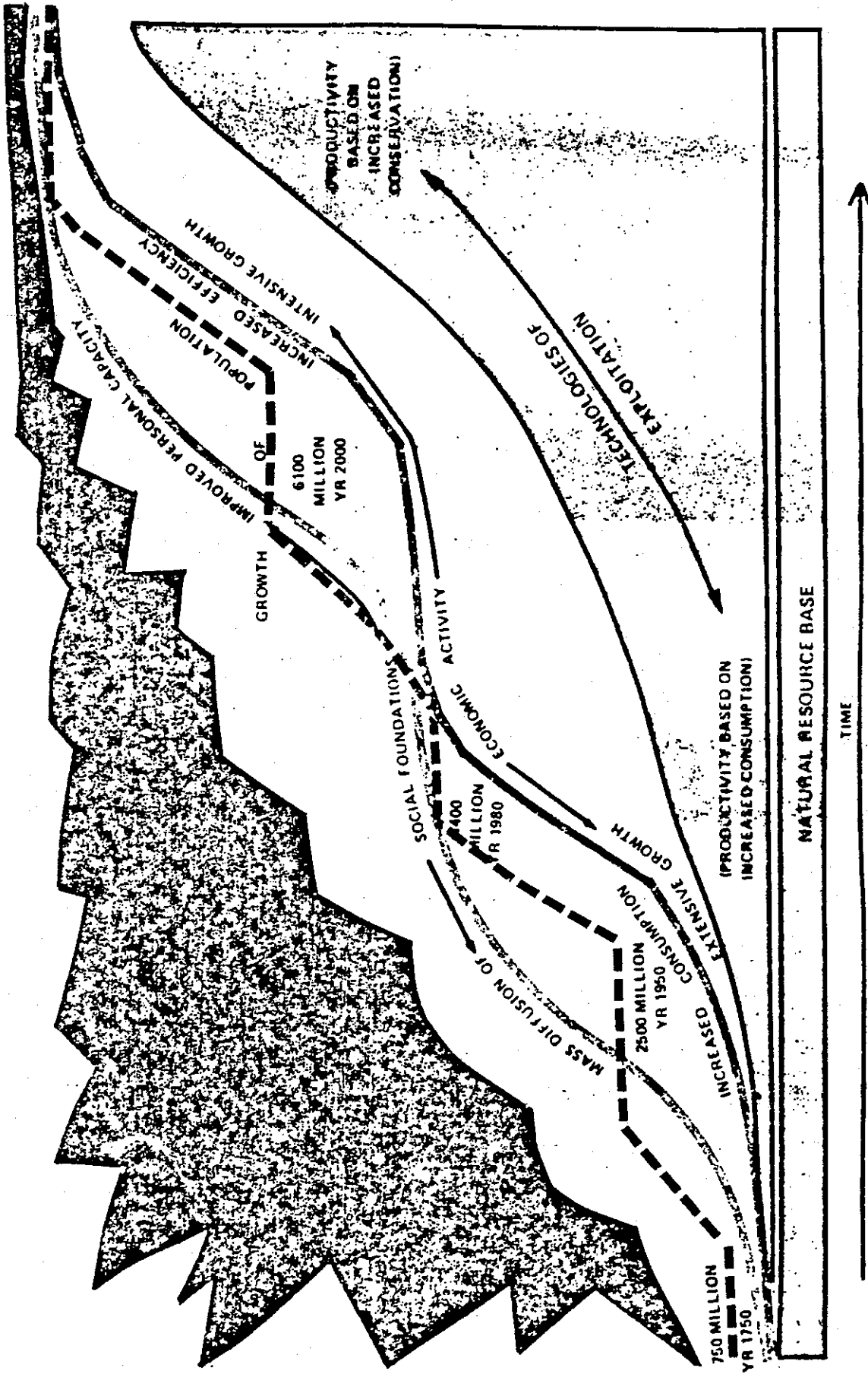
+6

FIG. 25

EXTRAPOLATING THE DOUBLE - S CURVE

TIME

NATURAL RESOURCE BASE

(PRODUCTIVITY BASED ON INCREASED CONSUMPTION)

