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POPULATION GROWTH:  
CURRENT ISSUES AND STRATEGIES

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### Abstract

Waning public concern with world population issues can be traced to rosy extrapolations of recent fertility declines and to newly expressed skepticism by some scholars that the net costs of population growth for developing countries are serious. The latest UN population assessments, however, give rather little basis for complacency in terms of numerical growth, while the weight of evidence on economic-demographic relationships leaves no doubt of the strong disadvantages of high fertility for poor countries. Efforts to moderate fertility can of course also be costly, but the experiences of countries that have shown rapid declines provide a rich store of strategic insights for wise policy choice.

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Few public issues are as dead as last year's crisis. From a high point some 10 to 15 years ago, intellectual concern about population growth has steadily waned to a position where it falls now somewhere between ocean mining and acid rain. The massive and continuing global transformation wrought by modern demographic change receives the same scant and short-lived attention as a newfound "firewood crisis" or the disappearance of the Peruvian anchovies.

Why is this? One reason is simple boredom--or, related to it, the chronic low-grade depression brought on by repeated economic and ecological alarms. Each alarm has its day, but life goes on. Sometimes, the anchovies return. In the case of population growth, the highly colored language used by many early publicists of the issue did the field a disservice by joining it to the fast-paced, faddish company of media crises. A population "explosion," for example, fairly describes the phenomenon of contemporary growth seen against past millennia of near stationarity, but is a poor depiction of the short-term reality--year-by-year increases of 2 percent or so in aggregate size.

But, if boredom were the only reason for neglect, population issues could fade from the spotlight and still continue high on the public agenda of national governments and international agencies. One purpose of such institutions is precisely to embody long-run social commitments so as to weather transitory shifts in attention and policy focus. More disturbing would be a neglect that is a consequence of shallowness of the commitment itself. For population, such shallowness may well be the case--reflecting either belief in the early attainment of a low-growth-rate demographic regime, drawn from a

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rosy interpretation of recent trends, or the view that rapid population growth is not after all a serious world problem. The first would seem to be for the most part wishful thinking; the second, if more than political reaction to fit the times, suggests an extraordinary degree of analytical slackness in the intellectual foundation of a major social program.

In this essay we attempt a brief review, from first principles, of the nature and scale of the problem of modern population growth and, on the basis of past experience of individual countries, comment on strategic choices for population policy in the future. We start by assembling the latest UN data on the magnitude of current and expected population growth--familiar material to demographers but increasingly ignored in popular discussions of fertility decline. To properly interpret the significance of this growth would call for exploring its intricate ties to social and economic change, a task far beyond the compass of a brief essay. Here we simply note the major claimed benefits and costs of population growth and remark on the balance, as we see it, between them. Public policy in this area, of course, should depend not only on this balance but on the costliness and effectiveness of the policy itself, however roughly that must be judged. While the unique conditions of each country require local analysis of policy alternatives, the experience of countries that have rapidly been moving toward demographic modernity is likely to be the main source of policy insight.

#### Demographic Prospects for the Next Two Decades

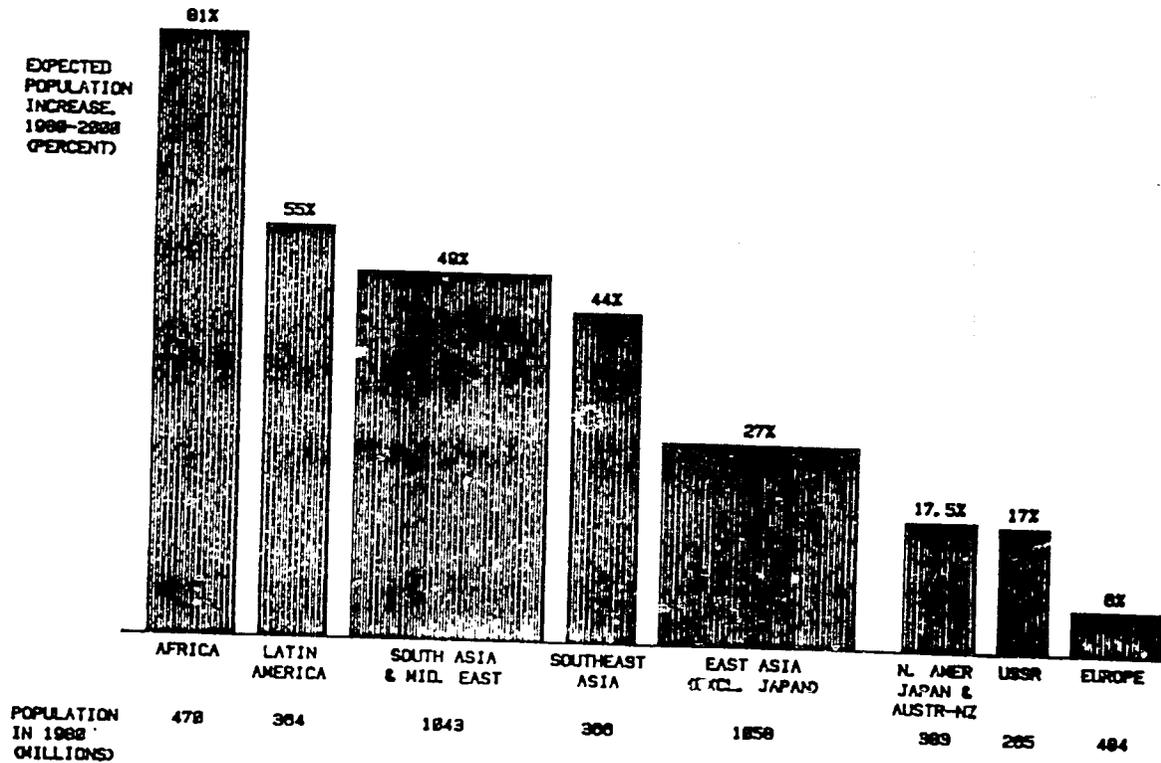
Members of the generation born around 1930, who can reasonably hope to

outlive the present century, will have witnessed during their lives a trebling of the world's population. From a 1981 total of 4.5 billion, the United Nations expects the world to reach 6.1 billion inhabitants in 2000 (in its medium variant assessment made in 1980). The inertia of this growth, built into the age distribution, will carry it forward well into the next century--a population exceeding 9 billion by 2050 would be a plausible forecast.

