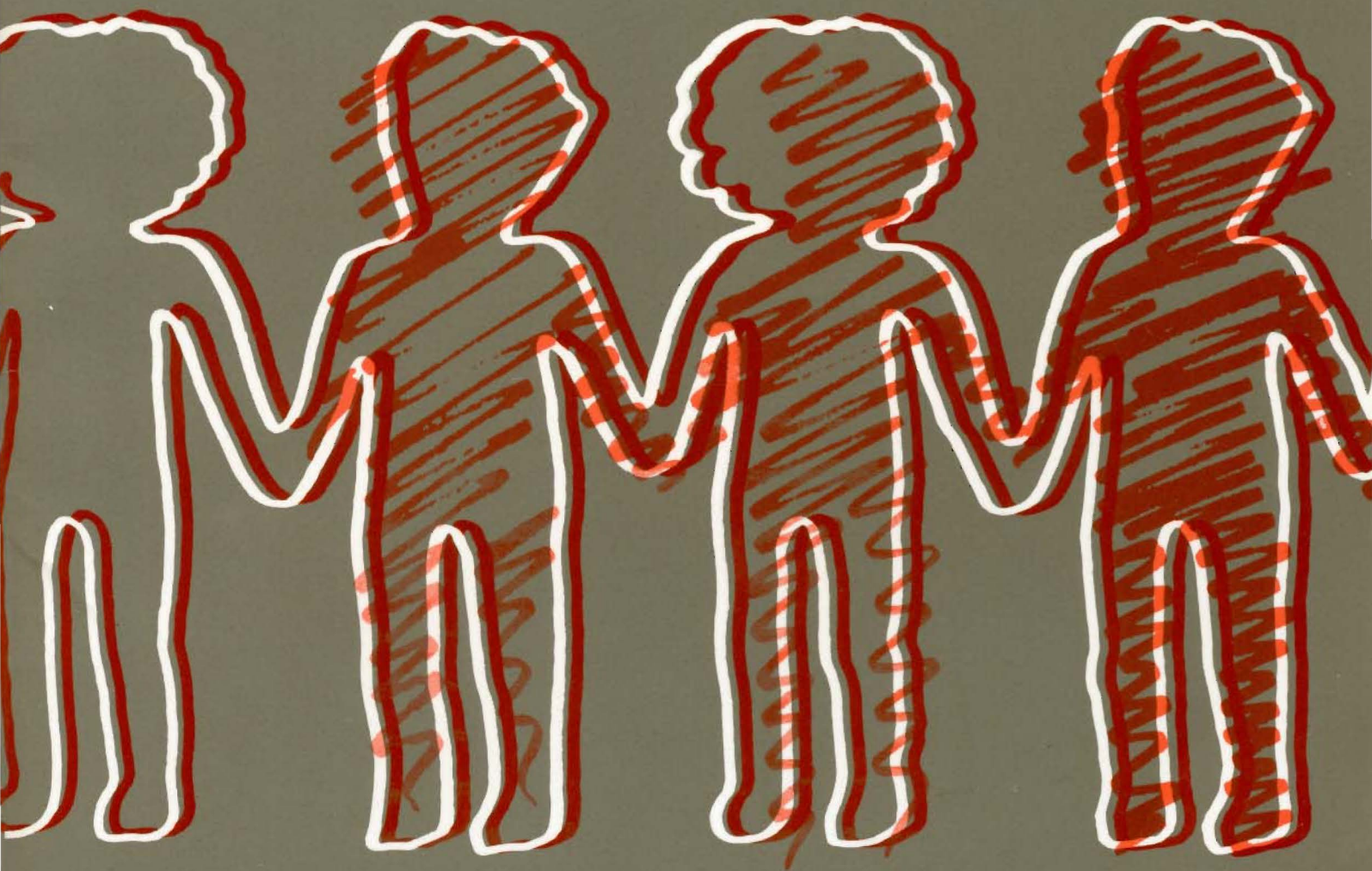


Child Mortality since the 1960s

A Database for Developing Countries



United Nations

Department of Economic and Social Development

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United Nations

New York, 1992

NOTE

The designations employed and the presentation of the material in the present publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The term "country" as used in the text and tables also refers, as appropriate, to territories or areas.

In some tables, the designations "developed" and "developing" economies are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

The report has been edited and consolidated in accordance with United Nations practice and requirements.

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PREFACE

Child survival programmes have been given considerable attention during the past decade. Governments and international organizations have intensified their efforts to improve child health and survival in developing countries. Specific goals for children and their welfare have been formulated at international forums. One of the major goals incorporated into the Plan of Action adopted at the World Summit for Children, held at the United Nations in New York in September 1990, concerns the reduction of the mortality of infants and children under five years of age. The Plan of Action also stresses the need to monitor progress towards these goals during the 1990s.

This publication brings together the available data on child mortality in developing countries, covering a period from around 1960 to the present. The purpose is to inform policy makers, programme planners and researchers of the availability of data and to demonstrate their range of variation, in order to provide a basis for assessing levels and trends and for monitoring progress towards mortality reduction.

The data assembled here are major resources for the demographic research undertaken by the Population Division of the Department of Economic and Social Development of the United Nations Secretariat—in studies of child mortality, in monitoring mortality trends and in preparing demographic estimates and projections. Outside requests during the past few years for this type of database indicate its potential value to researchers and policy makers.

The Population Division recently prepared a manual entitled *Step-by-Step Guide to the Estimation of Child Mortality* (United Nations, 1990), which is

accompanied by a microcomputer program, QFIVE. The *Guide* was prepared at the request of the United Nations Children's Fund (UNICEF), as part of its effort to improve the capability of its field officers to monitor progress in reducing infant and child mortality. It is being widely used by demographers in research and training. The present database is expected to become a valuable companion volume to the *Guide*.

The databases for 20 Latin American countries were prepared in collaboration with the Centro Latinoamericano de Demografía (CELADE).

Grateful acknowledgement is due to John Blacker, London School of Hygiene and Tropical Medicine, and to Kenneth Hill, The Johns Hopkins University, who served as consultants for this project. Mr. Hill wrote chapter I, on scope and methodology, and chapter II, on main findings; he also served as scientific editor of the publication. Acknowledgement is also due to the United Nations Children's Fund for providing part of the financial support that made this publication possible.

The data are presented without adjustments or smoothing. Evaluation of the data for individual countries is not provided although guidelines on how such evaluation can be carried out are presented. The estimates given in the tables and graphs should therefore be interpreted with caution.

As part of its monitoring activities, the Population Division will continue to update the database. Comments and suggestions concerning the database are welcome. They should be addressed to the Director, Population Division, Department of Economic and Social Development, United Nations, New York, New York 10017.

CONTENTS

	<i>Page</i>
Preface	iii
Explanatory notes	viii
<i>Chapter</i>	
I. SCOPE AND METHODOLOGY	1
II. MAIN FINDINGS	16
III. GUIDE TO NOTATION AND LAYOUT OF DATABASE	22
IV. INDIVIDUAL COUNTRY PROFILES	25
Afghanistan	27
Algeria	30
Argentina	34
Bangladesh	38
Benin	44
Bolivia	47
Botswana	52
Brazil	57
Burkina Faso	63
Burundi	66
Cameroon	70
Central African Republic	73
Chile	76
China	80
Colombia	84
Congo	91
Costa Rica	94
Cote d'Ivoire	100
Cuba	104
Dominican Republic	109
Ecuador	114
Egypt	120
El Salvador	125
Ghana	130
Guatemala	134

	<i>Page</i>
Haiti	140
Honduras	145
Hong Kong	150
India	154
Indonesia	158
Iran (Islamic Republic of)	163
Iraq	167
Israel	171
Jamaica	174
Jordan	178
Kenya	183
Kuwait	188
Lebanon	192
Lesotho	195
Liberia	200
Libyan Arab Jamahiryia	205
Madagascar	208
Malawi	211
Malaysia	216
Mali	220
Mauritius	224
Mexico	227
Morocco	232
Mozambique	237
Myanmar	240
Nepal	243
Nicaragua	249
Nigeria	253
Pakistan	257
Panama	263
Papua New Guinea	267
Paraguay	270
Peru	274
Philippines	279
Puerto Rico	283
Republic of Korea	286
Rwanda	291
Senegal	295
Sierra Leone	299
Singapore	302

	<i>Page</i>
Sri Lanka	305
Sudan	310
Syrian Arab Republic	313
Thailand	318
Togo	325
Trinidad and Tobago	329
Tunisia	334
Turkey	340
Uganda	347
United Arab Emirates	351
United Republic of Tanzania	354
Uruguay	358
Venezuela	362
Viet Nam	366
Zaire	370
Zambia	373
Zimbabwe	377
References	383
A. For explanatory chapters	383
B. For country profiles	383

Explanatory notes

Symbols of United Nations documents are composed of capital letters combined with figures.

The term "billion" signifies a thousand million.

A point (.) is used to indicate decimals.

The following symbols have been used in the tables:

Two dots (..) indicate that data are not available or are not separately reported.

An em dash (—) indicates that the amount is nil or negligible.

A hyphen (-) indicates that the item is not applicable.

A minus sign (-) before a number indicates a deficit or decrease, except as indicated.

Use of a hyphen (-) between dates representing years (e.g., 1984-1985), signifies the full period involved, including the beginning and end years. A slash (e.g., 1984/85) indicates a financial year, school year or crop year.

Details and percentages in tables do not necessarily add to totals because of rounding.

The following abbreviations have been used in this volume:

CPS	Contraceptive Prevalence Survey
DHS	Demographic and Health Survey
NDS	National Demographic Survey
PES	Post-enumeration Survey
WFS	World Fertility Survey

I. SCOPE AND METHODOLOGY

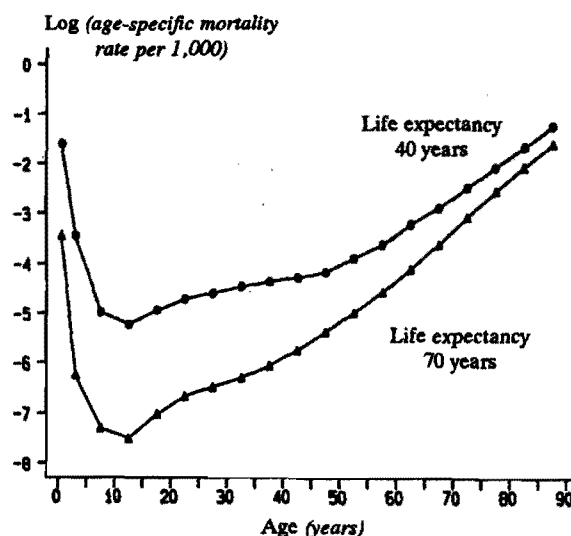
The main objective of this publication is to simplify the task of achieving consensus about recent levels and trends of child mortality in the developing countries. Chapter IV presents databases on which measures of child mortality can be based for every developing country¹ with an estimated 1990 population of 1 million or more and with data relevant to the estimation of child mortality during the period 1960-1990. Although 101 countries meet the population criterion for inclusion, 19 of those countries are not included because of a lack of available national-level data covering the period 1960-1990. Thus, the data set presented consists of 82 countries. For each country, the available national-level measures of child mortality from as many different sources as have been identified are presented graphically in a comparable manner. The data are presented without adjustment or smoothing as mentioned in the Preface. For each country, these graphs can be used to evaluate the estimates of child mortality drawn from different sources, in order to arrive at a plausible description of recent levels and trends based on all available sources rather than on one source or another taken individually. It should be noted, however, that this evaluation is not attempted here, although guidelines on how such evaluations can be carried out are given. The graphs also provide a convenient tool for assessing the plausibility of new estimates as they become available over the next few years. Any new estimate or series of estimates can simply be added to the appropriate graph to obtain a rapid visual assessment of the consistency of the new and existing information. Across countries, the graphs can be used as a methodological guide to which methods of measuring child mortality appear to work satisfactorily, or unsatisfactorily, in particular regions. It is useful first, however, to discuss briefly the nature of child mortality and the methods used to measure it. More detailed descriptions of these methods are given in the manual for estimation of child mortality (United Nations, 1990).

A. CHARACTERISTICS OF CHILD MORTALITY

The mortality risks faced by human beings vary sharply with age but exhibit an age pattern that does

Figure I. Age pattern of mortality at different life expectancies

(Based on Coale-Demeny West model life-tables for females)



Source: Ansley J. Coale and Paul Demeny, *Regional Model Life Tables and Stable Populations* (Princeton, New Jersey, Princeton University Press, 1966).

not vary greatly with the level of mortality. Figure I shows the mortality risks by age (on a logarithmic scale) typical of high- and low-mortality populations. Mortality risks are high in the period immediately after birth; they decline, often rapidly, to a minimum between ages 10 and 15, then rise gradually to about age 40, after which they rise steeply to high levels in old age. Although this broad pattern is very similar for all human populations, there are some variations between populations, particularly in the relationship of mortality risks prior to the adolescent minimum to those after that minimum (roughly corresponding to child mortality and adult mortality, respectively) and in the proportion of deaths during the first five years of life that occur in the first year. Since the focus in this volume is on child mortality, the discussion concentrates on patterns of mortality during childhood, primarily up to age 5.

B. MEASURES OF CHILD MORTALITY

The simplest single measure of mortality is the crude death rate, calculated as the ratio of deaths during a year in a population to the mid-year population, the ratio being multiplied by a conventional constant of 1,000. Thus, a crude death rate of 10.2 in 1990 means that there were 10.2 deaths per 1,000 population in that year. This measure clearly does not distinguish between deaths in childhood and those in adulthood and so cannot be used as an indicator of child mortality. Furthermore, the crude death rate is strongly affected by the age distribution of the population: given the same risks at every age, a population with a high proportion of elderly persons at high risk of mortality will have a higher crude death rate than another population with a much lower proportion of high-risk older people.

To avoid the effects of age distribution, mortality risks are calculated on an age-specific basis, often for single years of age or for five-year age groups. An age-specific mortality rate can be calculated as the ratio of deaths during a year in an age group to the person-years of exposure lived in that age group during that year, typically approximated by the mid-year population. Since mortality risks change little within an age group (except in the first five years of life), even extreme variations in age distribution within an age group can have little effect on such an age-specific rate. Age-specific rates can then be combined and summarized through the calculation of a life-table. First, those rates are converted into probabilities of dying between one age and another; for example, the age-specific mortality rate for age 4, between exact ages 4 and 5, is converted into a probability of dying between the fourth and fifth birthdays. The probabilities of dying between exact ages are then applied sequentially to a hypothetical group of births in order to calculate the number of survivors at each exact age. Thus, the probability of dying between age 0 (birth) and age 1 is applied to the hypothetical number of births to obtain the number of deaths between birth and age 1; the number of survivors to age 1 is obtained as the number of births less the number of deaths under age 1. The probability of dying between ages 1 and 2 is then applied to the number of survivors to age 1 to obtain the number of deaths between ages 1 and 2, and the number of survivors to age 2 is then obtained by subtracting this number of deaths from the survivors to age 1. This

process of chaining probabilities of dying continues until all the hypothetical births have died, at which point the life-table is complete. In the conventional notation of the life-table, the survivors at exact age x are denoted by $l(x)$, the deaths between age x and age $x+n$ are denoted by d_x , the probability of dying between x and $x+n$ is denoted by q_x , and the mortality rate between x and $x+n$ is denoted by m_x .

This publication is concerned primarily with three measures of child mortality: the probability of dying by age 1, q_0 , often called the "infant mortality rate"; the probability of dying by age 5, q_5 , called "under-five mortality"; and the probability of dying between the ages of 1 and 5, q_1 . In human populations, almost all deaths in childhood occur before age 5. Thus, the probability of dying by age 5 can be regarded as a good index of the overall level of child mortality that is readily comparable across populations. In low-mortality populations, mortality risks between ages 1 and 5 are also low, so that the infant mortality rate can also be used as a reasonable single index of child mortality. In populations with higher mortality, however, the infant mortality rate is a less satisfactory index of overall child mortality, because high proportions of child deaths occur between ages 1 and 5, and the proportions also vary substantially among populations, depending mainly upon the cause-of-death structure.