TECHNOLOGIES OF EXPLOITATION

INCREASED EXTENSIVE GROWTH

MASS DIFFUSION OF ECONOMIC ACTIVITY

SOCIAL FOUNDATIONS

GROWTH OF POPULATION

INCREASED EFFICIENCY INTENSIVE GROWTH

IMPROVED PERSONAL CAPACITY

(PRODUCTIVITY BASED ON INCREASED CONSERVATION)

750 MILLION YR 1750

2500 MILLION YR 1950

400 MILLION R 1980

6100 MILLION YR 2000

47

25

According to Figure 14, these technologies of exploitation will have an increasing importance in the next Double-S Curve, largely due to two pressures: 1) a growing world population and 2) rising levels of living among all countries. These two factors will increase our demands on the natural resource base far beyond anything we have so far seen. These demands will strain not just the availability of tradable commodities, but also the ecological fabric of the world.

Our ability to respond to these pressures cannot be automatically assumed. Rather, it will be conditioned by the ideas and beliefs we hold. Cultural values, intellectual fashions, policies, political rivalries and basic emotional assumptions about the nature of man, society and the natural world will all shape our responses and ambitions. For that reason, the boundary around ideas and beliefs is shown in Figure 14 to be a jagged line -- denoting thereby a force that can either encourage or delay the progression of social and economic development.

The Generalized Curve

Under the first, simple Double-S Curve, we noted that while social progress occurred gradually, economic progress only took place once a certain degree of social achievement had been made. However, having noted that dualistic progression, we have then needed to define more precisely the difference between the social and the economic indicators in order to generalise the Double-S Curve into a second, more futuristic curve.

For this purpose, we have listed all the 1970 UNRISD indicators

according to their graphic behaviour when plotted against life expectation. (See

Figures 15, 16, 17.) From this listing, we have looked for the qualitative dif-
(26 27 28)

ferences between the "social", or gradually-developed indicators, and the

"economic" indicators, which showed slow then rapid growth. In doing so, we

have classified the indicators under several broad headings, from which the

qualitative differences between the social and economic indicators have become

more apparent. (See Figure 18.)
(29)

What has become clear in comparing the two lists of indicators, is that

the social indicators all describe changes in personal condition. This is

clearly the case with the health and education indicators, which have so far

proven to be the strongest factors in economic growth as described in Part I of

this paper. However, it is also the case with the last two social indicators:

Men in Agriculture, and Salaried and Wage Earners, which are mirror images of

each other graphically. (See Figure 15.) These two indicators have been labelled
(26)

"Urbanisation," but what they represent is the movement of people away from

farming to more varied, non-farming work. Thus, one can see the urbanisation

indicators as representing a growing number of individual decisions to move

towards perceived greater opportunity.

What we see in the social indicators, then, is that the health and edu-

cation indicators represent changes in individuals' capacity to accomplish.

While the urbanisation indicators represent the individual's search for oppor-

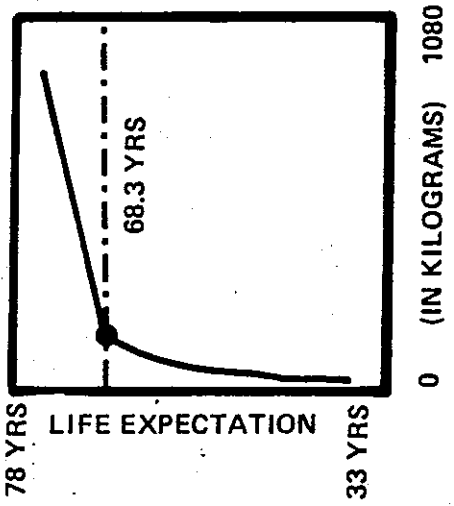tunities where an improved capacity might be used. Moreover, all social indica-