The regional concentration of population increase is shown in Figure 1, based on the UN medium projections for 1980-2000 (United Nations, 1981). The width of each rectangle in the figure represents the 1980 population of the region; the height, its expected proportional increase; and the area, its expected absolute increase. The contrast between the two extremes, Africa and Europe, is the most dramatic--each starting from about the same size in 1980, but Africa likely to add 13 persons for each one added in Europe. More significant, perhaps, is the contrast between the two regional giants, South Asia (here including the Middle East) and East Asia (excluding Japan), each containing about a billion people in 1980. South Asia is still clearly in the high-growth category, East Asia not far from the growth rate of the developed world. Dominating this latter contrast are, of course, the differing demographic trends of India and China, which we examine further below.

The UN's most recent assessment of the demographic future does little to buttress the widespread popular belief that population growth is rapidly slowing down, the expansion running out of steam. Overall, the world's growth rate seems to have peaked at about 2.0 percent per year in the 1960s and by now has probably dropped to 1.7 percent. The yearly absolute increase in population is continuing to rise, however. In 1980, some 75 million people were added. In the UN's medium projection, the point of inflexion of the

FIG. 1: WORLD POPULATION IN 1988 AND EXPECTED INCREASE, 1988-2000, BY MAJOR REGION



SOURCE: UNITED NATIONS (1981)

trajectory will not be reached until the late 1990s, when the annual increase will be close to 90 million.

The expectation of a substantial slowdown in population growth, however, is based less on trends in natural increase than on recent evidence of fertility decline. There is a temptation to examine country experience here without weighting by population size, so that a significant decline in, say, Singapore or Jamaica tends to offset in the public mind the lack of one in Nigeria or Pakistan. But the data, mainly from the 1970-71 round of censuses and the sample surveys of the mid-1970s (in particular, the World Fertility Survey), provide convincing evidence of some decrease in fertility in virtually all the large developing countries.

The latest UN birth rate data for countries with 1980 populations exceeding 50 million (9 developing and 7 industrial countries) are set out in Table 1. The 16 countries make up three-quarters of the world population. The birth rate for the world as a whole, given in the last row of the table, is estimated to have fallen by slightly below 10 percent in the 1960s and slightly above 10 percent in the 1970s, to a level now of about 28 births per thousand population per year. This global average is strongly influenced by the dramatic downward trend in China--somewhat earlier and recently much steeper than that of the other large developing countries--and to a lesser extent also by declines in the industrial countries. The average (unweighted) decline in the eight large developing countries other than China was 4.1 percent from 1955/60 to 1965/70 and 10.5 percent from 1965/70 to 1975/80.

Two significant regional trends in world fertility are not fully evident in Table 1: the birth rate declines spreading in East and Southeast Asia and the recent appearance of quite steep declines in Latin America. In the former

Table 1. Population Size, Birth Rates, and Birth Rate Declines for Countries with 1980 Populations Exceeding 50 Millions.

Country	1980 Population (million)	Average Annual Birth Rate (x1000)			Change in Birth Rate (percent)	
		1955-60	1965-70	1975-80	1955-60 to 1965-70	1965-70 to 1975-80
Developing Countries						
China	995	37.6	32.4	21.3	-13.8	-34.3
India	684	44.0	42.0	35.3	-4.5	-16.0
Indonesia	148	47.1	43.0	33.6	-8.7	-21.9
Brazil	122	43.1	38.8	33.3	-10.0	-14.2
Bangladesh	88	50.3	49.7	46.8	-1.2	-5.8
Pakistan	87	47.2	46.8	43.1	-0.8	-7.9
Nigeria	77	52.1	51.0	49.8	-2.1	-2.4
Mexico	70	45.7	43.9	38.3	-3.9	-12.8
Vietnam	54	41.9	41.4	40.1	-1.2	-3.1
Industrial Countries						
USSR	265	25.3	17.6	18.3	-30.4	+4.0
USA	223	24.8	18.3	16.3	-26.2	-10.9
Japan	117	18.1	17.8	15.1	-1.7	-15.2
FR Germany	61	16.5	16.6	9.8	+0.6	-41.0
Italy	57	18.0	18.3	13.3	+1.7	-27.3
UK	56	16.4	17.6	12.0	+7.3	-31.8
France	54	18.4	17.1	13.8	-7.1	-19.3
World Total						
	4432	36.1	33.1	28.5	-8.3	-13.9