C. MODEL AGE PATTERNS OF CHILD MORTALITY: MODEL LIFE-TABLES

Age patterns of mortality are broadly similar across human populations even for very different overall levels of mortality, as is shown in figure I. This regularity makes it possible to create model mortality patterns, called "model life-tables", within which the mortality level varies while the age pattern remains broadly similar. Several model life-table systems have been proposed, but only two are considered here: the Coale-Demeny regional model life-tables (Coale and Demeny, 1966, 1983); and the United Nations model life-tables for developing countries (United Nations, 1982). Both systems are based on empirically observed life-tables selected after careful evaluation for accuracy; statistical methods were used to relate mortality at one age to mortality at another age for a range of mortality levels. As used here, both systems are single-parameter (mortality level) models for different groupings of similar age patterns of mortality.

The Coale-Demeny models are based on a large number of life-tables, principally from the countries of Europe in the nineteenth and twentieth centuries. Analysis showed that the life-tables fell into one of four typical age patterns of mortality, determined largely by the geographical location of the population. Each of these four patterns had a characteristic pattern of child mortality. In the Eastern European countries (contributing to the East family), infant mortality was very high in relation to child mortality. The Nordic countries (contributing to the North family) had high child mortality in relation to infant mortality. The countries of Southern Europe (contributing to the South family) had very high levels of child mortality in relation to infant mortality at high overall mortality levels, but rather low child mortality in relation to infant mortality at low mortality levels. The countries of Western Europe and most of the non-European populations included in the database (contributing to the West family) showed a pattern intermediate between the North and East patterns. In addition to variations in age patterns of child mortality, the four families also vary in their relationships between child, overall and adult mortality, but this type of variation is beyond the scope of this chapter.

The United Nations models are based on a smaller number of observed life-tables from developing countries that, after careful evaluation, were deemed to be accurate. As with the Coale-Demeny tables, the observed life-tables were found to fall into typical mortality pattern groups, again loosely associated with geographical region. Five patterns were identified: Latin American; Chilean; South Asian; Far Eastern; and a general pattern constructed as an average of all the observations. Variations between the groups were largely limited to the relationship between child and adult mortality: the only regional grouping with a distinctive pattern of child mortality is the Chilean, with high infant mortality in relation to child mortality.

Model life-tables are used for a number of purposes in the estimation of child mortality. First, age patterns of child mortality observed for some population can be compared with model patterns as a test of plausibility and thus of data quality. Model patterns are also used to convert one measure of child mortality into an equivalent alternative measure to compare estimates available from different sources. For example, an estimate of the infant mortality rate can be compared with an estimate of the probability of dying between ages 1 and 5 by finding the infant

mortality rate associated with the latter probability in some system of model life-tables. Thirdly, indirect estimation of child mortality based on aggregate information on child survival (see the discussion of indirect estimation or Brass methods given below) requires that the age pattern of child mortality be specified; model life-tables are used in developing the methods and a particular life-table system must be chosen in order to apply them.

D. DATA SOURCES AND ESTIMATION METHODS

The traditional source: vital registration

In the currently developed countries, measures of child mortality at the national level have traditionally come from the registration of births and deaths. The infant mortality rate is conventionally calculated as the ratio of deaths in the first year of life during a calendar year to births in the same year; this rate approximates the life-table probability of dying by age 1, ${}_1q_0$. If births and infant deaths are completely recorded, the measure will be unbiased. If the compilation and publication of statistics from the registration system are timely, the infant mortality rate thus obtained will provide a detailed and up-to-date time-series of a major component of childhood mortality. Such an annual series is available for Sweden from the middle of the eighteenth century to the present. Information from a registration system on deaths by age after infancy can be used in combination with information on the size of the population exposed to risk to calculate life-table measures of child mortality after infancy. The usual source of information on exposure to risk is a population census or a population projection from such a census.

The major problem with vital registration as a data source for estimating child mortality in developing countries is its quality. In many countries, birth registration is incomplete, biasing the denominator of the infant mortality rate; and in a still larger number of countries, the recording of infant deaths is incomplete, biasing the numerator. With potential errors in both the numerator and the denominator, the resulting ratio is subject to quite large errors, although underestimation is the usual outcome. Registration of deaths after infancy is, in general, more complete than in infancy, but the recording of the population by age (needed to provide denominators for rates after infancy) in childhood is also subject to error.

A second problem that affects the utilization of vital registration data in some countries is the delay in compilation and publication. Registration takes place at local administrative offices, and records have to be assembled and transmitted up the administrative ladder to some central processing location. In a number of developing countries, this process is slow and uncertain, and has in some cases even been blamed for coverage errors owing to the loss of records. Such administrative delays are compounded by the late registration of events. If a substantial proportion of events are registered after the year in which they occur and events are then tabulated by year of registration, the reported events for one year represent an average of demographic conditions over a number of preceding years. If, on the other hand, events are tabulated by year of occurrence, the data cannot be used until the large majority of late registrations have actually taken place and appeared in tabulations. Delayed registration also brings with it selection problems: the only children whose births are likely to be registered late are those still living, because there is little incentive to register the birth of a child who has died.

Experience with programmes to improve vital registration coverage has been rather discouraging. Several experiments in Africa and Latin America have attempted to improve the performance of the vital registration system through a step-by-step approach, upgrading the system in selected areas before moving on to additional areas with the ultimate intention of achieving national upgraded coverage. In Kenya, the improvement achieved in this way was not maintained (Gil and Ronoh, n.d.). Although the need for school admission or health-care provision will improve birth registration in general, it is unlikely to further the registration of children that die in the neonatal period. In many urban areas, burial permits that are obtainable only for registered deaths are required for disposal of a body. This type of measure, which has led to high levels of death registration in urban areas in many parts of the world, might improve the numerator of the infant mortality rate by more than its denominator, biasing the rates upward. Such a measure, however, has limited impact in rural areas. Experience suggests that complete vital registration evolves over time with general administrative development and as the importance of records becomes evident to the population at large.

Experience with the improvement of vital registration systems has therefore been largely negative. Programmes directed to speeding up the compilation and processing of records are the exception. In Egypt, for example, registration of vital events was reasonably complete up to the 1980s (possibly excepting infant deaths and the relevant births). In the mid-1980s, the system for compiling and processing registration data was completely overhauled, largely in order to provide a basis for evaluating the National Control of Diarrhoeal Diseases Project; and the delay was considerably reduced.

A second positive experience has been sample registration. In this process, a vital registration system is introduced in a representative sample of areas. Unlike national systems, registration in the sample areas is active rather than passive. That is, a person in the area is responsible for identifying vital events and making sure they are registered, in contrast to the more usual administrative system in which a registrar waits to be advised of the event. A successful example is the Indian Sample Registration System, introduced in some states of India in the 1960s and currently operating, apparently satisfactorily, throughout the country.

In summary, vital registration provides adequate estimates of child mortality in only a small proportion of developing countries. Of the 82 countries included in this volume, vital registration is the main foundation of such estimates in only 15, all but one of them in Asia or Latin America. For all developing countries, however, estimates derived from vital registration should be evaluated before they are used. Time trends in child mortality derived from vital registration data also need to be interpreted with caution. It is sometimes argued that trends may be correct even if levels are not, on the grounds that coverage is unchanging. This argument may be acceptable for short periods of time, but long series of data should be validated from time to time, say at five-year intervals, and recalibrated for coverage changes as necessary.

Non-traditional approaches: household surveys

In countries where the vital registration system as a basis for child mortality estimates is of uncertain or unacceptable quality, information from some type of

household survey is required to validate, calibrate or substitute for the vital registration estimates. Different types of surveys have been used for this purpose, and within similar types, different data relevant to child mortality have been collected. Here, a distinction is drawn between prospective and retrospective surveys. The various types of data that can be collected within these two forms are discussed below.

Prospective surveys

The essential characteristic of a prospective survey is that a defined population (or the population of a defined area or areas) is followed over time, with the vital events occurring to the population being recorded. Two types of prospective survey can be distinguished: the prospective sample survey; and the surveillance system.

Prospective sample surveys

In a sample (typically nationally representative) of areas, the initial population is recorded by a household survey, which can also include retrospective questions about demographic conditions in the past. The population is then resurveyed at regular intervals (usually six months or a year); the resurveys include questions on vital events occurring since the last round. The events reported are checked against the changes in household composition between rounds in order to minimize omission. With survey intervals of six months or less, omission of births and early infant deaths can be further controlled by the inclusion of a question on pregnancy status for all women at risk of child-bearing. Each pregnancy should correspond to a reported birth at a subsequent round, and the survival of the birth can then also be probed. This survey design can also be combined with active vital registration in sample areas, a combination commonly called a "dual-record survey". The Population Growth Estimation Experiment of Pakistan, 1964-1967 (Farooqui and Farooq, 1971) is an example of this type. With careful fieldwork, prospective surveys can provide relatively accurate estimates of child mortality and of differentials by age, sex and socio-economic conditions. Such surveys, however, require careful fieldwork over an extended period of time to estimate trends; and because of sample size limitations, they may have to be extended over several years to provide stable estimates of child mortality levels. This continuity of effort may be difficult to achieve in some developing country settings.

Surveillance systems

The surveillance system defines a population, typically of a single geographical area. The population is then followed intensively, with active registration, frequent house-to-house visits and occasional censuses. The best-known example is the Matlab area of Bangladesh (Cholera Research Laboratory, 1978). Surveillance systems provide a wealth of information about child mortality (among other things), but they are usually not nationally representative and indeed may become increasingly unrepresentative as various interventions are introduced in the surveillance area.

Retrospective questions in censuses and other household surveys

Questions that obtain information about child mortality can be included in censuses and surveys. Most of them, in one way or another, obtain information from mothers about the survival of their children, and methods used in such data are reviewed in considerable detail because they provide the backbone of the estimates presented in this volume. These techniques are all affected to a greater or lesser extent by potential selection bias, because in order for a child to be reported the mother must be a member of the study population at the time of the survey. Thus, either death or emigration of the mother can affect the reporting coverage. Before reviewing such techniques, however, a retrospective substitute for death registration is discussed.

Questions on recent household deaths by age

A population census or household survey can include a set of questions on deaths to household members using some reference period, typically 12 months, prior to the interview. For each death, the age and usually the sex of the deceased person is recorded. The survey itself provides the age distribution of the population and thus exposure to risk, so with a modest adjustment of the population from the end to the middle of the retrospective exposure period, age-specific mortality rates and a full life-table can easily be calculated.

Questions of this type have been included in a number of censuses and sample surveys, including some of the surveys included in the World Fertility Survey (WFS) programme. Experience with these

questions has been mixed. The reporting of adult deaths can be evaluated by comparing the age distribution of adult deaths with the age distribution of the population, but no similar simple evaluation exists for child deaths. Child mortality estimates based on recent deaths need to be carefully examined in the light of other existing sources before being accepted, given the mixed experience with the approach. Since this evaluation has to be made in comparison with other indicators of child mortality, the technique usually adds little to the body of evidence from existing data sources. If its estimate agrees with other sources, it can be accepted, but if it does not agree, it is dismissed.

Brass questions to women on aggregate numbers of children born and dead

Censuses or other types of household surveys can include questions concerning the number of children a woman has ever borne and the number among those children that died. These questions are often referred to as the "Brass" questions after the person who began the development of indirect methods for analysing the data (Brass, 1964). Such questions have been very widely used in all the less developed regions. Estimates derived from such data are presented for 70 of the 82 countries included in the database. By region, 82 per cent of the included countries of Africa, 85 per cent of those in Asia and Oceania and 91 per cent of those in Latin America provide estimates based on Brass questions from censuses or general household surveys. In view of the importance of this type of data, the estimation process is discussed in some detail.

The methodology can best be explained by a simple example. Consider a group of women of exact age 25, all of whom have just one child born exactly five years earlier when the women were exact age 20. The children have all been exposed to the risk of dying for exactly five years; thus, the proportion of children dead at the time of observation is the probability of dying by age 5, ${}_5q_0$, for the cohort of births. This probability will be some type of average of the period-specific mortality risks in operation at each time-point over the five years. In a second group of women, all aged exactly 25 and all with one child born at exact age 22, the proportion of children dead would be the probability of dying by age 3, ${}_3q_0$, and would be some form of average of mortality

risks in operation at each time-point over the past three years. If both groups of women were later observed at exact age 30, having had no further children, the proportions dead would be equal to probabilities of dying by age 10 for the first group and by age 8 for the second group. Thus, the current age of the women, in combination with the age of the women at the births, determines the length of the period of exposure to the risk of the children dying, as well as the time period over which the risks were experienced.

It can therefore be seen that the proportion dead of children ever born to women of a particular age will be equal to the probability of dying between birth and some age n , ${}_nq_0$, where n will depend upon the age of the women and the distribution of their births over the recent past. Brass used models of fertility and mortality to establish the relationship between the proportion dead of children ever born to women in a specified age group and the probability of dying by an exact age of childhood (under the assumption of unchanging fertility and mortality) through the use of simple indicators of the age pattern of fertility. A number of authors propose useful developments of the original method. Sullivan (1972) and Trussell (1975) expand the range of mortality and fertility models for which relationships are estimated. Of particular importance is the development of methods for estimating mortality trends under conditions of changing mortality. Feeney (1976, 1980) and Coale and Trussell (1978) propose methods for estimating reference dates for the child mortality estimates obtained if the assumption of constant mortality is replaced by an assumption of steadily changing mortality over time. The method can also be extended to allow for changing fertility. Coale and Trussell (United Nations, 1983) propose a method using indicators of cohort fertility patterns instead of cross-sectional parity ratios. Palloni and Heligman (1986) provide modifications suited for use with the United Nations model life-tables for developing countries. The Trussell and the Palloni and Heligman methods are used here to estimate child mortality levels and their reference dates prior to the survey. Both of these methods are explained in detail in the manual on estimation of child mortality (United Nations, 1990).

The relationship between the proportion dead and the life-table probability of dying is sensitive to the