LIFE EXPECTATION AND SIX ECONOMIC INDICATORS
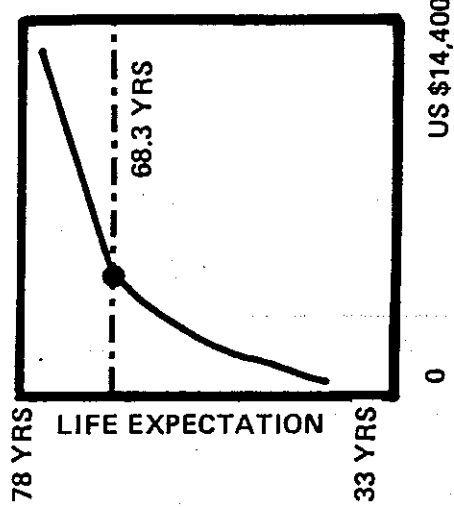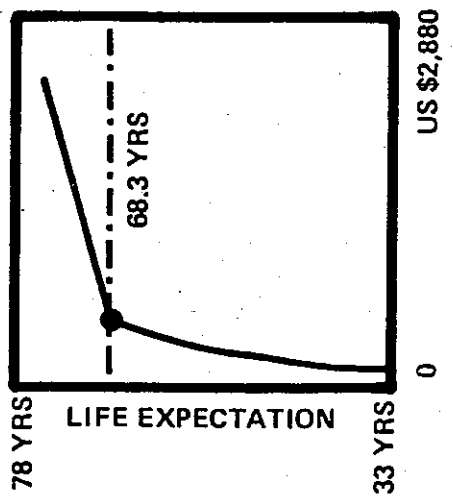BEST FITTING LINES 1970 DISTRIBUTION DATA

ALL US $ ARE IN 1970 PRICES

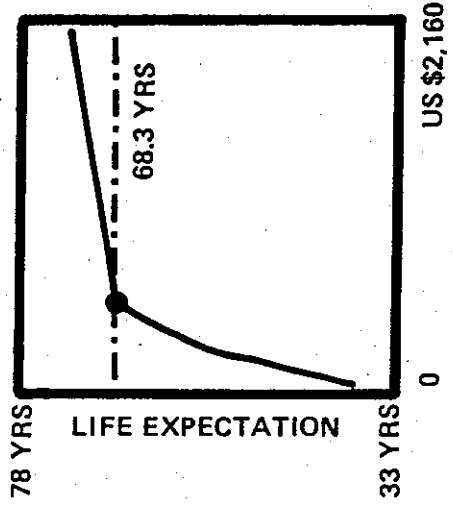68.3 YRS

MANUFACTURING PRODUCTION PER PERSON

(KILOGRAMS COAL EQUIV.)

PER CAPITA ENERGY CONSUMPTION

PER CAPITA STEEL CONSUMPTION

(IN KILOGRAMS)

PER CAPITA INVESTMENT

AGRICULTURAL PRODUCTION PER MALE WORKER

PER CAPITA FOREIGN TRADE

BJH — 2/85

LIFE EXPECTATION AND SIX SOCIAL INDICATORS

BEST FITTING LINES 1970 DISTRIBUTION DATA

Top-left chart:
78 YRS — LIFE EXPECTATION — 33 YRS
68.3 YRS
0% (POPULATION 9–15 YRS) 90%
COMBINED SCHOOL ENROLLMENT

Top-middle chart:
78 YRS — LIFE EXPECTATION — 33 YRS
68.3 YRS
0% (TOTAL POP.) 99%
LITERATE POPULATION

Top-right chart:
78 YRS — LIFE EXPECTATION — 33 YRS
68.3 YRS
0% (WORKING POPULATION) 99%
SALARIED & WAGE EARNERS

Bottom-left chart:
78 YRS — LIFE EXPECTATION — 33 YRS
68.3 YRS
0 (DEATHS PER 1000 BIRTHS) 180
INFANT MORTALITY

Bottom-middle chart:
78 YRS — LIFE EXPECTATION — 33 YRS
68.3 YRS
0% (MALE LABOUR) 99%
MEN IN AGRICULTURE

Bottom-right chart:
78 YRS — LIFE EXPECTATION — 33 YRS
68.3 YRS
0% (TOTAL POPULATION) 99%
ACCESS TO A WATER SUPPLY