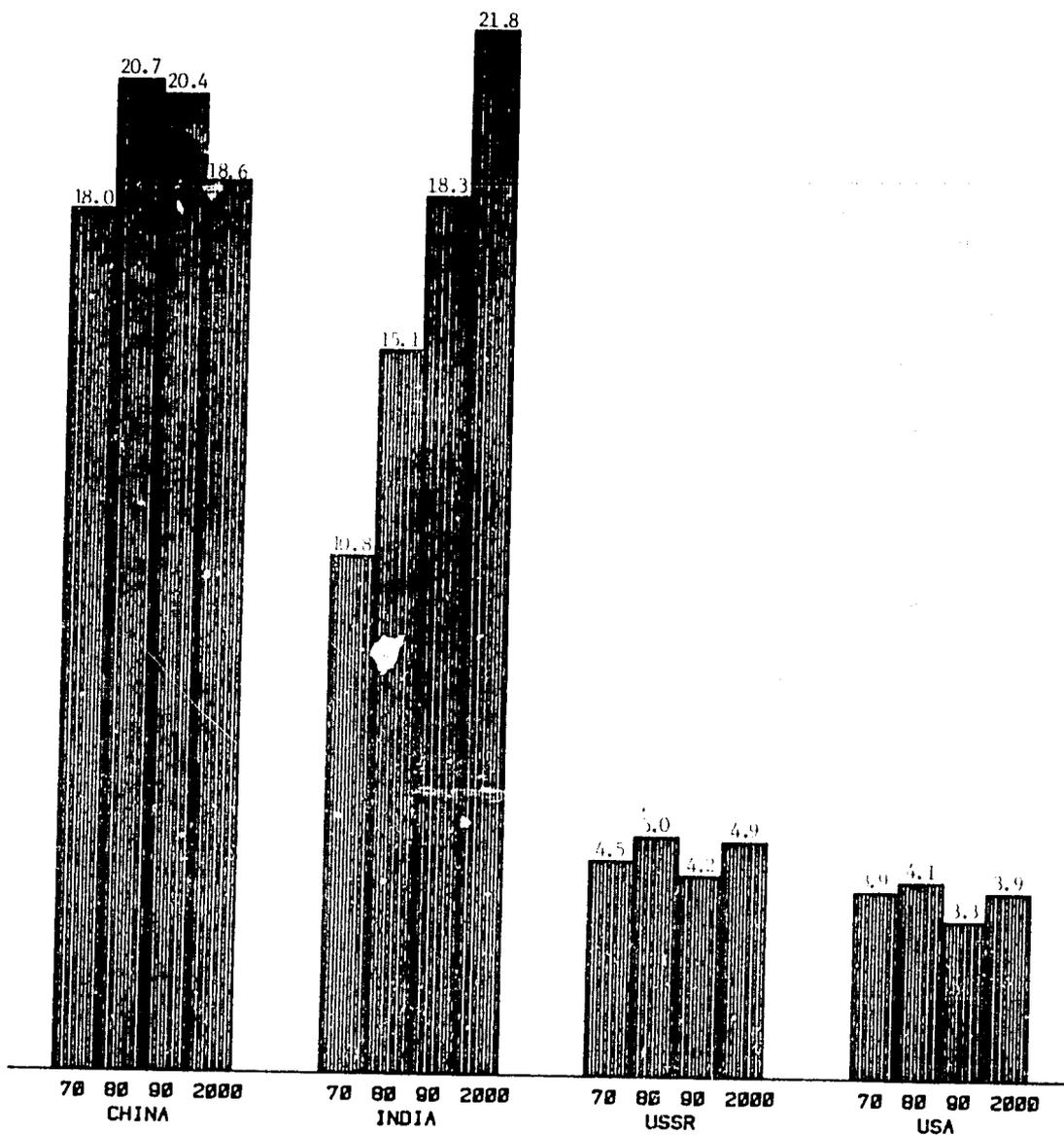
Source: United Nations (1981)

region, in addition to China, falling birth rates are being recorded in South Korea, Taiwan, the Philippines, Indonesia, Malaysia, and Thailand; in the latter, most notably in Brazil, Mexico, and Colombia. Identifying the determinants of fertility trends in these two regions is clearly important in making any long-term demographic forecast for the world.

The most visible manifestation of high fertility comes as societies try to absorb successively larger cohorts of young people into their economies. The translation from the economically inert notion of a birth rate to the potentially critical issue of labor force entry is as striking as it is simple. The number of people who will be seeking such entry around the year 2000 is determined essentially by births occurring now--say, over 1980-84. Figure 2 illustrates the consequences of disparate fertility trends in the four largest countries over the past three decades, under the simplifying assumption that the number of potential labor force entrants in a given year is one fifth of the population then in the age group 15-19 years. (The chart therefore ignores such structural changes as the increase in female labor force participation in the United States or the effects of changing rates of school enrollment.) It shows, for example, that within 20 years India's planners will have to cope with larger pools of labor force entrants than China's--an extraordinary reversal that will occur abruptly in the 1990s as China's birth rate decline of the 1970s makes itself felt in the economy. India's situation is, of course, the more typical among developing countries.

Corresponding to a present world birth rate of around 28 per thousand is a death rate of about 11 per thousand--or, in more convenient terms, life expectancy at birth of 58 years. Life expectancy in the developing countries has risen from about 35 years in 1930 to some 56 years in 1980 (51 years in

FIG. 2: ANNUAL POOL OF LABOR FORCE ENTRANTS FOR SELECTED COUNTRIES, 1970-2000\* (MILLIONS)



\* ONE FIFTH OF ESTIMATED POPULATION AGED 15-19 YEARS IN GIVEN YEAR

SOURCE: UNITED NATIONS (1980)

the developing world excluding China). There is wide current concern, however, that the era of rapid mortality decline may have at least temporarily come to an end. The optimism that led a 1962 UN report to declare "It may not be too much to hope for that, within a decade or two, the vast majority of the world's people will have an expectation of life at birth 65 years or more," was unjustified, and few would now expect such a state to be achieved in the near future. (See Gwatkin, 1980; the UN report referred to is United Nations, 1963.)

The estimates of demographic rates we have been relying on above are by no means incontestable. Between the UN's 1978 and 1980 assessments, for example, China's birth rate figure for 1970-75 was raised from 24.0 to 29.5--an increase of more than 20 million in the implied number of births during this period. In a number of other countries, India and Indonesia among them, early returns from the 1980-81 round of censuses show populations larger than had been expected on the basis of previously estimated birth and death rates; so further adjustments in these estimates are likely to be required.