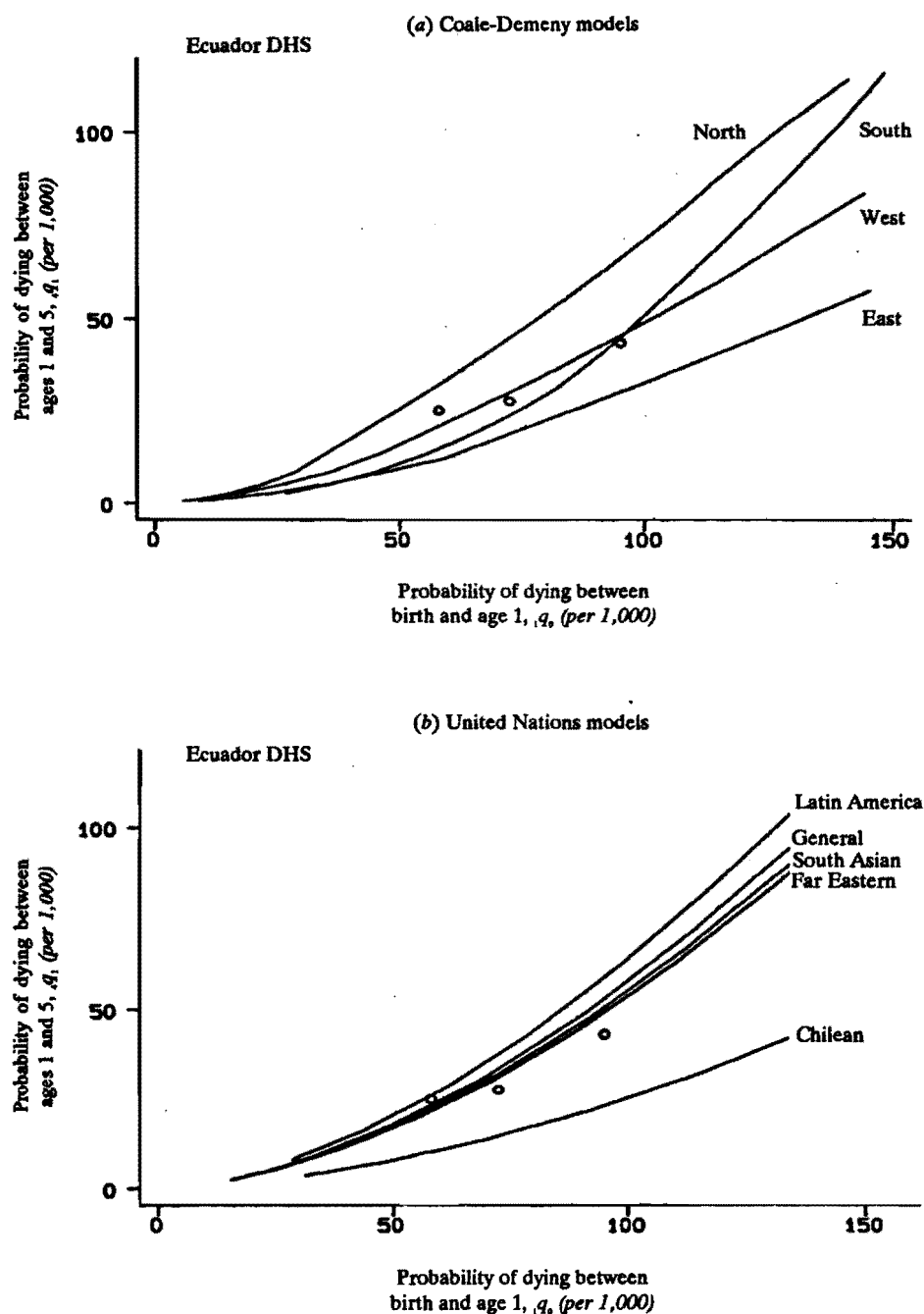
age pattern of mortality in childhood, at least for estimates of mortality in the first year or two of life. It is therefore necessary to select a mortality pattern from one of the model systems described above. There are three ways in which this selection can be made, depending upon the amount of relevant information available. First, independent information on the age pattern of child mortality, typically from a maternity history, can be used. A simple way to choose is to plot ${}_1q_0$ against ${}_4q_1$, preferably for a series of time-points, on a graph on which are also plotted the lines showing the relationship within a particular life-table family at different mortality levels. Figure II shows the points for three time periods from the Ecuador Demographic and Health Survey (DHS) using the Coale-Demeny and the United Nations model life-table systems, respectively. The points fall close to the Coale-Demeny West relationship or the United Nations general pattern for all three time-points, suggesting the use of one of these families. Secondly, if no direct data from a maternity history or from a multi-round survey are available for the country under study, it may be possible to select a model on the basis of consistency between two successive data sets. Figure III shows estimates of ${}_1q_0$ plotted against their reference time-points from two successive censuses of Kenya using different model life-table families. In figure III(a), the Coale-Demeny North model was used as the basis for estimation, whereas in figure III(b) the South model was used. The two sequences fit together very neatly when the North family is used but appear as two parallel lines with a hiatus between them when South is used. The North model appears to be more consistent with the available data than the South model. Although data errors will affect consistency, in the absence of more direct indications the model that gives the most consistent pattern over time is generally to be preferred. The choice of the North model for Kenya, however, is supported by direct indications from maternity histories. Thirdly, in the absence of direct indications or inter-survey consistency, a model life-table can be chosen on the grounds of geographical proximity. For example, the United Nations Latin American pattern could be used for a country in Latin America or a direct estimate from a neighbouring country could be taken as an adequate indication.

Despite the flexibility introduced into indirect estimation of child mortality over the past two decades,

assumptions remain. Three such assumptions—those concerning the nature of mortality change over time, the homogeneity of mortality risks by age group of mother and unchanging fertility—deserve further discussion. The estimation of reference dates for indirect estimates assumes that child mortality rates have been changing at a fixed rate for a considerable period in the past. This assumption is very often unjustified, for example, in a country that has undergone a period of civil upheaval. Even if mortality change has not been steady, an indirect estimate will still represent a weighted average of the period mortality conditions from the first child-bearing by women of the cohort being analysed to the present, but the weighted average may not fall on the actual trend line followed by child mortality. For example, a sharp spike in mortality during one year will raise the proportion dead for all women with children but will have the greatest impact on infants, where mortality rates are highest. The spike will therefore be spread over reports of women in a range of age groups, following the distribution of recent births. Thus, indirect estimation procedures cannot capture the full magnitude or exact timing of short-term fluctuations in child mortality but should be able, other things being equal, to capture longer term trends.

The indirect estimation procedures also assume that all children, regardless of the mother's age, are exposed to the same, homogenous mortality risks. This assumption is incorrect in at least one important respect. The women who have children at the youngest ages, particularly under age 20, tend to come from the less privileged strata of society; and a higher proportion of those children than of the children of older women will be first births. Both belonging to a lower socio-economic class and being a first birth are risk factors; thus, the proportions dead of the children of younger mothers often imply much higher mortality risks than do the proportions dead for older women. Therefore, the indirect estimate of child mortality derived from women aged 15-19 is excluded from the graphs presented in this publication, on the grounds that it is frequently seriously biased, as well as unreliable, because of the relatively small numbers of events. In some cases, the same selection bias also applies to information for women aged 20-24 and can be seen in the graphs as an upward deviation for the time-point closest to the survey date. The problem is

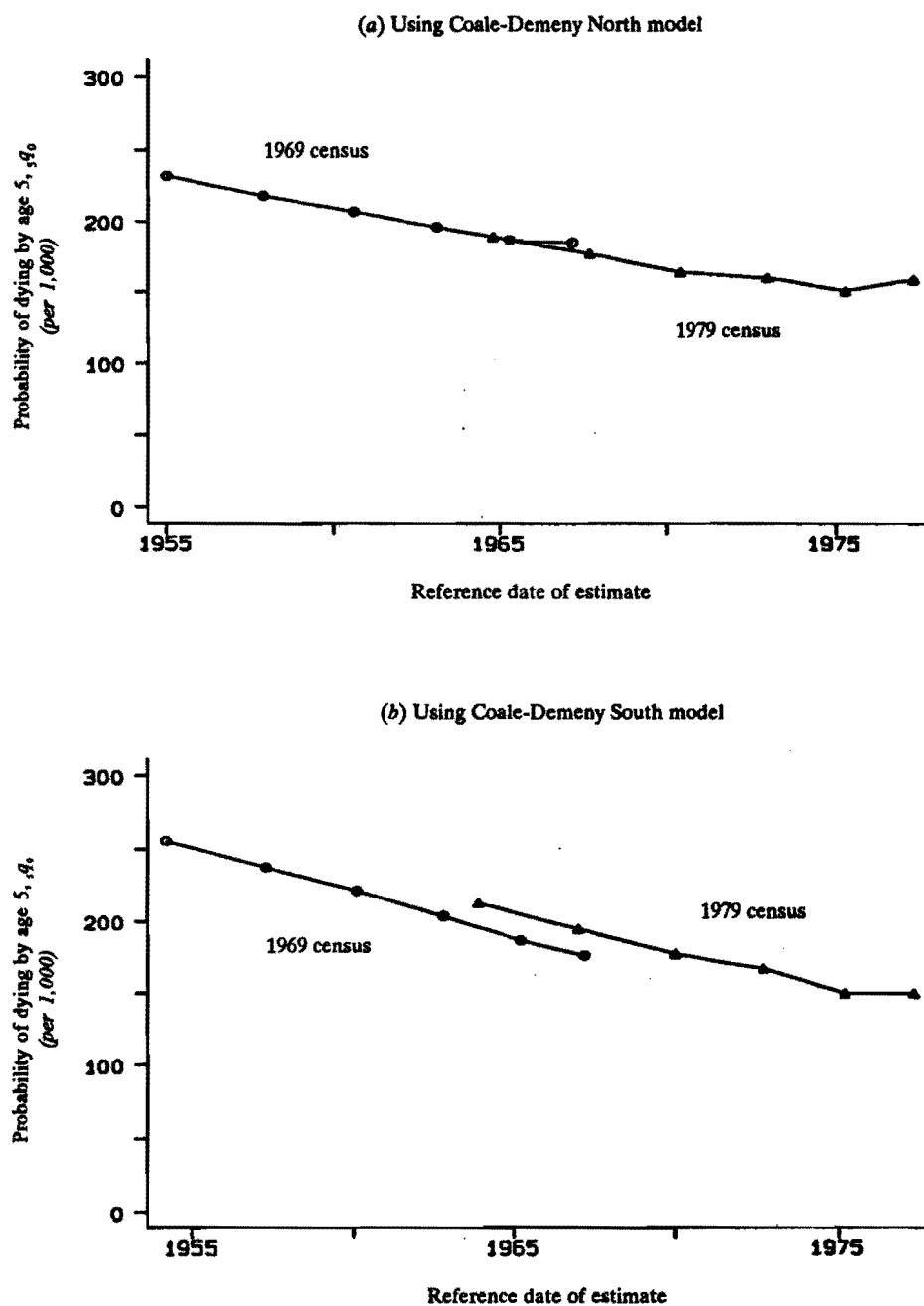
Figure II. Age patterns of child mortality in the Coale-Demeny and United Nations model life-table families, with observations from Ecuador



Sources: Ansley J. Coale and Paul Demeny, with Barbara Vaughan, *Regional Model Life Tables and Stable Populations*, 2nd ed. (New York, Academic Press, 1983); *Model Life Tables for Developing Countries*, Population Studies, No. 77 (United Nations publication, Sales No. E.81.XIII.7); and chapter IV of the present publication.

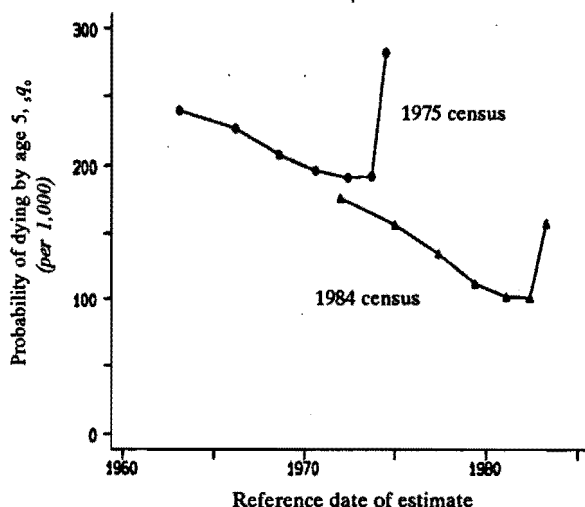
NOTE: DHS = Demographic and Health Survey.

Figure III. Indirect estimates of child mortality using different models, Kenya, 1969 and 1979 censuses



Sources: Chapter IV of the present publication and additional calculations.

Figure IV. Indirect estimates of child mortality from 1975 and 1984 censuses of Tunisia, all age groups



Source: Chapter IV of the present publication.

very pronounced in the case of Tunisia, shown in figure IV using data from the 1975 and 1984 censuses. It is unfortunate that this bias applies to the youngest women, because it is these women whose children have been exposed only to the most recent child mortality risks and whose reports thus provide estimates for period mortality closest to the time of the survey. The proportion dead of children born to women aged 15-19 should in theory provide an estimate of child mortality little more than a year before the survey; that for women aged 20-24 should give an estimate for some two or three years before the survey. In practice, neither point is generally reliable, and the most recent estimate available is that based on reports of women aged 25-29, with a reference date some four or five years prior to the survey.

It may be noted in passing that this problem of non-homogeneity of mortality risks is much reduced if the information on children ever born and children dead can be tabulated by time since first marriage or time since first birth of the mother. The shortest exposure group, time since first marriage or first birth group 0-4 years, clearly still includes a disproportionate number of first births, but it includes births from all social groups rather than primarily from the disadvantaged. The reference date for an

estimate based on this shortest exposure group is also only a year or two prior to the survey date, improving the timeliness of indirect estimates. Thus, consideration should be given to the inclusion in general household surveys and possibly even in censuses of a question on date of first marriage (for countries where almost all child-bearing occurs within marriage) or date of first birth (for countries with substantial proportions of premarital or extramarital births). Data have not been analysed by duration of marriage in this data set because of the almost perfect overlap between the data sets that have information on duration of marriage and those which include complete maternity histories and thus provide direct estimates that limit the need for indirect estimates.

The third assumption is that fertility has been constant, or rather, that cross-sectional parity ratios for age groups 15-19, 20-24 and 25-29 can be used to represent the distribution of births in the past for different cohorts of women. Fertility changes after age 30 have no effect on these ratios and will not affect the estimation procedure. If fertility under age 30 has been falling, however, perhaps as a result of rising age at marriage, parity ratios for age groups will not represent the birth distribution in the past for any cohort. The ratios will tend to be too small, indicating too recent a pattern of births and thus tending to overestimate child mortality levels and assign to them time-points that are too recent. The problem of changing fertility may also be reduced by classifying women by duration of marriage or duration of motherhood rather than by age, or if data from successive surveys are available, by using the Coale-Trussell procedure based on cohort, rather than period, parity ratios.

In summary, the indirect estimation of child mortality from aggregate information on children ever born and children dead for women classified by age group has worked well in a wide variety of data-collection vehicles (censuses, large surveys, small surveys etc.) and socio-economic contexts. However, although in most applications the data appear to be of reasonable quality, there are undoubtedly some applications in which the data are suspect. The most common data flaws are the omission of dead children, particularly by older respondents, leading to underestimates of mortality for the most distant time periods and thus to underestimates of the rates of child mortality decline. Stillbirths and miscarriages

could be included in the number of children ever born and dead children, increasing the proportion dead and leading to overestimates of child mortality. Age-misreporting by the mothers will affect most data sets, although the likely impact of such errors is not clear-cut. In addition to data errors, deviations from the assumptions of the method may also bias estimates. Heterogeneity of risk will distort (usually upward) estimates based on reports of women aged 15-19 and to a lesser extent those aged 20-24; sharp or other non-linear changes in mortality with time will be reduced in amplitude and spread over adjoining time periods; and declining fertility will distort the allowance for fertility patterns, tending to overestimate recent child mortality. These potential biases need to be borne in mind when interpreting the indirect estimates in comparison with estimates from other sources.

Questions to women on their most recent birth and its survival

Censuses and surveys in the developing countries often ask women of reproductive age about recent child-bearing, through a question either on the date of the most recent birth or on whether the woman had a birth in a defined period, such as the 12 months prior to the survey. The primary objective of such a question is to measure fertility, but an additional question on the survival of the child also provides a basis for measuring early child mortality. It is not possible to use information on births more than 12 months prior to the survey because of selection bias; the birth interval following the birth of a child that dies is, on average, substantially shorter than that following the birth of a child that survives, partially because of the interruption of breast-feeding that occurs when a child dies. As a result, the births of children that died in infancy are more likely to have been followed by subsequent births and thus to have been superseded as most recent births. Therefore, data on survival of recent births can only provide an estimate of infant mortality; no usable information is obtained about later child mortality. In its simplest form, this method has tended to give rise to clear underestimates of infant mortality, probably largely because of a tendency to fail to report the birth of a child that subsequently died as being a most recent birth.

Maternity histories

In a maternity history, each woman (in some cultures, only those ever married) is asked for the date of birth and, if applicable, the age at death of each of her live-born children. Data of this type permit the calculation of life-table measures of child mortality for time periods, as well as extensive analysis of the relationships between child mortality risks and characteristics of the child, the mother and her environment. The collection of such data has expanded enormously since the mid-1970s, as a result of the World Fertility Survey and the Demographic and Health Surveys programmes. Maternity histories are available for 51 of the 82 countries included in this volume. By region, such histories are available for the following proportions of the countries included in this publication: Africa, 61 per cent; Asia and Oceania, 52 per cent; Latin America, 78 per cent.

Maternity history data do have certain limitations. As a rule, the questions are only put to women of reproductive age, resulting in progressive age truncation for time periods further in the past. At the survey, only women under age 50 are interviewed; for the period five years earlier, only births to women under age 45 are recorded; for 10 years earlier, only births to women under age 40; and for 15 years earlier, only those to women under age 35. Strong differentials in child mortality by age of mother could distort trends in the more distant past, unless only children born to women under some specified age are considered. Because of this potential truncation bias, the database only presents estimates of child mortality based on maternity histories for the 15 years preceding the survey. The data may also be distorted to some extent by incorrect dating of births, particularly if the errors vary with the survival status of the child. Misreporting of age at death is also a common problem and has a particularly large impact on the infant mortality rate; deaths that occur around age 1 are often reported as occurring at age 1, with the result that deaths that should contribute to the infant mortality rate are moved into the age range from 1 to 2. Reporting of children that have died may also be incomplete, although it appears that careful training can reduce this error to low levels even in largely illiterate societies. This need for

careful training, however, has an important consequence in that it severely limits the maximum sample size (often to about 10,000 women), and this limitation restricts the temporal and spatial detail that can be obtained. In order to accumulate sufficient events to provide stable estimates, child mortality measures are usually calculated for five-year time periods, and even for such wide periods the sample variability on the estimates may be substantial.