BJH – 2/85

S1

BEST FITTING LINES 1970 DISTRIBUTION DATA

78 YRS

LIFE EXPECTATION

33 YRS

68.3 YRS.

0 (GRAMS PER CAPITA PER DAY) 108
ANIMAL PROTEIN CONSUMPTION

68.3 YRS.

0 (% OF WORKING POPULATION) 22%
PROFESSIONAL & TECHNICAL WORKERS

68.3 YRS.

0 (PER 1,000 POPULATION) 720
TELEVISION RECEIVERS

68.3 YRS.

0 (PER 100,000 POPULATION) 90,000
TELEPHONES

68.3 YRS.
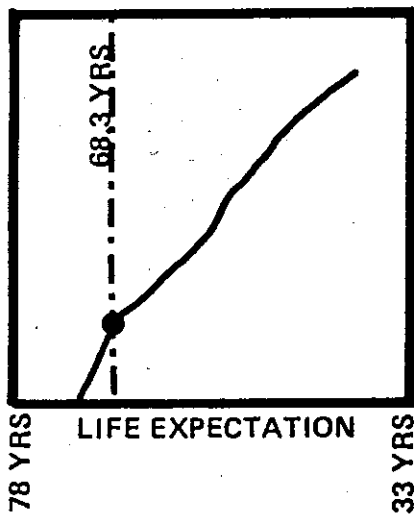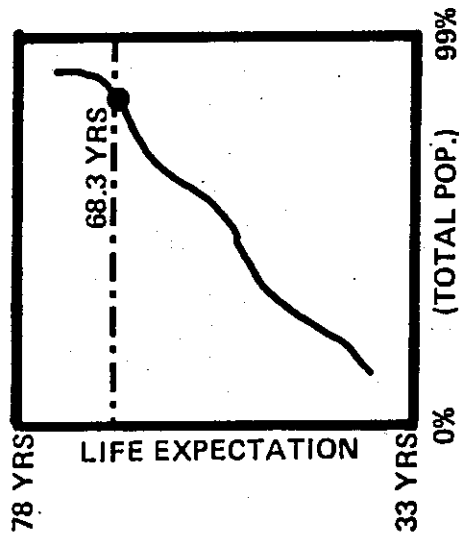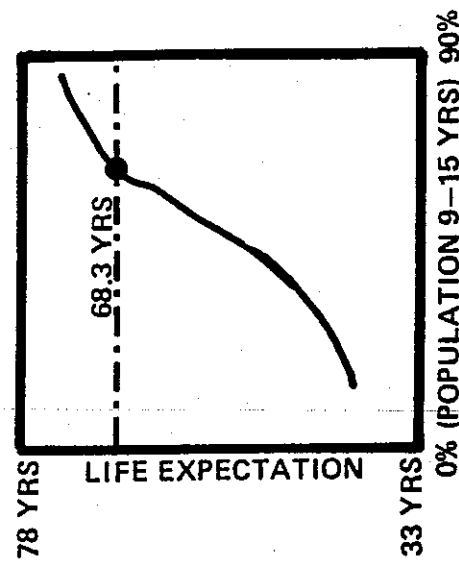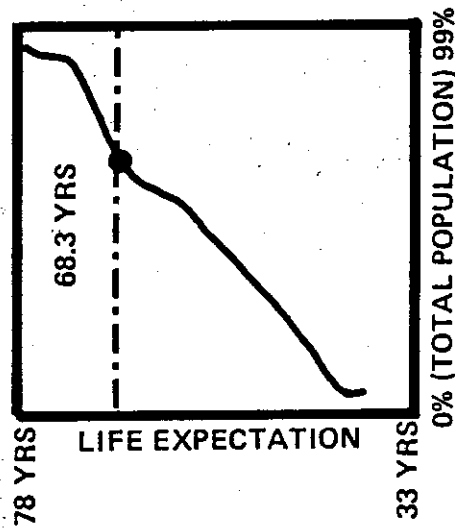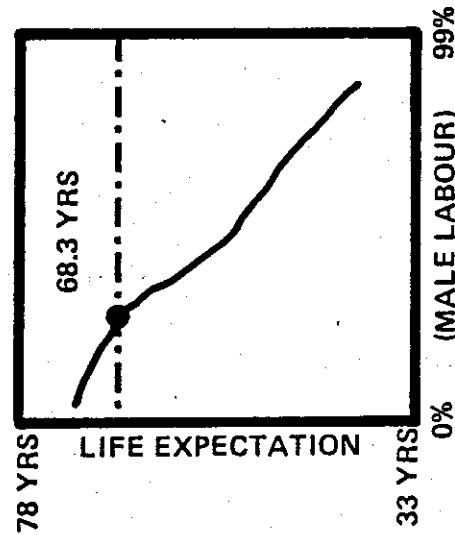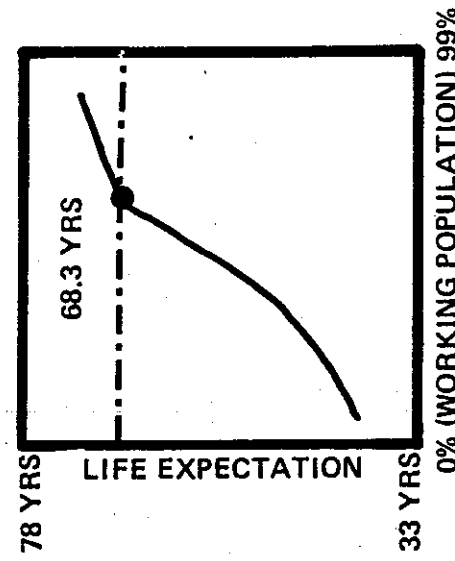
0 (PER 1,000 POPULATION) 720
NEWSPAPERS DAILY CIRCULATION