But even with accurate statistics, demographic prediction is a highly fallible art. What is needed to give scientific substance to assumptions about future trends in fertility and mortality is an understanding of the reasons for observed changes in vital rates in the past. For mortality, the reasons for the most part are cut and dried. The effects of improving economic conditions, better hygiene and sanitation, application of new medical knowledge, and expansion of public health services can, in theory, be separated out and quantified by detailed cause-of-death analysis (see, for example, Preston, 1976). It is the paucity of cause-of-death data, past and present, rather than any fundamental conceptual conflict that accounts for most of the re-

maintaining disagreement. In the case of fertility, however, similar efforts to explain past trends lead immediately into some areas of major controversy. Before venturing there, we take up the second suggested basis for the fading concern with population growth--that on balance it doesn't matter much.

### Pros and Cons of Population Growth

What is the balance of costs and benefits associated with population growth? Any answer must be so hedged about with assumptions and conditions that it is not surprising to find continuing argument on the subject. Costs and benefits to whom? Under whose value premises? Over how long a time period? With what resource endowments? In what kind of institutional and cultural setting? Even the comparatively circumscribed issue of the impact of population growth on a nation's socioeconomic development seems to have few questions that both are settled and effectively remain so--not only because answers generally have to be country-specific and contingent on an agreed content of "development," but also because some important technical questions about population-development interrelations are themselves unresolved.

But there is no justification for an agnostic stance here. The questions, both technical and ideological, are clearly amenable to analysis; orders of magnitude for the relationships at issue can nearly always be found; radical outliers in conclusions either dissolve under analytical scrutiny or can be pushed back to extreme, sometimes bizarre, ethical or ideological positions.

We would summarize the broad conclusions of the majority of researchers

on the issue as follows: Under the conditions existing in most poor countries, rapid population growth slows, sometimes drastically, the absorption of the bulk of the population into the modern, high-productivity economy, while any demographic effects in stimulating innovation or investment call at most for a moderate pace of growth; rapid growth hinders the capacity of poor countries to cope effectively with large changes in their natural or economic environments; and, in extreme cases, it constricts what development can hope to achieve for them. It is not the place of this essay to assemble the evidence supporting these statements, but a brief gloss on each is called for.

(1) Rapid population growth imposes obvious costs in investment needed to maintain capital per head. Such investment is at the expense of consumption or of adding to capital per worker and, thus, to labor productivity. At the family level, this effect is compensated by the strong values attaching to children, assuming they are "wanted." Looking just at the economic dimension, the demands of a larger family size provide a strong encouragement to increase family earnings both on the part of parents and by the children themselves. At the aggregate level, however, the net effects on other families--on balance likely to be adverse in most poor-country settings (e.g., through depressed wage rates or over-extended infrastructure) must be added in. Certainly the prospect of continuing large increases in labor force entrants that now confronts so many countries is not counted an economic blessing by the governments affected.

But can such labor force increases act as a stimulus to economic performance, shaking the economy out of an institutional or technological rut? It is often held that population growth induces innovation, stimulates greater private investment, yields scale economies in provision of economic and social

infrastructure, and so on. In some cases such benefits may well accrue, but there is nothing to suggest that to capture them requires anything close to the 2-3 percent annual rates of increase common in the contemporary world. (The demographic stimulus seen by North and Thomas, 1970, as contributing to profound economic change in fifteenth century Europe or by Hicks, 1939:302, as a factor behind the Industrial Revolution was in each case below 1 percent per year.) Moreover, these benefits may in fact be more effectively captured by explicit measures entirely outside the demographic sphere. Since development has become a self-conscious process, governments have acquired all kinds of direct and indirect means of promoting innovation, raising investment rates, or reaping economies of scale, short-cutting the drawn-out historical process. A stranger pronatalist economic argument, newly given popular currency by Simon (1981), is that more people mean more geniuses, more spontaneous creation of useful knowledge, as if the poverty of the Third World was not itself the reason for its technological dependency in the face of already preponderant demographic weight.

The significance of a demographic drag on economic performance depends, of course, on the level of that performance. In the dynamic economies of East Asia, with national incomes increasing by 8-10 percent annually, population growth of 2 percent or so is a comparatively minor issue. But most of the rest of the developing world can take no such comfort. Using the World Bank's categories, per capita income growth in the 1970s was estimated at 2.8 percent per year in the middle-income developing countries, and 1.6 percent in the low-income countries (excluding China). In low-income sub-Saharan Africa, per capita income actually fell over the decade.

(2) In addition to draining off investment to train and equip an ex-

panding labor force, rapid population growth imposes considerable new organizational demands on a society. Social structure is not neutral with respect to scale: doubling population size in a generation, and city size in sometimes a decade, keeps a country's political and administrative apparatus perpetually off-balance. External shocks such as sudden shifts in resource prices, which should elicit concerted public and private sector efforts to redirect technology and manpower in accord with the changed market conditions, may become major economic calamities. Effective actions aimed at halting economically or aesthetically damaging processes of ecological degradation (for example, those making for the impending extinction of many plant and animal species), which equally call for organizational competence, may be simply beyond reach.

The connections here are complicated by the likelihood (which we discuss below) that weakness in organizational competence is itself part of the reason for continued rapid population growth. Mutual causation of this kind bedevils the analyst's task in the entire field. Moreover, the connections may be disguised: governments typically respond to social disorganization by deploying the technology of political control, providing at least a veneer of stability. It is plausible that rapid demographic change, by threatening social stability, is a not infrequent contributory factor behind the emergence of military governments in the contemporary Third World.