A complete maternity history collects the numbers of children ever born and children dead for each woman and thus provides the information needed for the application of indirect estimation procedures. These indirect estimates can be compared with direct measures. Because the numbers of births and deaths are identical for both methods, differences in the resulting estimates arise from different locations (explicit in the case of direct estimates, implicit in the case of indirect estimates) of events in the past. Mislocation of births in the past and heaping of age at death on preferred digits may substantially affect direct estimates (particularly of the infant mortality rate), whereas changing fertility and inability to capture short-term fluctuations adequately may affect indirect estimates.

Truncated maternity histories that capture only events in the five years or so preceding the survey have been used as an alternative to complete maternity histories. Although truncated histories lessen the amount of fieldwork somewhat, they greatly limit the amount of information obtained about mortality. No information is obtained about trends, and there are only very limited observations of mortality for ages over 3. Moreover, the truncated history format has proved difficult to implement in the field.

In summary, maternity history data, such as those collected under the auspices of the World Fertility Survey and the Demographic and Health Surveys programmes, have provided a wealth of information on child mortality in developing countries. The main contribution of such data has been to the exploration of differentials and associations in child mortality rather than to the determination of levels and trends, because of the small sample sizes typically involved in surveys of this type.

E. EVALUATION OF CHILD MORTALITY ESTIMATES

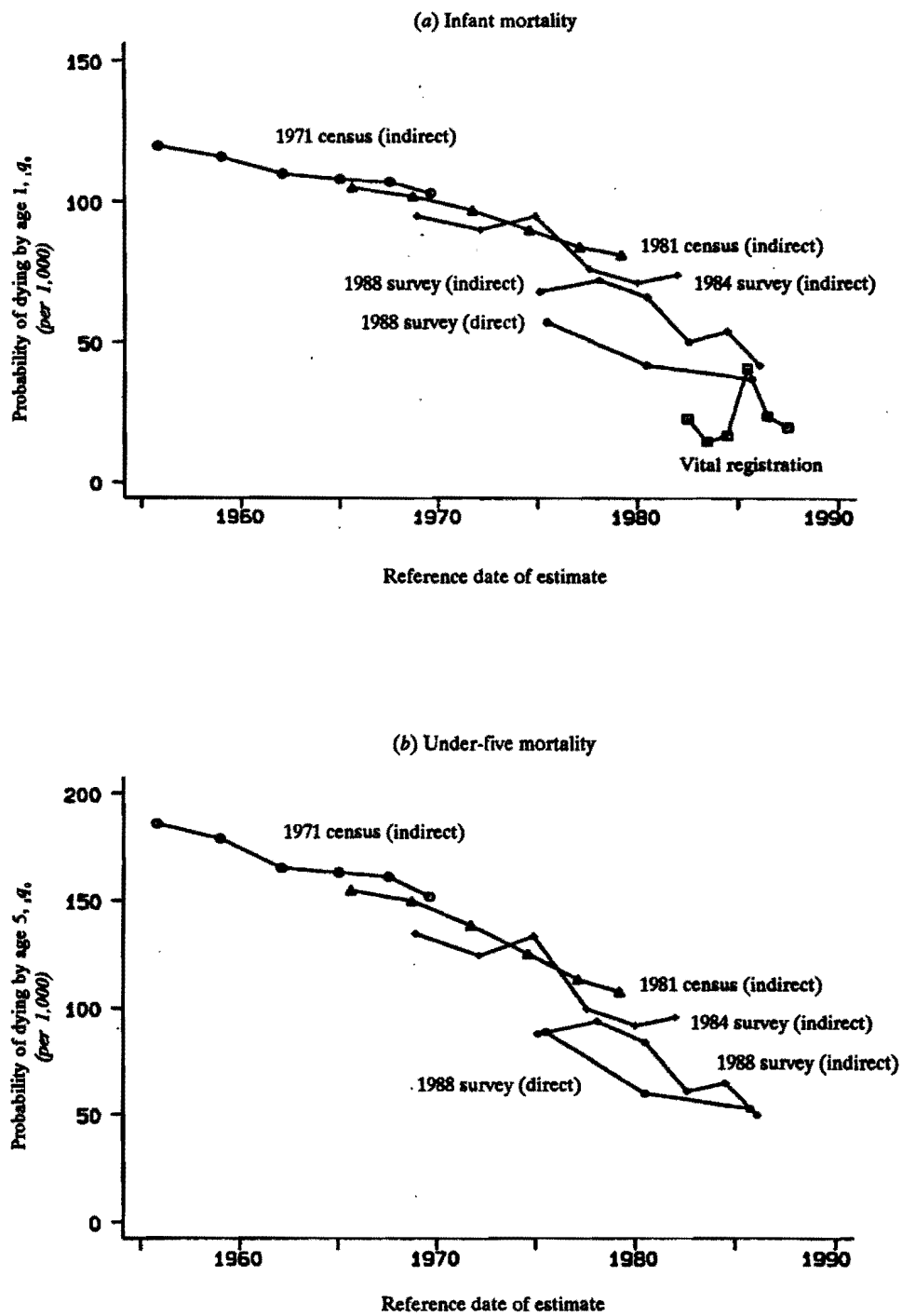
The foregoing discussion was included to provide a basis for understanding how to evaluate estimates of child mortality from different sources. Two approaches to evaluation can be used: the "common index" approach, in which estimates from different sources are converted into an equivalent standard indicator for graphical comparison; and the inter-survey change approach, whereby consistency of reporting at successive surveys is assessed.

"Common index" approach

Particular types of data suffer from certain types of error, and the patterns of these errors can often be seen in a comparison of estimates from different sources. To make such comparisons, estimates from different sources must be converted into comparable indices with comparable reference times. The conversion into a common index (the probability of dying by age 5, ${}_5q_0$, is a good choice because of its robustness to choice of mortality pattern) is made through a system of model life-tables. Comparable reference times are approximated by locating indirect estimates at their reference time-points and locating other measures at the approximate mid-point of the exposure to risk period underlying them. The different estimates, in comparable forms, are displayed graphically in order to show the pattern and extent of agreement and disagreement. An attempt can then be made to explain the inconsistencies in terms of the known strengths and weaknesses of the various methods.

Data for Botswana can be used to illustrate the common index approach. Brass questions were included in the 1971 and 1981 censuses and in a household survey (Family Health Survey I) in 1984, providing three series of indirect estimates. In 1988, Family Health Survey II (DHS) collected maternity histories, providing both direct and indirect estimates of child mortality. Vital registration provides numbers of births and infant deaths for the mid-1980s. Figure V(a) shows estimates of the infant mortality rate obtained either directly from the 1988 DHS and vital registration or indirectly by converting ${}_5q_0$ estimates into ${}_1q_0$ equivalents using the Coale-Demeny South model life-tables. The two censuses show a very consistent downward trend in the infant

Figure V. Estimates of infant and child mortality, Botswana, various sources



Source: Chapter IV of the present publication.

mortality rate, falling from about 120 in 1955 to about 80 in 1980. The indirect estimates from the 1984 survey are a bit more erratic than the census estimates and appear to fluctuate around a somewhat lower level, although the difference is not large. The indirect estimates from the 1988 DHS are still more erratic and again appear to fluctuate around an even lower level. The direct estimates from DHS show a smoother decline but around a substantially lower level than the DHS indirect estimates. The vital registration estimates are very erratic and are below any other estimates except that for 1985, which shows a sharp spike. The comparison suggests that the vital registration estimates are too low. The substantial difference between the direct and indirect estimates from DHS suggests that the direct estimates may have been reduced by overreporting age at death in the maternity history; deaths around age 1 were probably reported as occurring at 12 months, thus taking them out of the infant mortality rate. The general comparison of the DHS estimates with those from other sources suggests that the former figures are systematically too low. This apparent error could be due either to sampling problems or to omission of dead children from the DHS histories. The greater variability of the survey-based estimates in comparison with the census-based estimates can almost certainly be ascribed to the sampling errors affecting the surveys; similar examples are given throughout this volume.

Figure V(b) shows a comparison of estimates of q_0 for Botswana. In this case, the indirect estimates have been converted into equivalent q_0 values, again using the Coale-Demeny South family of model life-tables, whereas the maternity history estimates provide direct measures. No estimates are available from vital registration. The basic pattern is much the same as in figure V(a) except that the difference between the direct and indirect estimates from DHS has narrowed considerably. Otherwise, the census estimates are smooth and consistent, the 1984 survey estimates are more erratic and somewhat lower, and the 1988 DHS estimates are even more erratic and even lower. The improved consistency between the DHS direct and indirect estimates offers support for the view that the differences in the infant mortality rates were largely due to heaping of age at death on 12 months.

Inter-survey change approach

When working with surveys collecting data on aggregate numbers of children ever born and dead that are conducted about five years or about 10 years apart, it is possible to compare the average number of children ever born and the average number of children that died at two time-points for the same cohort of mothers. For example, with a five-year interval between surveys, it is possible to compare the average parity and average number of children dead for women aged 25-29 at the first survey with those for women aged 30-34 at the second survey. Since the women aged 30-34 at the second survey are the survivors of the women aged 25-29 at the first, the change in average parity represents inter-survey child-bearing by the cohort (and cannot be negative), whereas the change in average numbers of dead children represents inter-survey child deaths for the cohort of mothers (and again cannot be negative). Implausible changes, whether large or small, indicate changes in sampling or reporting quality and provide a warning against naïve acceptance of the estimates. These comparisons cannot by themselves indicate which, if either, survey is wrong, although comparisons with other estimates available for the population may offer some clues.

TABLE 1. COMPARISONS OF CHILDREN EVER BORN AND CHILDREN DEAD BY AGE GROUP OF MOTHER, BOTSWANA, 1984 AND 1988

Age group	Average parity		Average number of children dead	
	1984	1988	1984	1988
15-19	0.25	0.26	0.010	0.009
20-24	1.44	1.17	0.120	0.053
25-29	2.87	2.55	0.250	0.155
30-34	4.16	3.70	0.412	0.215
35-39	5.36	5.09	0.740	0.418
40-44	6.27	5.43	0.853	0.527
45-49	6.84	5.75	1.067	0.556

Data for Botswana from Family Health Survey I (1984) and from Family Health Survey II (1988, DHS) are used here as an example. Table 1 compares the average numbers of children ever born

and the numbers dead by age group from the two surveys. The two surveys were not conducted exactly five years apart—the interval was close to 4.5 years—so the correspondence between age groups and cohorts is not exact. It is, however, close enough to provide a valuable consistency check. The women aged 20-24 at the time of the 1984 survey would have been aged about 24.5-29.5 at the time of the 1988 survey; therefore, some 90 per cent of women from the first cohort would be identified in the 25-29 age group at the second survey. Comparing the average numbers of children ever born in columns (2) and (3) of table 1, each cohort adds to its average parity between 1984 and 1988 except for the 1984 cohort aged 40-44, whose parity declines from 6.27 in 1984 to 5.75 for age group 45-49 in 1988; the increment for the cohort aged 35-39 in 1984, from 5.36 to 5.44, is also suspiciously small. Thus, the numbers of children ever born reported in 1988 are not consistent with the numbers reported in 1984, at least for older women. The omission of children ever born to older women in the second survey appears to be the likely explanation, although sampling error cannot be ruled out.

Comparison of the average numbers of children that died reported in the two surveys and shown in table 1, columns (4) and (5), reveals more serious

inconsistencies. From the cohort aged 25-29 in 1984 upward, the average number of children dead is lower (or the same, for the cohort aged 30-34) in 1988 than in 1984. For the cohorts aged 35-39 and 40-44 in 1984, the differences are very large: 0.74 dead child per mother in 1984 for women aged 35-39 falls to 0.53 for women aged 40-44 in 1988; and 0.85 for women aged 40-44 falls to 0.56 for women aged 45-49. The numbers of dead children reported in 1988 are clearly well below the numbers reported in 1984, explaining the lower direct and indirect estimates of mortality derived from the 1988 survey. The lower reporting may be due either to greater omission of dead children in 1988 or to sampling problems in 1988; the decline in both children ever born and children dead and the very early age (25-29) at which the differences become evident suggest sampling problems rather than omission levels as the source of the problem. The consistency of the two censuses and the 1984 survey strongly suggests that it is the 1988 survey which is incorrect.

NOTE

¹ Including the countries of Africa, Asia (excluding Japan), Latin America and Oceania (excluding Australia and New Zealand).

II. MAIN FINDINGS

The presentation in comparable format of the basic data related to child mortality for a large majority of the developing countries provides an opportunity to compare the results of different methods of measurement. The mortality estimates presented in chapter IV come from census data, survey data and civil registration data, using both direct and indirect methods. By comparing the estimates obtained using different methods and by making some evaluation of the data, conclusions can be drawn about the relative performance of the methods themselves.

The comparable estimates also make it possible to examine a variety of aspects of child mortality. The aspects reviewed here are mortality levels (as indicated by probabilities of dying by age 5, q_0) around 1960 and around 1985, and mortality trends (as indicated by the average annual absolute change and the annual rate of change in q_0 during the period 1960-1985 or any shorter period, if the full range is not observed) by less developed region. The values of q_0 for 1960 and 1985 used in this discussion were taken from the country-specific graphs. The broad conclusions drawn depend very little upon the precise values chosen. Other analysts might select values that differ somewhat from those used here, but broad comparisons of levels and trends by world region would be very little affected.

A. EVALUATION OF DATA AND METHODS

The database that follows presents the results of a range of data collection and estimation methods. In many cases, results of different data sets are available for the same country for overlapping time periods. It is therefore possible to compare estimates obtained by each method, with a view to drawing conclusions about appropriate data collection and analysis strategies.

The first point to note is that this volume contains examples of failure for every method available. In some countries, vital registration clearly underestimates infant mortality. There are countries in which maternity histories have resulted in underestimates, those in

which Brass questions included in censuses or household surveys have resulted in underestimates and those in which longitudinal surveys have produced poor results. The conclusion is that there is not one best method for measuring child mortality. All methods require careful survey instrument design, careful sample design, careful training and adequate supervision in order to be successful; attention also needs to be given to data-editing and imputation procedures.

The initial evaluation is to take those countries with vital registration reported to be complete and compare the estimates from other sources against the yardstick of the vital registration estimates. The mortality indicator used is the infant mortality rate, q_0 . The number of countries with supposedly complete vital registration data and information from other sources is quite small. Of the countries or areas with vital registration reported as complete, Hong Kong, Israel, Mauritius, Puerto Rico and Singapore have no other relevant basis for estimation. For a number of other countries (Egypt, El Salvador, Guatemala, Jamaica, and Trinidad and Tobago), other sources show that vital registration is not sufficiently complete to provide a good basis for measuring child mortality. Of the countries that remain, Brass questions included in censuses give estimates that agree very closely with recent vital registration data in Costa Rica, Cuba, Kuwait and Malaysia (data for Peninsular Malaysia only). In Chile and Uruguay, indirect estimates based on census data for younger women agree reasonably well with vital registration data, but reports of older women give clear underestimates of child mortality. In Argentina (and also in Egypt by comparison with other sources), Brass questions in censuses underestimate child mortality. Brass questions included in surveys, including maternity history surveys, appear to fare rather better, giving apparently satisfactory results in Costa Rica, Cuba, Egypt, El Salvador, Guatemala, Jamaica, Sri Lanka, and Trinidad and Tobago. Direct estimates from maternity histories also appear to do quite well; agreement is particularly good in Malaysia, but in many cases the direct estimates from maternity histories fall below other estimates.

The second approach to evaluation used is to compare estimates derived from Brass questions with those obtained from maternity histories. Here, the mortality indicator used is the probability of dying by age 5, q_0 . A total of 42 countries have both direct and indirect estimates from independent sources. Comparisons of direct and indirect estimates from the same responses, as can be made for the WFS and DHS maternity history data, are not included in this comparison unless the indirect estimates are based on a largely independent household survey, as in the case of the WFS programme that employed an extended household survey. Estimates derived from each source are classified by type: indirect estimates from censuses; indirect estimates from household surveys; and direct estimates from maternity histories. They are then rated as good, if they fit well with what appears to be the true trend in child mortality for the country; as indifferent, if the fit is reasonable or if the true trend is very uncertain; or as poor, if they differ substantially in overall level or trend from the supposedly true trend. The numbers of countries with each rating are shown by region in table 2. It should be noted that an individual country can appear more than once in the same part of the table, for example, if it had one census giving estimates rated as good and another census giving estimates rated as poor.