78 YRS

LIFE EXPECTATION

33 YRS

BJH — 2/85

52

GRAPHIC BEHAVIOUR OF 1970 UNRISD INDICATORS AGAINST LIFE EXPECTATION

SOCIAL INDICATORS

HEALTH

- LIFE EXPECTATION*

- INFANT MORTALITY

- ACCESS TO A WATER SUPPLY

EDUCATION

- LITERACY

- COMBINED SCHOOL ENROLLMENT

URBANISATION

- MEN IN AGRICULTURE AS
  % OF WORKING MEN

- SALARIED AND WAGE EARNERS
  AS % OF WORKING POPULATION

*ALL INDICATORS WERE ALSO
PLOTTED AGAINST GDP PER
CAPITA, WHERE LIFE EXPECTA-
TION FOLLOWED THE PATTERN
OF THE OTHER "DIAGONAL"
INDICATORS.

ECONOMIC AND INTERMEDIATE INDICATORS

DIRECT PERSONAL CONSUMPTION

- DAILY NEWSPAPERS IN CIRCULATION

- TELEPHONES PER 100,000 POPULATION

- TELEVISIONS PER 1,000 POPULATION

- ANIMAL PROTEIN CONSUMPTION PER
  CAPITA

CONSUMPTION BY ECONOMY AT LARGE

- INVESTMENT PER CAPITA

- FOREIGN TRADE PER CAPITA

- STEEL CONSUMPTION PER CAPITA

- ENERGY CONSUMPTION PER CAPITA

PRODUCTION AND PRODUCTIVITY

- AGRICULTURAL PRODUCTION PER MAN
  IN AGRICULTURE

- MANUFACTURING PRODUCTION PER
  PERSON IN MANUFACTURING**

- PROFESSIONAL AND TECHNICAL WORKERS
  AS % OF WORKING POPULATION**

**INDICATORS WHICH CURVED MODERATELY,
RATHER THAN SHARPLY.

BJH — 2/85

tors are of the percentage of the population sharing the social change. As development occurs, a larger percentage of the population acquires an increased capacity and greater opportunity for personal accomplishment. The social indicators thus represent the mass diffusion of improved personal capacity.

By way of contrast, what we notice about the economic and intermediate indicators is that they are all measures of consumption or production. In that sense, they are those aspects of a society which are created in order to respond to the demands of individuals whose capacities and opportunities have changed.