Popular discussions of "population pressure" often seek to identify direct adverse effects on economic welfare of worsening population-natural resource ratios or to impute a demographic cause for any unhappy ecological outcome. Nearly always such arguments are slippery, however, since they skirt the critical intermediate issue of how a society organizes itself to respond

to resource and ecological problems. The current "firewood crisis" in many poor countries, to take an example mentioned earlier, is best seen not as a simple matter of population-induced deforestation but as a result of the failure of societal arrangements that elsewhere manage to maintain a common resource in the face of competing uses and users. The central issue to be explored is then the demographic contribution, if any, to that failure.

(3) In extreme cases, rapid population growth and the resulting absolute size of population constrict what is achievable by economic development in terms of individual wealth and amenity. Countries that have successfully attained the status of industrial economies are able to set about repairing the worst ravages of the industrialization process and creating the amenities that are increasingly in demand by their expanding middle classes. Sheer population density seems comparatively unimportant to the outcome of this endeavor—especially since wealth can buy access to the amenities of the rest of the world. Even if today's brand of international tourism turns out not to be open to the latecomers, simply because of their numbers, amenities less dependent on space and distance can presumably be designed. But it is surely more than mere failure of imagination that we should find it so difficult to foresee the emergence into post-industrial satiety, such as it is, of the massive populations of, say, South Asia or the by-then massive populations of Africa.

If the balance of costs and benefits of population growth is so evident, why is it apparently so easy to call the conclusion into question? Several reasons spring to mind. It may, for one, be a corollary of a belief that, rhetoric aside, there is rather little practical significance to any un-

weighted summing of numbers of people. To take an extreme case, if a nation's long-run economic policies in reality are designed to benefit a small group within the population, policy achievement is not to be measured by nationwide per capita averages. Less extreme assumptions with certain formal similarities are to be found in neoconservative entitlement theory. (The position has its analogy at the international level. Most countries that have attained a low-mortality, low-fertility regime combine economic strength with comparative demographic puniness--Hong Kong, for instance, has the same gross national product as Pakistan. Their natural interest lies in keeping economic weightings in and population weightings out of the international order.)

A different kind of reason for questioning the existence of substantial net costs of population growth is sometimes drawn from dubious attempts at modeling the economic-demographic system. By dint of constant exposure some analysts may delude themselves into actually believing the assumptions of neo-classical growth theory--an institution-free economic environment in which equilibrium expansion paths pose no maintenance problems and the "steady state" is one of uniform exponential growth of people and product. The disregard of scale effects somehow survives the transition from simple, elegant models in which the stability and efficiency properties of growth paths are explored to attempted depictions of real-world social and economic systems evolving over decades. In one widely publicized simulation exercise (see Simon, 1977), alternative fertility trajectories lead to population sizes after two centuries that differ by a factor of 20. Even if we ignore the hubris entailed in 200-year time horizons, such a difference could not fail to reflect utterly different patterns of socioeconomic institutions, with effects extending far beyond levels of fertility. Yet the same model is assumed to

characterize the economy in each case, and from it the conclusion is drawn that per capita income is relatively invariant to fertility. A finding more clearly built into the instrument of analysis is hard to imagine.

The relationships between population growth and socioeconomic change, although at first sight a subject ideally suited to formal simulation, have proved highly resistant to compelling modeling. The number of plausible relationships is very large, their empirical basis often cloudy. A complex model can of course be set down in short order. The problem is that a few "reasonable" adjustments in its assumptions, adding or deleting a feedback loop or two, can lead it to yield entirely different results. For these particular issues, formal modeling merely papers over our ignorance or exaggerates our biases.

Or, perhaps the simplest explanation, the shrill voices from the 1960s of those foreseeing imminent demographic catastrophe, even though now largely silenced, have damaged public hearing for serious analysis of population problems and policies. Presently predicted global population growth (for the moment admittedly rapid, but sure of eventual halting--with reasonable hope, in a century or so), it seems, can be tolerated and that is all that matters. In this view, possibilities that much lower rates of increase might be attainable and might yield substantial benefits on the development front and in non-economic spheres, do not warrant investigation.

#### Individual and Societal Fertility Interests

We could accept that rapid population growth imposes a whole variety of

burdens on a particular society, offset only to a slight degree by its positive features, and yet still conclude that little can or should be done about it. The intractability of population growth to public intervention is perhaps the most important lesson learned over the past several decades of concern with population. It may be that the costs, economic and noneconomic, entailed in any policy action that would be effective outweigh the gains to be reaped from its outcome. Such a calculation, quite aside from the intricate distributional judgments it would involve, can only be attempted from a basis of understanding what the feasible options for influencing demographic trends are. With little loss we can restrict a discussion of this to the issue of fertility change.

Over the long haul of human history, societies in a rough sense can be said to organize themselves to support a particular fertility regime appropriate to the resources, technologies, and mortality risks they face. Recruitment of new members, biologically required to be a matter for largely decentralized decision making, is too important a matter to be left wholly up to individual parents. As on virtually any major issue affecting its future welfare, a society intervenes in the demographic behavior of its members to preserve its interests--or the interests of the more powerful groups within it. When an issue such as this must be confronted routinely, routine responses are developed. In other words, some form of control over that particular domain of behavior becomes institutionalized in the society, embodied in the signals conveying social approbation or economic advantage (or their opposites) to individual members. (Realities, of course, do not quite admit of this abstraction of demography from the rest of the social and economic system. But the picture suffices for our purpose.)

What then happens when the situation is suddenly disrupted by new threats and opportunities--new technologies, much larger surviving birth cohorts, a rapidly changing economic and cultural environment? For the society as a whole, the institutional controls that historically governed reproductive behavior have probably become embedded in a broad, more or less coherent sociocultural, legal, and administrative framework and are not readily available for revamping in response to the need for a new demographic regime. So the signals do not change. For individuals and families, as before seeking and acting on their own interests, a variety of demographic outcomes is possible--but only fortuitously an outcome that accords well with the new social interest. In essence, individual and social demographic interests are uncoupled.