Both for the developing countries as a whole and for the major less developed regions, roughly comparable numbers of countries have good estimates of child mortality derived from each of the three types of survey. Good estimates have been derived using indirect methods applied to census data for 23 countries, using indirect methods applied to survey data for 21 countries and direct calculations applied to maternity history data for 20 countries. Roughly comparable numbers of countries have obtained poor estimates indirectly from censuses and surveys (seven and eight, respectively), whereas a much higher number of countries (17) have had poor results using maternity histories. Indifferent results, like good results, appear to be evenly distributed by region and by survey type. These figures underline the conclusion stated earlier: there is no failure-proof method for measuring child mortality in the developing countries. The higher proportion of poor results obtained from maternity history surveys probably reflects the greater sensitivity of this approach to high-quality training and supervision.

It is worth carrying this consideration of data quality a bit further by looking at the types of error frequently encountered in the child mortality estimates obtained from different sources. Census data sometimes just give series of estimates that are

TABLE 2. NUMBER OF COUNTRIES BY RATING OF TYPES OF CHILD MORTALITY ESTIMATES, BY REGION

Data source	Rating	Number of countries			
		Africa	Asia	Latin America	Total
Indirect estimates from census	Good	8	5	10	23
	Indifferent	0	5	8	13
	Poor	3	2	2	7
	Total	11	12	20	43
Indirect estimates from surveys	Good	9	5	7	21
	Indifferent	3	3	8	14
	Poor	3	3	2	8
	Total	15	11	17	43
Direct estimates from maternity histories	Good	8	5	7	20
	Indifferent	2	6	6	14
	Poor	6	5	6	17
	Total	16	16	19	51

obviously too low; clear examples are the 1976 census of Lesotho, the 1976 census of Egypt and the 1971 and 1981 censuses of Nepal. General omission of children who have died is the probable explanation. A more common problem with census results, however, is to estimate child mortality trends that are too flat, that is, they fail to show enough decline over time. Examples of this type are the 1986 census of Egypt, the 1971 and 1980 censuses of Indonesia, the 1970 and 1980 censuses of Argentina and the 1970 and 1982 censuses of Chile. This problem probably arises from omission of dead children that increases with age of mother, and for Argentina and Chile, it may be associated with high levels of non-response and inappropriate imputation procedures. Indirect estimates based on survey data are in some cases just too low (for example, the 1983 Contraceptive Prevalence Survey (CPS) in Kenya, the 1978 CPS in Costa Rica or the 1979 CPS in Bangladesh) but appear to suffer less than censuses from trend-flattening. Direct estimates based on maternity histories are in a few cases just too low (an example is the Ghana Fertility Survey in 1980), but a more frequent problem is a flattening of trends, such that estimates for the prior five years are consistent with other sources, but estimates for periods further in the past fall below the apparent true trend line. Examples of this latter error can be found in the 1989 Kenya DHS, the 1987 Guatemala DHS and the 1977 Venezuela WFS, among others. The most likely explanation for this effect is progressive omission of child deaths the longer ago in the past that they occurred.

The main conclusion to be drawn from these errors is that the available methods for estimating child mortality in the developing countries measure the recent level of mortality better than they measure trends. For this reason, it is important to carry out regular surveys of child mortality in order that trends over time can be traced from estimates for time periods up to five years prior to the survey, rather than by relying upon the internal detail of any one data set. A second conclusion is that no one method of data collection or analysis has a monopoly on meeting all data needs. Brass questions included in censuses often produce excellent estimates of child mortality and provide a level of geographical detail unobtainable in any other way. Maternity histories included in small-scale household surveys provide

information about age patterns of child mortality and about social and demographic differentials in child mortality. Brass questions included in general-purpose household surveys provide an inexpensive and opportunistic approach to updating estimates of child mortality levels and trends. The final conclusion is the importance of quality control in data collection and analysis.

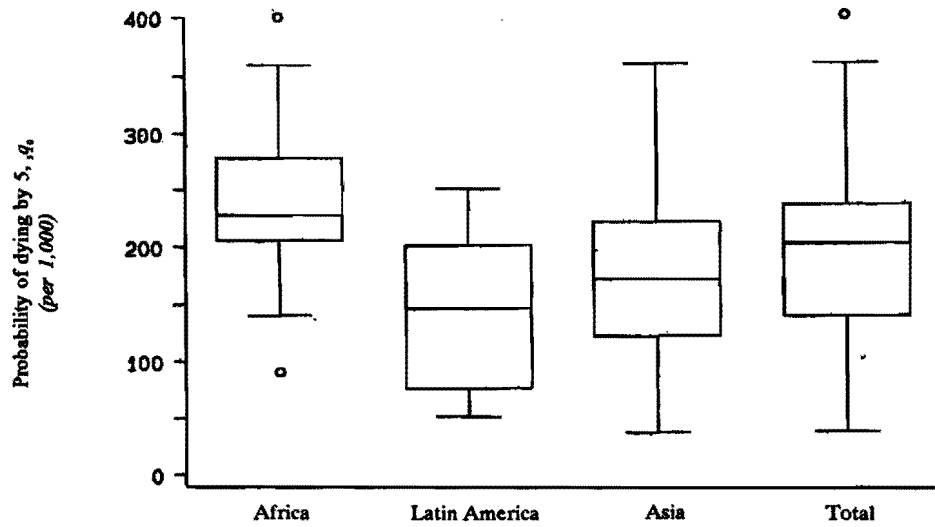
B. BROAD LEVELS AND TRENDS OF CHILD MORTALITY, 1960-1985

Measures of levels and trends by region are shown below in the form of box-and-whisker plots. These plots consist of a central box, the upper limit of which marks the seventy-fifth percentile of the observations and the lower limit the twenty-fifth percentile; a line across the box indicates the median or central value. Two lines extend upward and downward from the box; these lines mark the range of substantial numbers of observations.¹ Observations beyond this range are individually plotted. Such plots thus indicate the central tendency of the data and the spread around the centre.

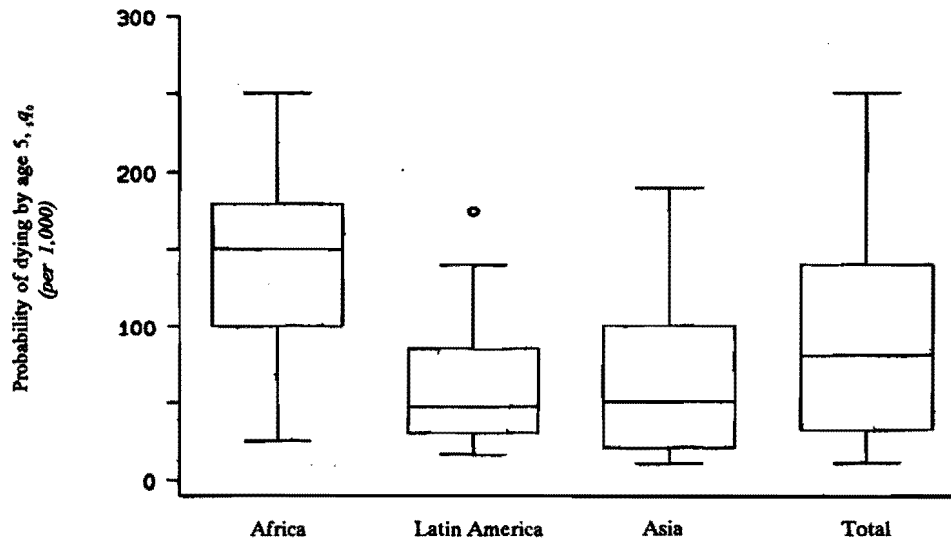
Figure VI shows box-and-whisker plots for all developing countries for which a good estimate could be made of the probability of dying by age 5, q_0 , in 1960, a total of 64 countries, by region. Among all the developing countries with information, the median q_0 was 200 per 1,000 live births. Child mortality was lowest, at a median value of 145 per 1,000, in Latin America; somewhat higher, with a median of 170 per 1,000, in Asia and Oceania; and clearly highest, with a median of 228 per 1,000, in Africa. These estimates are evidently restricted to the countries included here and may be higher if information on the rest of the countries in each region was available.

Figure VII shows comparable box-and-whisker plots for 1985, with a total of 55 observations. Child mortality had fallen sharply in all three regions, the median q_0 s being 80 overall, 47 for Latin America, 50 for Asia and Oceania, and 155 for Africa. The sharp declines have to be interpreted with caution, however, since the countries with observations may not be representative of all countries, and also because the degree of accuracy of the data can change over time.

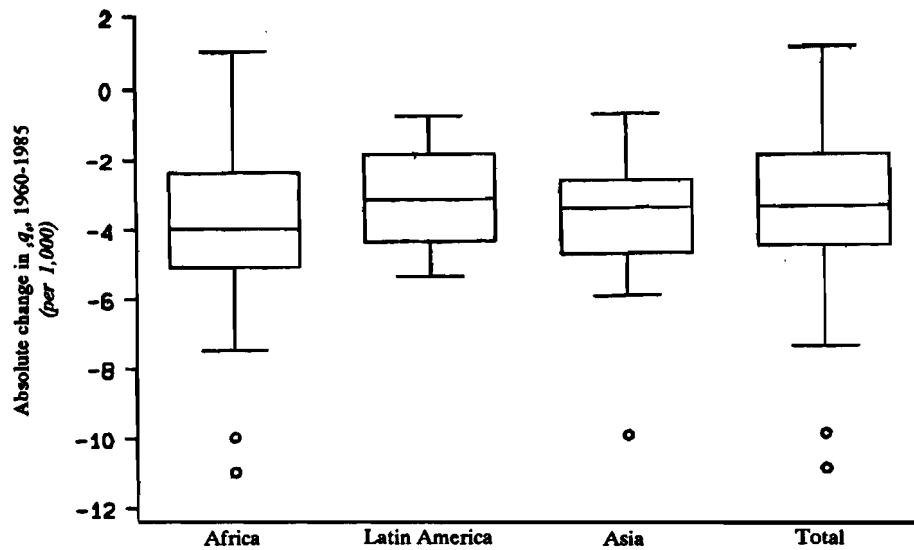
**Figure VI. Level of child mortality in 1960, by region,
based on 64 observations**



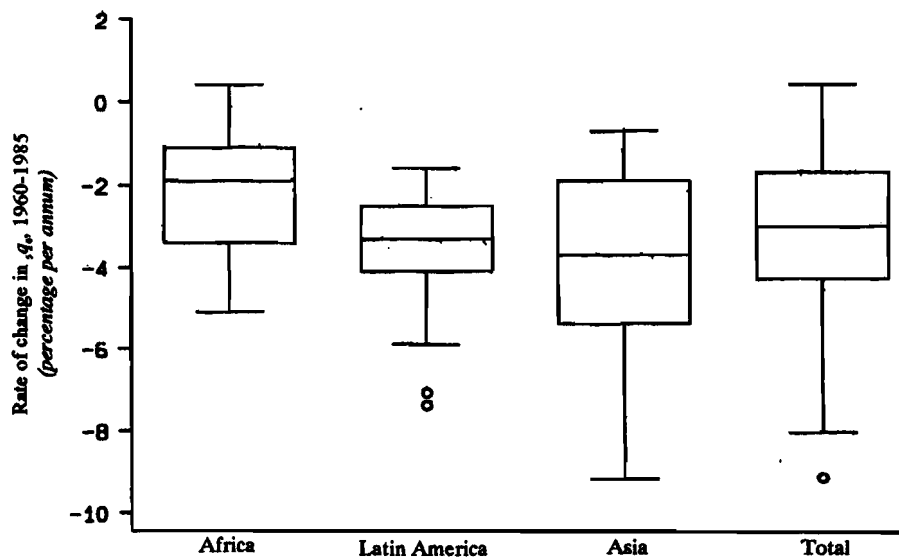
**Figure VII. Level of child mortality in 1985, by region,
based on 55 observations**



**Figure VIII. Absolute change in child mortality, 1960-1985,
by region, based on 79 observations**



**Figure IX. Rate of change in child mortality, 1960-1985,
by region, based on 79 observations**



Figures VIII and IX look specifically at the question of rate of change of child mortality during the period 1960-1985.² Figure VIII shows the absolute annual change in ${}_5q_0$ for all developing countries and lessdeveloped regions. For the developing countries as a whole, the probability of dying by age 5 fell, on average, by almost four points per 1,000 per annum between 1960 and 1985 among the countries included in this comparison.

An alternative way of looking at the pace of child mortality decline is to compare annual rates of change. Figure IX shows box-and-whisker plots of annual exponential rates of change for all developing countries with adequate estimates by region. Overall, among the countries included here, child mortality declined by about 3 per cent per annum during the period 1960-1985; Asia and Latin America both experienced rates slightly above this average, whereas the rate of decline in Africa was only about 2 per cent per annum. Again, these figures may be somewhat different if data for all developing countries were available.

In summary, child mortality has probably fallen by more than half in the developing countries in the two and a half decades from 1960 to 1985. However, child mortality tended to decline by a constant absolute

amount over the period, leaving absolute differentials in 1985 much as they were in 1960. In a majority of countries, child mortality declines were basically linear over the 25-year period. In sub-Saharan Africa, there are a few countries where available data show that child mortality declines may have stalled or even reversed, although the observed trend could be due to poor data quality; and there are a handful of countries in which child mortality has fallen to such low levels that continued linear decline would be impossible. Otherwise, child mortality decline appears to have remained constant or even accelerated in the 1970s and early 1980s.

NOTES

¹ Strictly speaking, the lines or "whiskers" extend to the upper and lower adjacent values, which are defined as 1.5 times the interquartile range, rolled back to the nearest observation point.

² Figures VI and VII show values of ${}_5q_0$ for 1960 and 1985 only if reasonably secure estimates can be made for those specific years. In tables 1 and 2, however, measures of change in the period 1960-1985 are given if reasonably secure estimates can be made for any two time-points in the time interval.

III. GUIDE TO NOTATION AND LAYOUT OF DATABASE

Each developing country that had both an estimated population of 1 million or more in 1990 and some nationally representative data relevant to the estimation of child mortality between 1960 and 1990 appears as a separate section of the database. The requirement that a country should have nationally representative data resulted in the exclusion of some countries with substantial amounts of data pertinent to the estimation of child mortality, but none that is nationally representative. Each section follows a common pattern. First, data sources are reviewed in the order of vital registration, censuses and sample surveys. Value judgements about data quality are usually not included, but the geographical limitations of each data set, where known, are included.

A. LAYOUT OF DATA SOURCES

The existence of vital registration data is shown in terms of the reported completeness of registration of infant deaths. Countries report the completeness of their vital registration data to the United Nations Statistical Office. "Complete" means that, as assessed by the country, 90 per cent or more of events of a particular type are registered. "Incomplete" means that fewer than 90 per cent of events are registered; such data are usually of no value for monitoring either levels or trends of child mortality. Some countries simply do not report assessments of registration completeness, and this uncertain status is reported in the database.

Censuses are mentioned only if they included Brass questions on children ever born and children dead (or surviving), permitting the indirect estimation of child mortality. Surveys also are listed only if they collected data relevant to the estimation of child mortality. Surveys that collected maternity histories are listed first, followed by surveys that included Brass questions, followed by longitudinal follow-up surveys. Within each category, surveys are listed chronologically.

B. LAYOUT OF DATABASE

Within the database proper, estimates from vital registration are given first, followed by measures of child mortality from official life-tables. Estimates from censuses and surveys follow, in chronological order of data collection. Indirect estimates are presented in a standard form. Women are classified by five-year age groups from 15-19 to 45-49 (or for all age groups within this range for which data are available). Estimates of levels and reference dates are obtained using the Trussell (United Nations, 1983) or Palloni and Heligman (1986) methods. A single standard model life-table family is used for each country on the basis of available information on the age pattern of child mortality for the country. This model is used for indirect estimation and also for converting estimates into common indices ${}_1q_0$ and ${}_4q_0$ for comparison purposes. Maternity history and longitudinal survey data are presented in the form of ${}_1q_0$ and ${}_4q_0$ estimates, in general for a maximum of three five-year time periods, although in some duly noted cases, the estimates are for birth cohorts of children. References for the basic data are given below each table. Where the data are available in sufficient detail, both direct and indirect estimates based on maternity histories are presented. For those countries which participated in the World Fertility Survey programme and used an extended household sample, the indirect estimates given in the database are derived from the extended sample rather than the individual woman sample, and they can therefore be regarded as largely independent observations.