Contrasting the Two Curves

It is possible to split Figure 25, the Extrapolated Double-S Curve, into two time periods: 1750 to the present, and the present to an unknown point in the future. The first Double-S Curve represents the past. It is the "known world" -- what we can see of ourselves and of our world so far. The second curve represents the future. It is what awaits us -- what, in effect, we will be creating next. Between the two curves is a plateau that marks the shift between the past and the future and represents the present condition of the late Stage 4 countries. It is, in a sense, a "narrow pass," since the ability of the Stage 4 countres to negotiate this transition will affect the whole world economy.

This plateau, however, also represents the cross-over point of two very different kinds of world economic systems. The first system is one based on the movement from traditional societies to mass consumption societies. The second

54

25

system, however, as defined by Figure 25, is one where increased pressure on the

natural resource base caused by population growth and rising standards of

living, forces economic growth to be based, not merely on increased consumption,

as in the past, but on increased efficiency in the use of natural resources. It

is a movement from extensive growth, to intensive growth.

It is also tempting to argue that the next Double-S Curve is one which

will be strongly influenced by the technologies of exploitation. Efficiency

will become the dominant value. Thus, for example, the ethical dilemmas posed

by biological engineering may more and more give way to some abstract notion of

most efficient application. Similarly, coal mining communities in Britain may

find themselves being forced to accept the closure of "uneconomic" pits,

regardless of the social disruption caused.

It is also possible that as the present, Mature Societies begin to make

the transition into the resource-efficient Double-S Curve they will seek to

impose conservation and ecological standards on those countries still making the

transition from traditional to mass consumption societies. This will, very

likely, lead to considerable tension. The era of mass consumption is, in a

sense, the era of rewards and it is unlikely that many countries will want to

skip that stage and go straight to a stage of efficiency and conservation.

One might also see the next Double-S Curve as one in which education

and skill will be even more important than they are now. While the last

Double-S Curve contained places for people at all levels of education and skill,

one suspects that in the next era, unskilled and untrained people will be increasingly left out of the system. Similarly, one is tempted to postulate that the equivalent of the urbanisation process of the last curve will be found in a person's ability and willingness to change jobs and skills more quickly than in the past. Whereas in the last curve, opportunity was often equated with a physical mobility, it might well be that the next curve's opportunities will be based less on the ability to change places, than on the ability to change skills.

It is also likely, particularly in the early years, that with this increased emphasis on improved technologies of exploitation, the importance of basic and applied research is likely to grow. Such research is the creation of knowledge that eventually becomes diffused through the society in various applications, percolating finally to the levels where individuals are learning new skills and working at new tasks.

CONCLUSION

In concluding this paper we return to our first two questions:
1- what accounts for variations in development and rates of economic growth?
and 2- How can development and growth rates be predicted?

While the data are still limited, it would seem that part of the variations in development and rates of growth can be explained by the degree to which a country has established strong social foundations for economic growth. Health and education of the population seem to be particularly important factors

SC

in defining the preconditions for rapid rates of economic development in

developing countries. In Mature Societies, the nature of the social foundations

for a second Double-S Curve is as yet only partially defined although here, too,
and research
education at least still seems critical.

This relationship between social foundations and GDP, also allows us to

project a much higher potential for economic accomplishment than is generally

assumed for developing countries. This can be seen in the large numbers of

"developing" countries which in the 1982 statistics showed life expectation

rates of "developed" societies. This observation in turn leads to the conclu-

sion that the balance between developed and developing economies is shifting.

More countries and more populous countries are achieving high levels of develop-

ment on social indicators, which would define the potential for a significant

and substantial economic force in the world.

In part because of the pressure coming from developing countries with

improved social bases, the developed world is facing a second Double-S Curve. In

effect, this is a period for mature societies of redevelopment, a radical

rewriting of the structures of social and economic life.

To what extent the social indicators of success for the decade from

1970 to 1980 can also operate as indicators of economic growth in future decades

remains to be seen. However, the social foundations of an economy would seem to

be at least as important as many of the standard economic variables, and would

certainly warrant further research towards identifying and using such social

indicators, both for the developing and developed countries.

411028/256

57