Why, it may be asked, did this "uncoupling" not happen historically in the demographic experience of the rich countries? The answer is that it did happen. Community controls over marriage and household establishment broke down under the new economic opportunities and the possibilities for social and demographic mobility they afforded. However, there was no surge in population growth comparable to that in the contemporary Third World because mortality remained high (as it did until well into the present century) and to a lesser extent because emigration was an outlet. Europe's population rose by 7 percent per decade over the nineteenth century, compared to 4.5 percent per decade over 1750-1800 (Durand, 1977). The industrial economy, except at the troughs of its business cycle, was well able to absorb the increase it had precipitated.

The individual fertility interests that were formed by the pattern of industrialization, or were co-formed with it, eventually worked firmly in the

direction of smaller families. One facet of the changes that constitute economic development is a steady rise in the cost of children to parents, far outpacing the characteristically tepid efforts of society to subsidize this cost and thus distribute the burden. Children's income-earning opportunities recede; their role as a store of value for their parents' old age or as a hedge against family misfortune is supplanted by new social and economic institutions; educational costs to parents, despite large public expenditures, remain appreciable and become more necessary; the income sacrifice of the time involved in childrearing becomes a large factor in the family economy. More than sufficient reasons can be found in the changing economy and its institutional supports to account for a radical drop in family size.

We do not assume a thoroughgoing material basis for all such changes. Clearly, concomitant cultural developments--particularly in parents' perceptions of children and of the balance of rights and duties between parent and child--have potentially profound import for demographic behavior. Fortunately there is no need to assign precedence between culture and social organization in this explanatory sketch.

With completed industrialization it would be pleasant to report that there is a "recoupling" of social and individual demographic interests at approximately a replacement level of fertility. There is no evidence for this belief, however. Fertility as plausibly will continue to drop far below replacement, with governments scrambling for ways of subsidizing the cost of children to sustain their nations' labor force and tax base. Whether their scarcity will make children again more privately valued, so leading to a fertility rebound, or whether social acceptance of childlessness and one-child families (and voting power accumulating among the elderly and the childless)

will further tip the balance toward very low fertility, cannot as yet be seen.

### Lessons from Contemporary Experience

While these low-fertility problems are far removed in scale from the current difficulties of rapid population growth in the Third World, there are important analytical similarities. We shall look briefly at a number of contemporary examples of fertility change, all places where substantial declines have taken place, drawing on the same explanatory apparatus. Brazil, on the one hand, and China, on the other, provide in some respects polar cases. The dynamic East Asian countries (principally, South Korea and Taiwan), and Sri Lanka and the Indian state of Kerala are instructive supplementary cases within these extremes. (In a fuller discussion we would of course be just as interested in why fertility has not declined in certain other places.) The statistics cited for the most part are taken from the last two World Development Reports (World Bank, 1980, 1981)--the first of these being used for Taiwan, which thereafter became invisible in UN-system statistics.

Brazil and China. Brazil, the regional giant of Latin America, has shown fairly substantial fertility decline in the last decade. The birth rate has apparently fallen by more than a quarter, to a level below 30 per thousand, over this period, the decline accelerating in the most recent years. (The latest figures are not yet well-confirmed and the 1980 UN data cited in Table 1

only partially reflect them.) In terms of Third World averages, Brazil has a relatively high per capita income: close to US\$2000. This, for comparison, is equivalent in real terms to the level in Japan as recently as the early 1960s--at which time Japan's birth rate was below 20. It is a highly urbanized country--65 percent of the population lived in urban areas in 1980 (in India, for example, the corresponding figure is 23 percent), and agriculture contributes only some 10 percent of gross domestic product. Manufactured exports have grown rapidly in volume and technological sophistication. Brazil's development strategy has combined vigorous promotion of state and private capitalism, little concern with income distribution, and pronatalist or laissez-faire attitudes toward population growth.

While interpretations of demographic trends must still be highly tentative, Brazil seems to be tracking the classic European pattern of transition from high to low vital rates. Death rates declined sharply in the 1930s, and by the 1960s life expectancy was approaching 60 years. (Today it is around 62.) On average there were four or five surviving children per family at a time when economic changes were making such a size increasingly incompatible with urban industrial life. For the growing middle class, children competed with newfound consumption alternatives; for the poor, with the daily exigencies of scraping for a living and with the possibilities, although slight, of moving up in the world.

By most assessments of the human costs of economic development, the Brazilian pattern is a high-cost route. Its apparent effect, belatedly, in limiting population growth can be seen in part as a reflection of these costs, albeit in the long run a socially beneficial result. But the future pace of fertility decline is by no means assured, while economic difficulties, par-

ticularly problems of labor absorption, loom increasingly large. More interventionist policies in the demographic as well as the economic spheres may become more attractive.

The contrast with China's development strategy in the past three decades could hardly be more extreme. If Brazil's experience is reminiscent of Europe's or America's during the turbulent years of early industrialization, China's experience recalls Europe or Japan in the preindustrial period. In essence, China tried to preserve or recreate in a modernizing economy the kinds of community structure and social controls on its population that characterized these traditional societies. The violent Chinese reforms of the 1950s--the killing or dispossessing of the landlords and powerful lineages and the establishment of collectivized agriculture--paradoxically gave new strength and resilience to the rest of the preexisting social system of family, neighborhood ("team"), and village ("brigade"), a strength evidenced by these groups' successful resistance to the later recurrent excesses of Maoist radicalism.