The estimates of ${}_1q_0$ and ${}_4q_0$ given in the tables are summarized by time period in the two graphs that complete each country section. Indirect estimates based on reports of women aged 15-19 are excluded from these graphs, on the grounds that the estimates are frequently distorted. For some countries with particularly rich data sources, it is not possible to

include all the estimates on the graph. Direct estimates from maternity history surveys and indirect estimates from censuses were always included when

available, but some other sets of estimates were not included, particularly where the overlap between sets of estimates is substantial.

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IV. INDIVIDUAL COUNTRY PROFILES

AFGHANISTAN

Vital registration

Completeness of registration of deaths is not reported.

Censuses

No censuses have collected relevant information.

Sample surveys

Brass questions were included in the National Demographic and Family Guidance Survey, 1972-1974. The survey was limited to the settled population.

NATIONAL DEMOGRAPHIC AND FAMILY GUIDANCE SURVEY, 1972-1974
(Indirect estimates, West model)

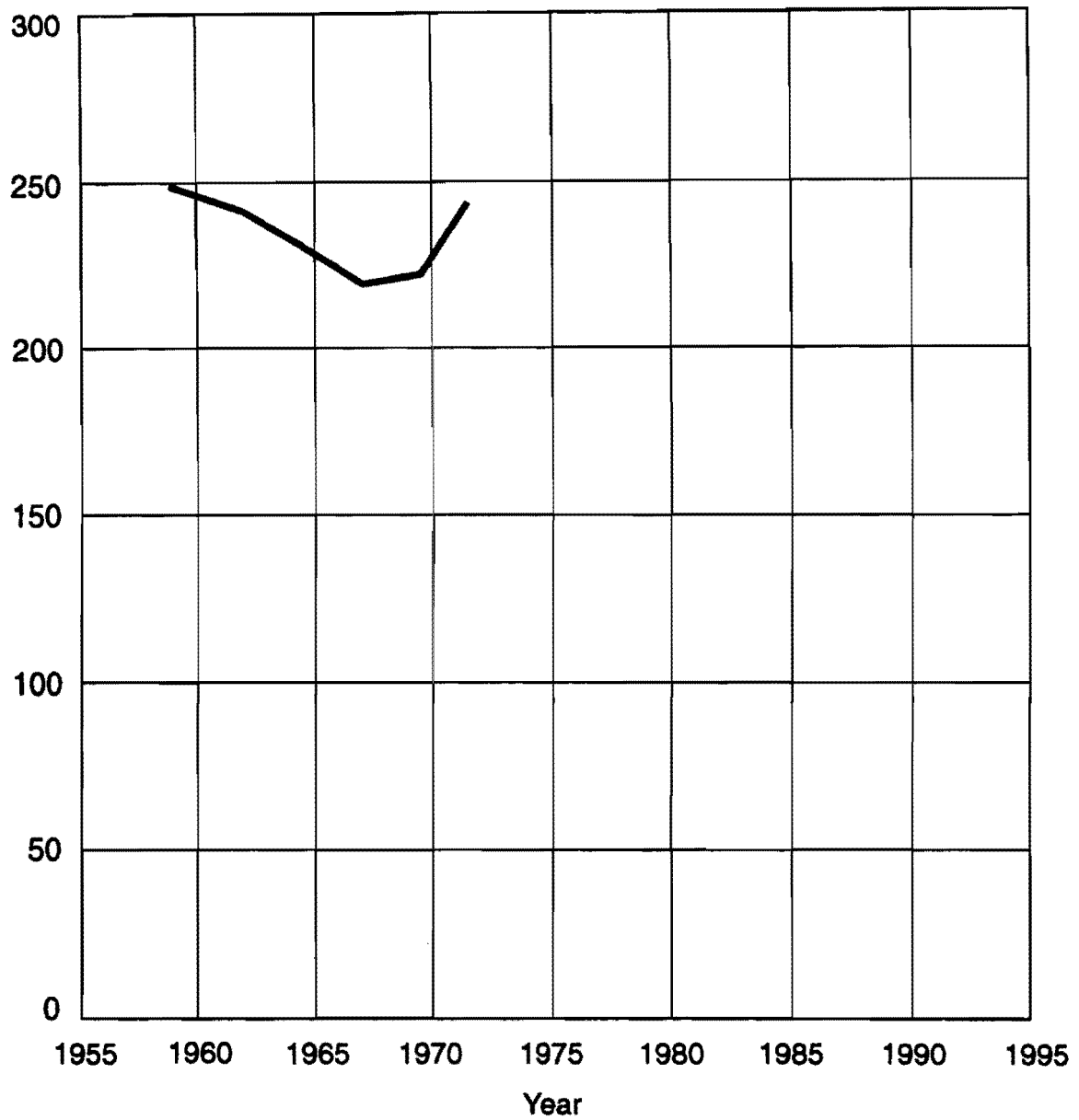
<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>190</i>	<i>90</i>
15-19	0.328	0.287	1972.8	296	431
20-24	1.807	0.296	1971.4	244	360
25-29	3.613	0.308	1969.4	223	332
30-34	5.219	0.327	1967.1	220	327
35-39	6.517	0.362	1964.5	231	343
40-44	6.928	0.400	1961.8	241	357
45-49	7.429	0.440	1958.9	249	368

Source: James Trussell and Eleanor Brown, "A close look at the demography of Afghanistan", *Demography* (Washington, D.C.), vol. 16, No. 1 (February 1979), p. 156, table A.5.

NOTE: Data were only published for urban and rural areas separately. National weighted averages were obtained by applying the proportion urban from the 1979 census.

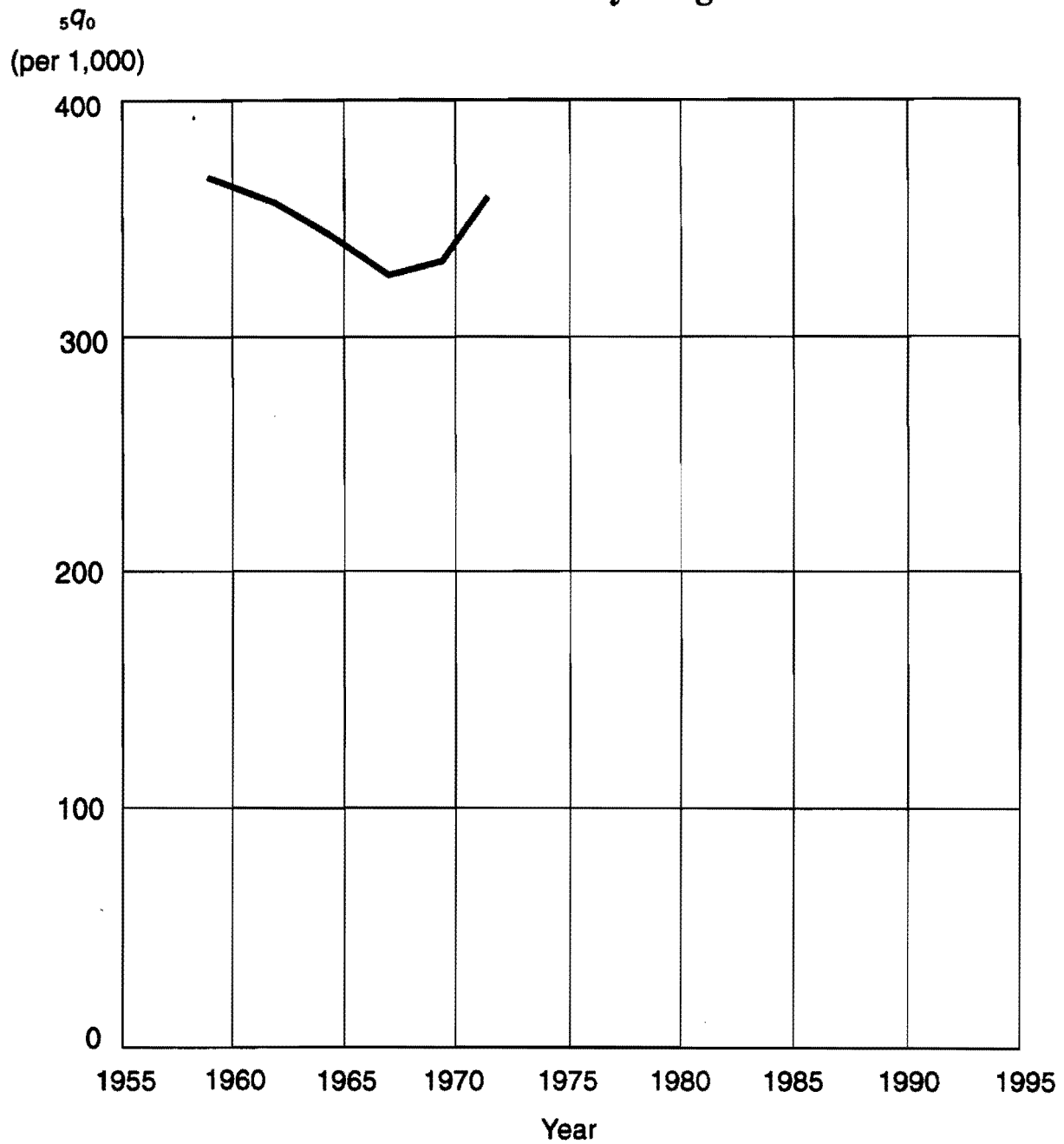
Infant mortality: Afghanistan

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(per 1,000)



— National Demographic and Family Guidance Survey, 1972-1974

Under-five mortality: Afghanistan



— National Demographic and Family Guidance Survey, 1971-1974

ALGERIA

Vital registration

Registration of deaths is reported to be incomplete. However, national life-tables have been based on registered deaths adjusted for estimated undercoverage.

Censuses

No relevant data are available.

Sample surveys

Brass questions were included in the Enquête fécondité of 1970, which was conducted for a subsample of the multi-round Enquête démographique of 1969-1971 (Tabutin, 1974).

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	113	1969	80	1978	70
1961	..	1970	79	1979	71
1962	..	1971	..	1980	64
1963	70	1972	..	1981	61
1964	57	1973	..	1982	56
1965	86	1974	..	1983	57
1966	80	1975	..	1984	57
1967	83	1976	88	1985	54
1968	90	1977	75	1986	49

Sources: *Annuaire statistique de l'Algérie*, 1981 and 1985-1986, No. 13 (Algiers, Office national des statistiques, 1981 and 1987).

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>		<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>190</i>	<i>590</i>		<i>190</i>	<i>590</i>
1977	127	177	1982	..	..
1978	112	153	1983	83	103
1979	..	..	1984	..	..
1980	103	152	1985	78	97
1981	85	113			

Sources: *Annuaire statistique de l'Algérie*, 1979, 1981, 1983-1984 and 1985-1986, No. 13 (Algiers, Office national des statistiques, n.d., 1981, 1985 and 1987).

ENQUÊTE DÉMOGRAPHIQUE, AUGUST 1969-MARCH 1971
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1969	1970
1969-1971	146	219

Source: Jacques Vallin, "La mortalité en Algérie", *Population* (Paris), vol. 30, No. 6 (novembre-décembre 1975), p. 1036, table 5.

ENQUÊTE FÉCONDITÉ, 1970
(Direct estimates)

Year	Infant mortality (per 1,000)	Year	Infant mortality (per 1,000)	Year	Infant mortality (per 1,000)
1955	129	1960	178	1965	126
1956	165	1961	146	1966	133
1957	168	1962	129	1967	126
1958	160	1963	131	1968	121
1959	169	1964	123	1969	136

Source: Dominique Tabutin, *Mortalité infantile et juvénile en Algérie*, Institut national d'études démographiques (INED) Travaux et documents, Cahier No. 77 (Paris, Presses universitaires de France, 1976), p. 83, table 28.

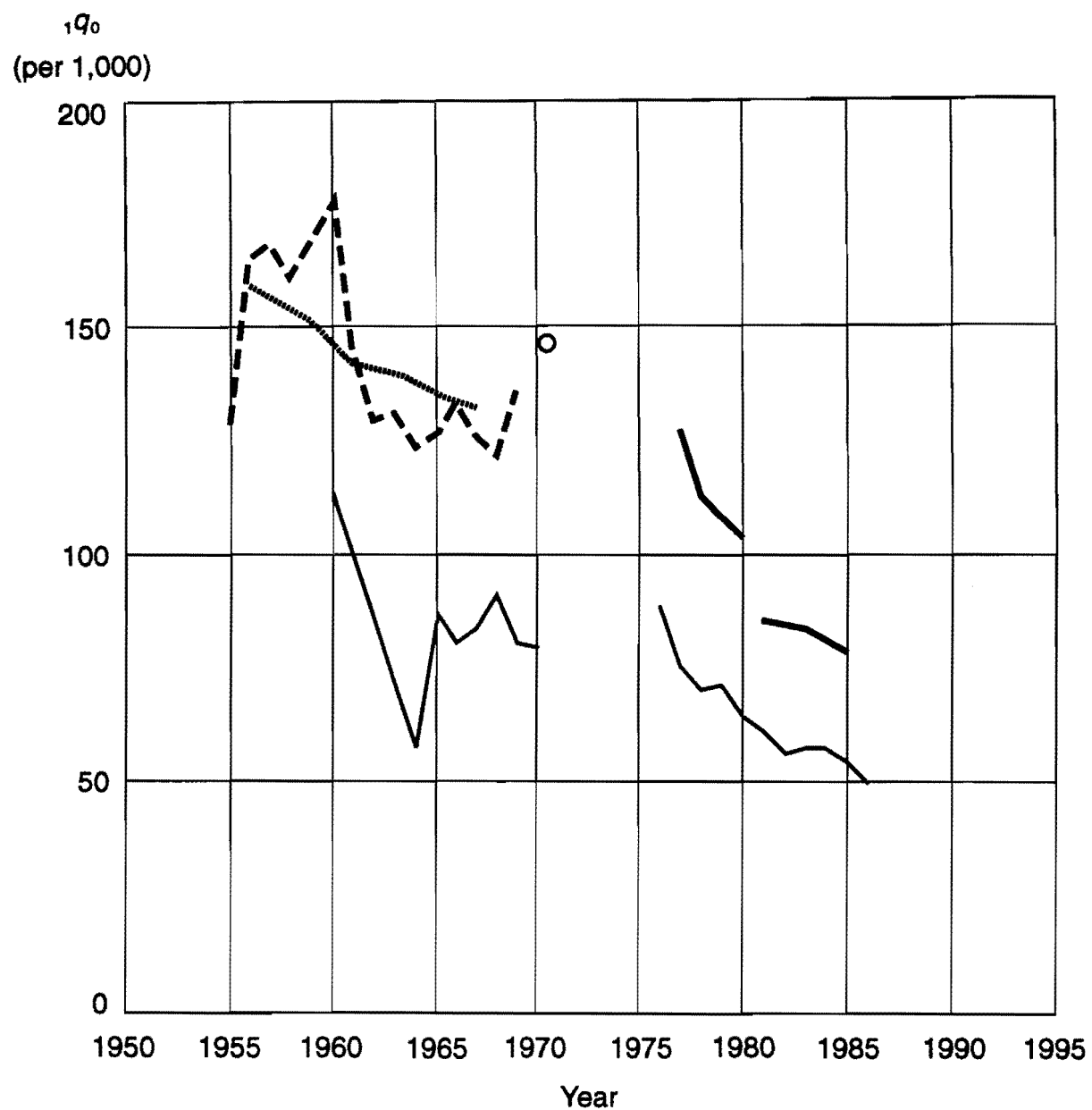
ENQUÊTE FÉCONDITÉ, 1970
(Indirect estimates, South model)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1969	1970
15-19	..	0.164	1968.7	110	166
20-24	..	0.186	1967.2	132	211
25-29	..	0.201	1965.4	134	217
30-34	..	0.221	1963.4	139	226
35-39	..	0.238	1961.2	142	232
40-44	..	0.275	1958.8	151	253
45-49	..	0.315	1955.8	159	270

Source: Dominique Tabutin, "Comparaison de diverses approches pour la mesure de la mortalité aux jeunes âges", *Genus* (Rome), vol. 33, No. 3-4 (1977), annex table 1.

^a $P_1/P_2 = 0.2950$; $P_2/P_3 = 0.5433$.

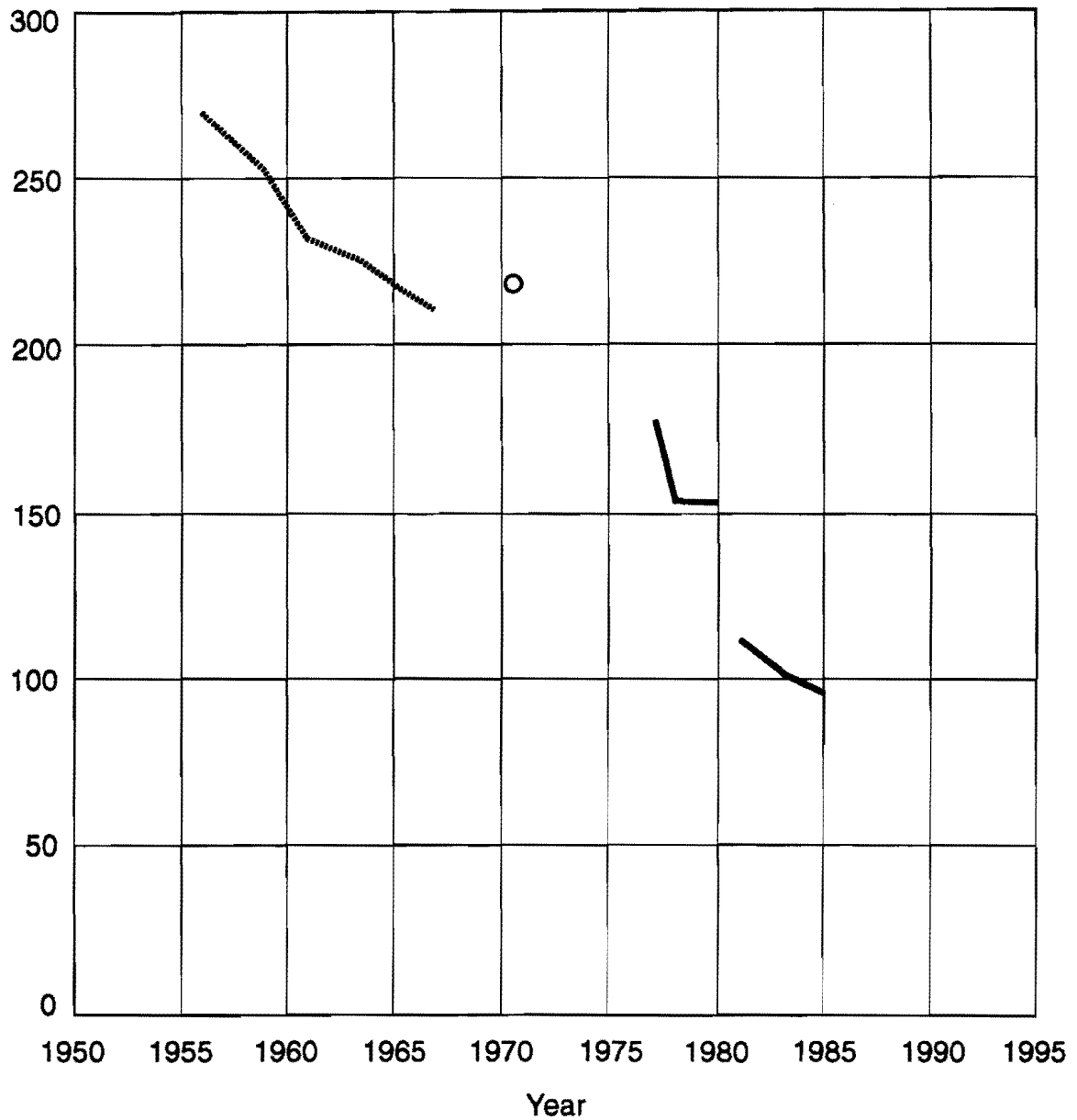
Infant mortality: Algeria



- Vital registration
- Life-tables
- Enquête démographique, 1969-1971 (direct)
- - Enquête fécondité, 1970 (direct)
- Enquête fécondité, 1970 (indirect)

Under-five mortality: Algeria

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(per 1,000)



— Life-tables

○ Enquête démographique, 1969-1971 (direct)

..... Enquête fécondité, 1970 (indirect)

ARGENTINA

Vital registration

The registration of births and deaths is reported to be complete. However, late registration and the tabulation of incomplete data are seen as problems (Pantelides, 1975). Life-tables have been calculated on the basis of vital registration and census data.

Censuses

Brass questions were included in the 1970 and 1980 censuses, although the data are tabulated only for samples of the censuses, and in the case of the 1970 data, are available only for age range 20-34. Data from the 1980 census appear to be flawed, possibly because of high levels of non-response combined with computerized imputation. Data from the 1991 census are not yet available.

Sample surveys

No nationally representative surveys collecting relevant data have been conducted.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	62	1970	59	1980	33
1961	59	1971	62	1981	34
1962	59	1972	57	1982	30
1963	62	1973	55	1983	30
1964	58	1974	49	1984	30
1965	57	1975	43	1985	26
1966	53	1976	46	1986	27
1967	55	1977	44	1987	27
1968	60	1978	40	1988	26
1969	52	1979	36	1989	23

Sources: Anuario estadístico de la República Argentina, 1979-1980 and 1983-1986 (Buenos Aires, Ministerio de Economía, Hacienda y Finanzas, Instituto Nacional de Estadística y Censos, n.d. and 1989), pp. 150 and 159, tables 6.12 and 6.13.1; and pp. 127 and 132, tables 5.6 and 5.7.2, respectively. *Estadísticas vitales: información básica, 1984-1985, 1986 and 1987*, Programa Nacional de Estadísticas de Salud, Series 5, No. 28, 29 and 31 (Buenos Aires, Ministerio de Salud y Acción Social, Dirección de Estadísticas de Salud, 1988, 1989 and 1990), pp. 18-19, tables 1A-1B; p. 28, table 8; and p. 17, table 1, respectively; *Estadísticas vitales, de recursos y producción de servicios cifras provisionales, 1989*, Programa Nacional de Estadísticas de Salud, No. 59 (Ministerio de Salud y Acción Social, Dirección de Estadísticas de Salud, 1990), p. 9, table 2; and unpublished data provided to the Instituto Nacional de Estadística y Censos of Argentina.

INFANT AND CHILD MORTALITY RATES FROM
NATIONAL LIFE-TABLES

Period	Mortality rate (per 1,000)	
	190	190
1959-1961	58	72
1969-1971	60	69
1980-1981	36	42

Sources: Zulma C. Camisa, *República Argentina: Evaluación y ajuste del censo de Población de 1960 por sexo y edad y tabla abreviada de mortalidad, 1959-1961*, CELADE Series C, No. 32 (Santiago, Chile, Centro Latinoamericano de Demografía, 1964), pp. 69-70, tables 28-29; María Müller, *La mortalidad en la Argentina: evolución histórica y situación en 1970* (Santiago, Chile, Centro Latinoamericano de Demografía and Centro de Estudios de Población, 1978), p. 53, table 1.a; and Argentina, *Tablas de mortalidad, 1980-1981: total y jurisdicciones*, Estudios INDEC, No. 10 (Buenos Aires, Argentina, Instituto Nacional de Estadística y Censos, 1988), p. 38, table 1.a.

CENSUS, 30 SEPTEMBER 1970
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
20-24	0.801	0.064	1968.0	59	71
25-29	1.656	0.058	1966.2	51	61
30-34	..	0.063	1964.1	54	64

Source: Susana Schkolnik, *Mortalidad infantil en la Argentina a partir de la muestra del Censo de 1970*, Serie Investigaciones Demográficas, No. 3 (Buenos Aires, Instituto Nacional de Estadística y Censos, 1975), p. 23.

NOTE: $P_1/P_2 = 0.217$.

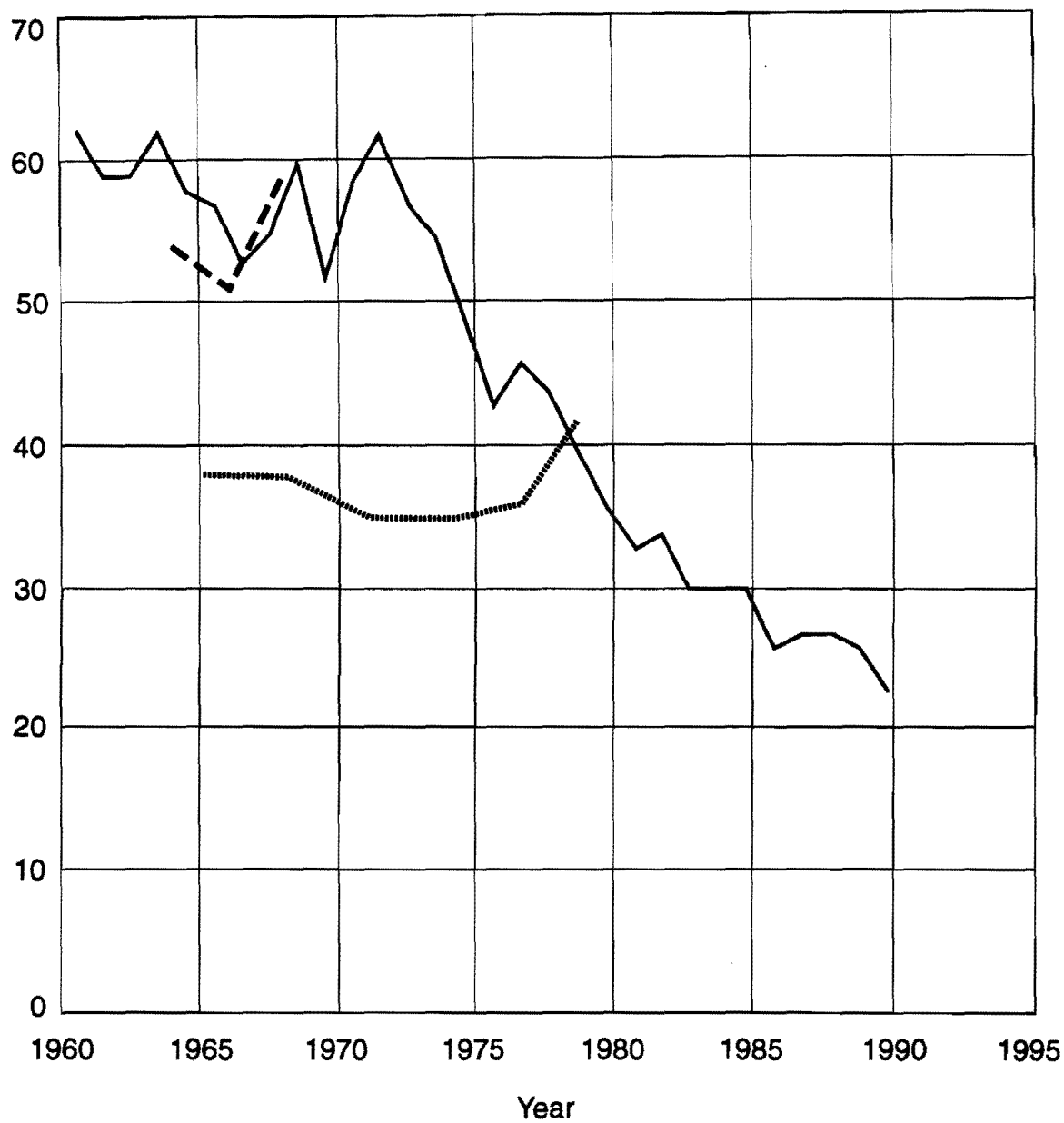
CENSUS, 22 OCTOBER 1980
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.136	0.058	1979.7	63	76
20-24	0.807	0.043	1978.4	42	49
25-29	1.624	0.040	1976.3	36	41
30-34	2.246	0.040	1973.9	35	40
35-39	2.648	0.042	1971.2	35	40
40-44	2.855	0.048	1968.2	38	44
45-49	2.823	0.053	1965.0	38	44

Source: *Censo Nacional de Población y Vivienda, 1980*, Series D, *Población: resumen nacional* (Buenos Aires, Ministerio de Economía, Hacienda y Finanzas, Instituto Nacional de Estadística y Censos, 1983), p. 67, table F.1.

Infant mortality: Argentina

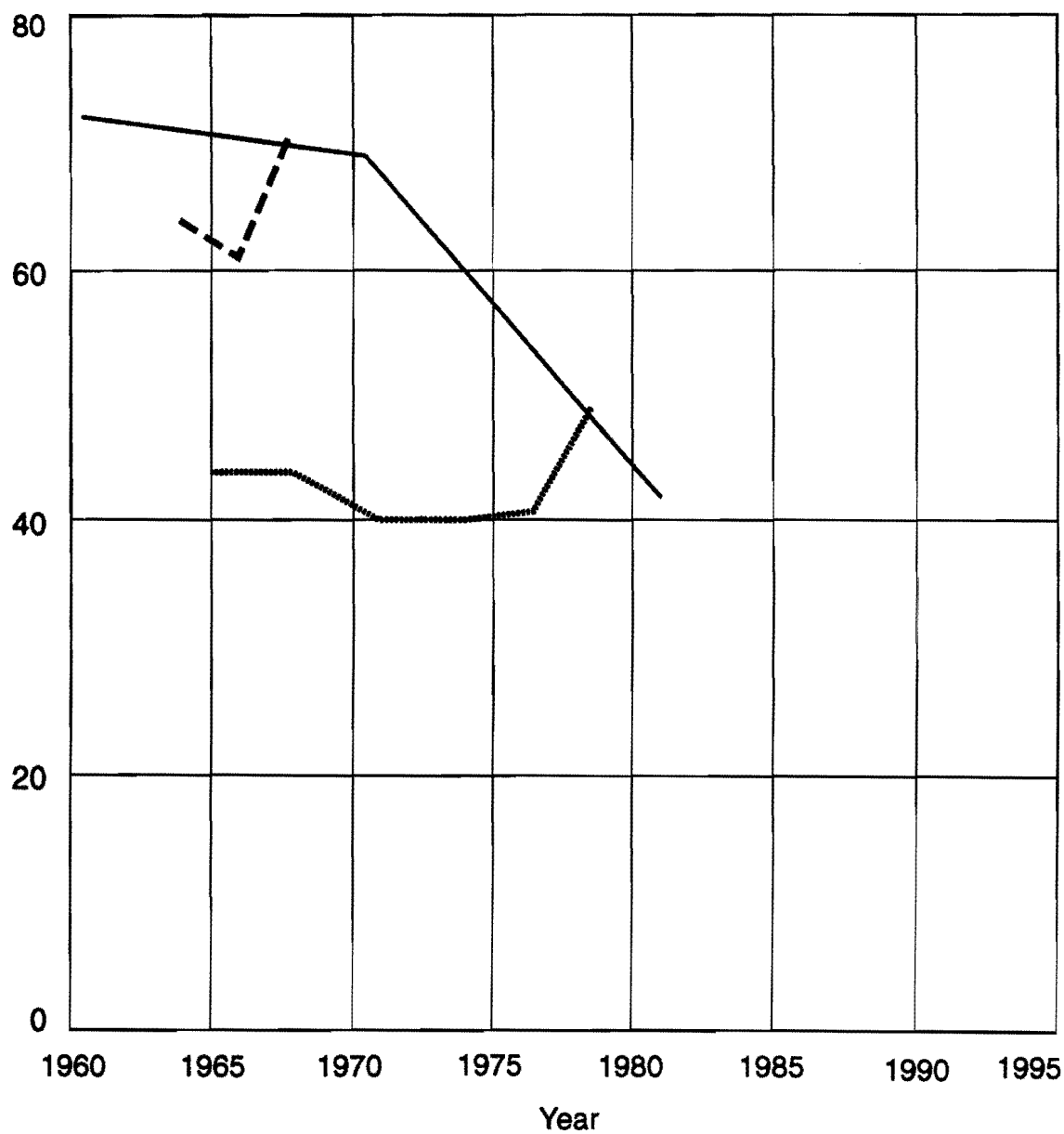
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(per 1,000)



— Vital registration
-- Census, 1970
..... Census, 1980

Under-five mortality: Argentina

${}_5q_0$
(per 1,000)



— Life-tables
-- Census, 1970
..... Census, 1980

BANGLADESH

Vital registration

Registration of deaths is reported to be incomplete. However, the Bangladesh Bureau of Statistics introduced a vital registration system (the Bangladesh Demographic Survey and Vital Registration, BDSVR) on a sample basis using a dual-record system.