Just as the eighteenth-century English parish or Japanese village had both an economic interest in and the capacity to determine who married or settled in the community, so the post-revolutionary Chinese village gained a similar stake and role--rendered more effective by covering not just household formation but also marital fertility, and rendered more precise by greatly lowered mortality risks and by the modern technology of birth control. The considerable economic autonomy of brigades and even of teams, including assigned obligations to fund most of their own social services, set up local fertility incentives that in large measure coincided with national government interests in slowing population growth. More direct government pressures,

through antinatalist and delayed-marriage campaigns, of course, pushed in the same direction, facilitated by an effective health-care system that also provided family planning services. The demographic outcome has been striking indeed: life expectancy rising from below 30 years before the Second World War to 65-68 years today and a halving of the birth rate in less than two decades, to a present level of below 20 per thousand.

The same pattern of social and economic organization that has produced the extraordinary drop in mortality and fertility in China has had altogether less spectacular effects on the economy itself. The sustained surge in labor productivity on Taiwan, for example, finds isolated parallels but no broad counterpart on the mainland. In an effort to establish stronger economic incentives, particularly at the individual level, the present Chinese government has begun a shift away from the collective economy toward reprivatization--a shift that, if it proceeds as it seems to be going, could have large unintended effects on population trends. Both the health system and the local pressures for fertility limitation are intricately dependent on the brigade and team structure, and their course under any weakening of that structure cannot easily be predicted. Selective relaxation of control in the economic but not in the demographic sphere may turn out not to be possible. If so, a consequence of promoting rapid innovation and productivity growth may be, so to speak, to free the fertility genie from the bottle. Concurrent moves in China to introduce draconian economic and administrative measures to achieve one-child families suggest that the government is far from persuaded that a fertility rebound could not occur.

South Korea and Taiwan. If Brazil and China are the extremes of economic-demographic strategy, is it possible to do better somewhere in between--combining rapid economic growth with a pattern of social organization that promotes early mortality and fertility decline and avoids the worst of the human costs of development? If we add to the objectives broad-based political participation, then very likely the problem is overdetermined. Leaving that consideration aside, however, there are a number of countries that seem to have found a successful middle way. Nearly all are in East or Southeast Asia: furthest along are South Korea and Taiwan (Hong Kong and Singapore, the other two members of the so-called Asian "gang of four," are too structurally peculiar for their outstanding success to be relevant here); Malaysia and possibly Thailand would be in the next tier.

South Korea has averaged 7 percent growth in real per capita income over the past 20 years, during which time life expectancy has risen from 54 to 63 years and the birth rate fallen from 43 to 25 per thousand. The corresponding data for Taiwan, for the period 1960-78, are 6.6 percent average yearly per capita income growth, an increase from 64 to 72 in life expectancy, and a drop from 39 to 21 in the birth rate.

Both countries owe their economic success to extraordinary growth of manufactured exports--admittedly achieved in a favorable international economic environment. Domestically, the result was the product of high entrepreneurial capacity, competent and supportive government economic policies, and a well-trained, energetic labor force. (To say this, of course, does not get us far toward explaining the performance.) Agricultural productivity has also grown steadily. The shift to an industrial economy was achieved without generating a high degree of income inequality among households and without emer-

gence of a very large urban-rural wage differential. Although there is no persuasive evidence that an egalitarian development policy necessarily promotes either economic growth or fertility decline, it does seem that the same factors that led to growth with equity in Korea and Taiwan also speeded demographic transition. These factors included an effective land reform aimed at encouraging small-scale peasant production, supported by a strong agricultural extension program and improvement in rural financial institutions, and rapid expansion of education, health, and family planning services. The development pattern combined the fostering of vigorous private-sector performance in both industry and agriculture, enlightened provision of social services, and stringent government administrative and political control. Unlike China, discouragement of fertility did not become part of this last sphere but remained in the second.

Sri Lanka and Kerala. There are various instances of low rates of mortality and fertility being reached without any apparent stimulus from a dynamic economy and without a strong politico-administrative system. Sri Lanka and the Indian state of Kerala are the best known cases--with life expectancies currently 66 and 60 years, birth rates of 28 and 25 per thousand, yet with per capita incomes in the bottom half of the World Bank's "low income" category. (Kerala is one of the poorer states of India.)

No firm agreement exists about how this "modern" demographic regime emerged in these areas. In certain respects, particularly in the wide availability of education and health services, both places are substantially more advanced than their aggregate production performance would suggest. Such ser-

VICES develop in response to demand as well as in anticipation of it, so they cannot be straightforwardly posited as contributing factors to fertility decline; but in these places government action seems to have come first. A different source of explanation is found in the nature of their labor markets--the extensive pattern of labor commuting from rural to urban areas that has developed in Sri Lanka, the organization of agrarian trade unions in Kerala, and in both (partly in consequence) the relative lack of employment opportunities for children. Modern labor relations and the resulting separation between economic and domestic spheres of life have emerged without the accompaniment of high productivity. Finally, an increasingly heard argument in the case of Kerala (and applicable also to Sri Lanka) is that fertility decline is a response to the diminution of agricultural employment and growing difficulty of finding other work--a situation that widens the gap between aspirations and income and, in turn, makes for a high age at marriage and acceptance of small-family norms. Whatever the reason, Sri Lanka and Kerala have achieved levels of social development and demographic transition somewhat out of line with their extent of economic development--and have done so, in the population case, without substantial government antinatalist pressure.

Economic growth is properly the prime ambition of poor countries, and with little economic success to point to in Sri Lanka or Kerala it can reasonably be asked: what is to be learnt here? The answer hinges on whether or not in these cases the stage has been set for sustained economic advance. Optimistic observers see the beginnings of such an advance under recent liberalization of Sri Lankan economic policies and the prospect, too, that Kerala over the next decade will move substantially ahead in its economic standing

among Indian states. Those who instead see a demographic transition induced by poverty or relative deprivation are less sanguine.

Strategic Options. The conclusions we are led to by these and similar examples of recent demographic history are as follows. First, sustained, rapid economic growth creates conditions that make for fertility decline, largely irrespective of government population policy. Second, the timing and pace of fertility decline in these instances, and the social costs of the overall pattern of economic-demographic development, can vary over a wide range, depending on the particular institutional setting of the society--which in turn is in some measure influenced by government policy. Third, there are combinations of patterns of social organization and designs of governmental programs (notably in education, health, family planning, and rural employment) that foster lowered fertility even without much economic growth. Fourth, in these latter cases, it remains an open question in each instance whether or to what degree poor economic performance is linked to these institutional arrangements favoring low fertility. And fifth, if such a link does exist, political or administrative pressure aimed at speeding a decline in fertility may succeed in narrow terms but at a considerable cost (at least in the short and medium run) in foregone economic growth.

General propositions of this sort need detailing for a specific situation if they are to yield an array of feasible options for economic-demographic strategy. Feasibility is constrained in many ways. Existing institutional arrangements are resilient and cannot be arbitrarily altered except at high cost. (For example, the Chinese land reform of 1950-52 was a fundamental

restructuring of rural society, but it was achieved at very high cost; the 1958 campaign to establish communes as the dominant rural social unit was abandoned when the evident costs it would entail in overcoming local opposition were judged unacceptable.) Where there is scope for influencing institutional forms, possible effects on population trends are unlikely to count for much in the choice: both political and economic considerations would inevitably rank ahead of demographic. The feasibility of particular policy directions may change over time as the economy evolves. (For example, massive expansion of urban commuting in poor rural communities--as in Indonesia--made possible by improved transport facilities, erodes the social role of residential groups and thus also the possibility of designing population and development policies that work through those groups.) And, not least, government capacity itself, aside from will, may often be a binding constraint in determining feasibility. (That a government such as Singapore's is able to establish an intricate pattern of antinatalist incentives is of little relevance to the vast majority of Third World governments.)

The desideratum for population policy is that it comprise measures that do not detract from the incentive structure underpinning economic growth, while promoting socially desired demographic ends. A simple division of its content would therefore be into measures that clearly have an economic dimension and thus call for careful meshing with existing incentive patterns, and measures that, in effect, are divorced from the economy and so do not raise the possibility of working at cross purposes.

In the first category the broad object would be the creation of an institutional framework favoring both economic achievement and demographic restraint--getting the incentives right without waiting for this to happen "nat-

urally." In part, such a framework could be an outcome of government routine activities and development programs, where a shift in emphasis or in design may plausibly have a demographic effect. Fertility levels are empirically linked to factors such as literacy and the status of women, and achievements in these areas earlier rather than later in the development process may have some benefits in demographic terms in addition to their other values. Probably in greater part, however, the institutional framework that generates economic and demographic incentives is rooted in the patterns of social organization that exist in the society: labor market, kin group, village community, local government, and so on. Here the objective would be to seek to modify these arrangements so as to bring home to individuals or families more of the social costs of their demographic decisions. This "internalization" of demographic costs could be either at the family level or at the level of some larger social grouping that is in a position to exert social pressure on its members. In many preindustrial societies we noted that rural territorial communities had such a stabilizing demographic role; in the contemporary world, however, creating or sustaining that role during economic development is an altogether more problematic task--as the case of China illustrates. Perhaps more realistic in most cases today is to concede the economic-demographic sovereignty of the family unit. On the kinds of institutional innovation that would act to limit the transfer of demographic costs from the family on to the society at large, no general specifications can be given. The diverse patterns of demographically related social organization found in countries that are reaching or have attained low fertility offer a rich store of insights to draw on. The unique conditions of each setting where policy is to be made, however, demand a strategy founded on thorough local analysis.

The second policy category, divorced from the economy although not entirely resource-free, covers measures aimed principally at seeking to promote social values associated with low fertility or at easing the translation of such values into practice. The former is an intangible goal and one that is not firmly within the grasp of public policy in any sphere. But cloudiness of outcome permits the policies that seek to direct cultural change to continue to claim efficacy. The latter is where population policy can finally come down to bricks and mortar and management charts. An emerging socioeconomic setting might clearly support a parental interest in low fertility, but one that parents are for some reason inhibited in pursuing. Contraception may, for example, be culturally disfavored; or the means available, unsatisfactory. Here is the rationale for government promotion of family planning—as an exercise in legitimation and in ensuring effective, perhaps subsidized distribution of contraceptive services. (It is not, of course, necessarily a rationale for government itself to operate a family planning program, the direction that action nearly invariably takes: such is the statist orientation of development thinking.)

### Demographic Futures

A proper modesty is in order concerning our abilities to predict either economic or demographic futures of nations. In his exemplary review of development experience over 1950–75 David Morawetz (1977) notes that, as late as the early 1960s, the most authoritative forecasts of future world economic

growth did not foresee such successes of the next two decades as Brazil or the nations of the East Asian rim. Countries that were predicted to "take off" in that period included India, Burma, Egypt, and Ghana. Around 1950 similarly well-informed observers of Japan foresaw a future for that country of Malthusian stagnation or worse. We can have little confidence in making much better calls today.

The reasons for this uncertainty include our considerable ignorance of the origins of social change and the fact that even well-founded predictions can be upset by events, natural or man made, appearing out of the blue. They also include, however, the degrees of freedom that remain for deliberate choice about the design of social arrangements in any society. Economic development and demographic transition are fundamental, irreversible transformations of these arrangements in which roads not taken are put rapidly out of mind. In retrospect, as a result, the process seems to have an inevitability about it. Failures to accomplish such transformations, which are common enough, similarly seem to have been dealt in the cards. The social scientist, prone to exaggerate the scope of policy choice, in the end gets his comeuppance from the historian, equally, perhaps, prone to diminish it. But the demographic future is indeed in some measure within the domain of social choice, and wise choice here offers potentially large gains in human welfare. We are far from reaching a perfect base of understanding for sound policy action, but that would be a strange reason to turn away from the subject.

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