Censuses

No censuses have collected relevant information.

Sample surveys

Maternity histories have been collected by Bangladesh Fertility Survey I (1975-1976, WFS) and II (1989); a truncated maternity history was collected in 1989 by the Contraceptive Prevalence Survey. Brass questions were included in the Bangladesh Retrospective Survey of Fertility and Mortality of 1974, and the Bangladesh CPS of 1979, 1981, 1983, 1985 and 1989, although the 1989 data are not published in a way that permits analysis. The Population Growth Estimation Experiment, a dual-record survey combining sample vital registration and a multi-round survey, was conducted from 1962 to 1965.

POPULATION GROWTH ESTIMATION EXPERIMENT, 1962-1965 (Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1965</i>
1964-1965	154	241

Source: National Research Council, Panel on Bangladesh, *Estimation of Recent Trends in Fertility and Mortality in Bangladesh*, Committee on Population and Demography Report, No. 5, (Washington, D.C., National Academy Press, 1981), p. 59, table 20.

BANGLADESH DEMOGRAPHIC SURVEY AND VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1980	101	1985	112
1981	112	1986	116
1982	122	1987	113
1983	118	1988	116
1984	122		

Sources: *Statistical Yearbook of Bangladesh, 1984-85, 1989 and 1990* (Dhaka, Bangladesh Bureau of Statistics, n.d.), p. 122, table 2.55; p. 65, table 2.33; and p. 65, table 2.33, respectively.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

Period	Mortality rate (per 1,000)	
	190	190
1981	112	174
1983	118	199
1987	113	160

Sources: *Statistical Yearbook of Bangladesh, 1984-85, 1989 and 1990* (Dhaka, Bangladesh Bureau of Statistics, n.d.), p. 122, table 2.55; p. 65, table 2.33; and p. 65, table 2.33, respectively.

BANGLADESH RETROSPECTIVE SURVEY OF FERTILITY AND MORTALITY, 1974
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.385	0.186	1973.1	179	304
20-24	1.847	0.203	1971.7	157	261
25-29	3.485	0.213	1969.8	146	238
30-34	4.917	0.228	1967.6	143	233
35-39	5.861	0.240	1965.1	142	231
40-44	6.194	0.264	1962.2	148	242
45-49	6.084	0.284	1958.3	150	247

Source: *Report on the 1974 Bangladesh Retrospective Survey of Fertility and Mortality* (Dhaka, Census Commission, 1977), pp. 28 and 37, tables 3 and 8.

BANGLADESH FERTILITY SURVEY, DECEMBER 1975-MARCH 1976
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1961-1966	156	229
1966-1971	131	202
1971-1976	135	222

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 59.

BANGLADESH FERTILITY SURVEY, DECEMBER 1975-MARCH 1976
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.497	0.235	1975.1	*	*
20-24	2.301	0.205	1973.6	157	261
25-29	4.200	0.227	1971.7	153	253
30-34	5.663	0.239	1969.4	149	244
35-39	6.697	0.254	1966.8	149	245
40-44	7.058	0.276	1963.8	153	253
45-49	6.795	0.306	1959.9	160	267

Source: World Fertility Survey standard recode tapes.

* Denotes value below a level-1 model life-table.

BANGLADESH CONTRACEPTIVE PREVALENCE SURVEY, SEPTEMBER 1979-JANUARY 1980
(Indirect estimates, South Asian pattern)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.51	0.143	1978.8	126	201
20-24	1.94	0.190	1977.1	144	236
25-29	3.50	0.194	1975.3	134	215
30-34	4.95	0.180	1973.2	118	184
35-39	5.97	0.183	1971.0	114	177
40-44	6.45	0.185	1968.3	110	171
45-49	6.54	0.227	1964.5	125	199

Sources: *Bangladesh Contraceptive Prevalence Survey Report, 1979* (Dhaka, Ministry of Health and Population Control, National Institute for Population Research and Training; and Westinghouse Health Systems, 1981), p. 91, table 6.8; and Mitra and Associates, *Bangladesh Contraceptive Prevalence Survey, 1985: Secondary Analysis* (Dhaka, n.d.), table 11.

^a Average parity for ever-married women adjusted by applying the proportion ever married from the 1981 census.

BANGLADESH CONTRACEPTIVE PREVALENCE SURVEY, MAY-AUGUST 1981
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.5	0.144	1980.4	129	206
20-24	2.0	0.190	1978.8	146	238
25-29	3.7	0.216	1976.9	147	241
30-34	5.4	0.222	1974.9	140	227
35-39	6.4	0.234	1972.6	139	226
40-44	7.3	0.274	1970.0	152	251
45-49	7.6	0.303	1966.2	159	264

Source: Mitra and Associates, *Bangladesh Contraceptive Prevalence Survey, 1985: Secondary Analysis* (Dhaka, n.d.), tables 11 and 13.

BANGLADESH CONTRACEPTIVE PREVALENCE SURVEY, OCTOBER 1983-JANUARY 1984
(Indirect estimates, South Asian pattern)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.609	0.196	1982.9	169	285
20-24	2.168	0.197	1981.1	148	242
25-29	3.792	0.207	1979.2	141	228
30-34	5.445	0.230	1977.2	144	235
35-39	6.496	0.249	1975.0	147	240
40-44	7.307	0.282	1972.3	156	259
45-49	7.491	0.268	1968.6	144	234

Source: Sarah Harbison and S. N. Mitra, eds., *Bangladesh Contraceptive Prevalence Survey, 1983: Special Topics*, Population Technical Assistance Project (Arlington, Virginia, International Science and Technology Institute, 1986), p. 98, table 6.2.

^a Average parity for ever-married women adjusted by applying the proportion ever married from the 1981 census.

BANGLADESH CONTRACEPTIVE PREVALENCE SURVEY, DECEMBER 1985-APRIL 1986
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.4	0.165	1985.1	164	275
20-24	2.0	0.188	1983.6	146	239
25-29	3.6	0.197	1981.7	135	217
30-34	5.1	0.229	1979.3	143	234
35-39	6.5	0.250	1976.5	147	241
40-44	7.4	0.265	1973.4	148	243
45-49	7.2	0.287	1969.4	152	250

Source: Mitra and Associates, *Bangladesh Contraceptive Prevalence Survey, 1985: Secondary Analysis* (Dhaka, n.d.), tables 11 and 13.

BANGLADESH FERTILITY SURVEY, DECEMBER 1988-APRIL 1989
(Direct estimates)

Year of birth of child	Mortality rate (per 1,000)	
	190	190
1969-1973	165	235
1974-1978	153	217
1979-1983	132	187

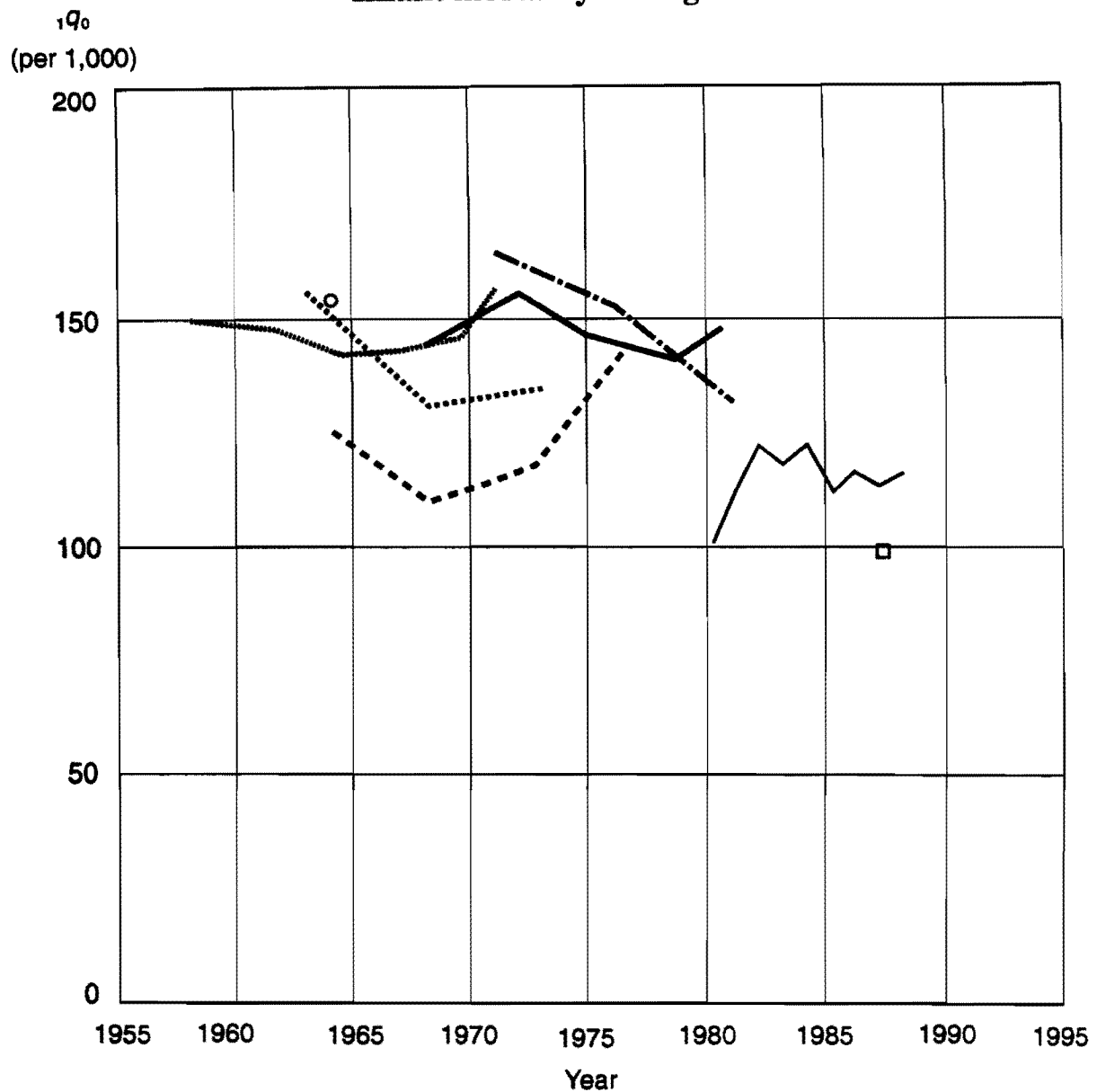
Source: Md. Najmul Huq and John Cleland, *Bangladesh Fertility Survey, 1989: Main Report* (Dhaka, Ministry of Health and Family Planning, n.d.), p. 115, table 10.3.

BANGLADESH CONTRACEPTIVE PREVALENCE SURVEY, MARCH-JULY 1989
(Direct estimates)

Period	Mortality rate (per 1,000)
	190
1985-1989	99

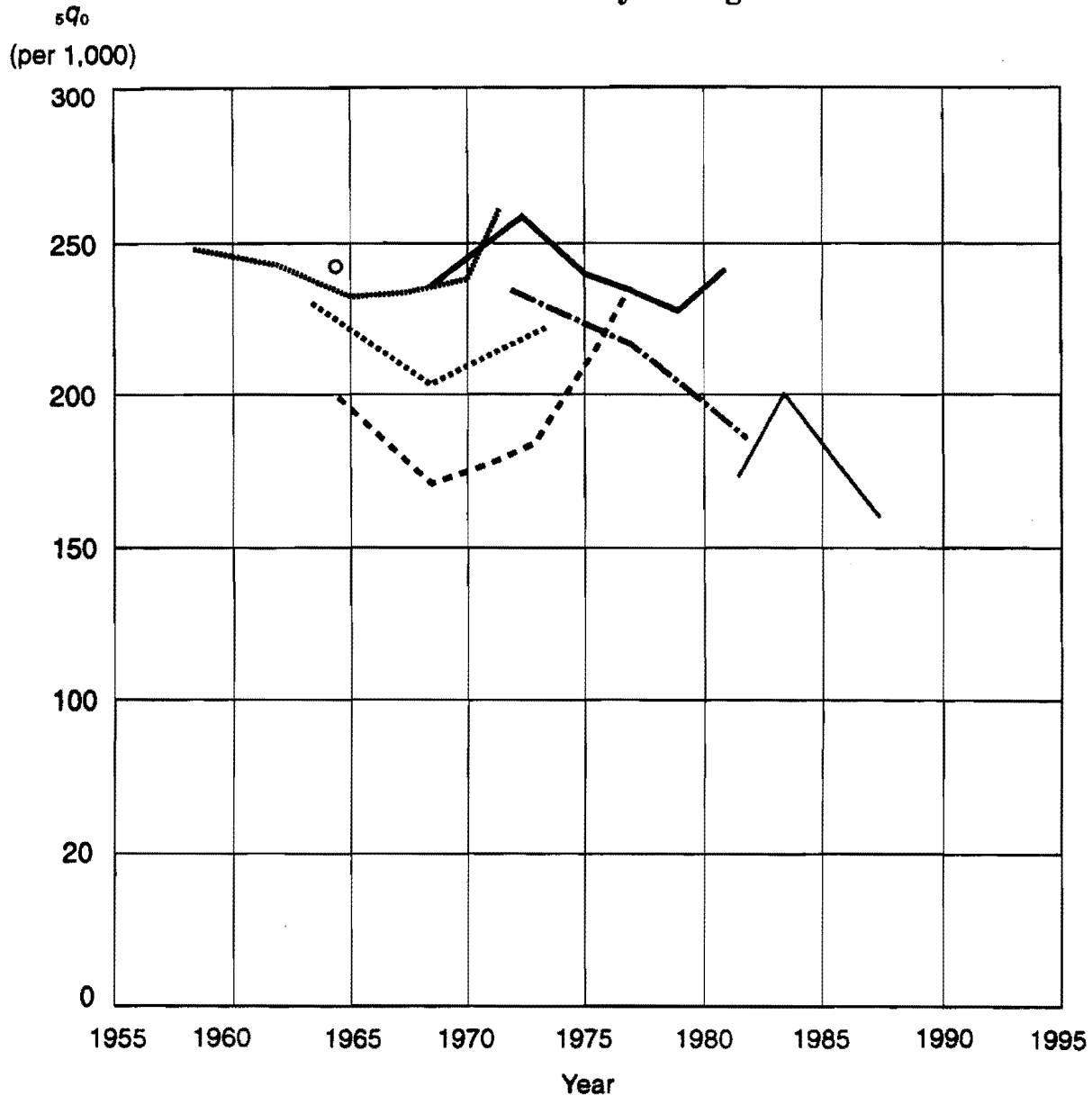
Source: Mitra and Associates, *Bangladesh Contraceptive Prevalence Survey, 1989: Final Report* (Dhaka, 1990), p. 195, table 9.8.

Infant mortality: Bangladesh



- Vital registration
- Population Growth Estimation, 1964 (direct)
- Retrospective Survey of Fertility and Mortality, 1974 (indirect)
- Bangladesh Fertility Survey, 1975 (direct)
- - - Bangladesh Contraceptive Prevalence Survey, 1979 (indirect)
- Bangladesh Contraceptive Prevalence Survey, 1983 (indirect)
- Bangladesh Contraceptive Prevalence Survey, 1989 (direct)
- Bangladesh Fertility Survey, 1989 (direct)

Under-five mortality: Bangladesh



- Life-tables
- Population Growth Estimation, 1964 (direct)
- Retrospective Survey of Fertility and Mortality, 1974 (indirect)
- Bangladesh Fertility Survey, 1975 (direct)
- - - Bangladesh Contraceptive Prevalence Survey, 1979 (indirect)
- Bangladesh Contraceptive Prevalence Survey, 1983 (indirect)
- · - · Bangladesh Fertility Survey, 1989 (direct)

BENIN

Vital registration

Completeness of death registration is not reported.

Censuses

No relevant information is available.

Sample surveys

Maternity histories were collected in 1982 by the Enquête sur la fécondité au Bénin (WFS). The WFS estimates agree well with the indirect estimates from an earlier demographic survey, Enquête démographique au Dahomey, 1961, but data from this survey are not included here because they refer only to the 1950s.

ENQUÊTE SUR LA FÉCONDITÉ AU BENIN, JANUARY-JUNE 1982
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1967-1972	138	254
1972-1977	136	251
1977-1982	108	204

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Level, Trends and Demographic Differentials*, rev. ed., World Fertility Survey Comparative Studies, No. 43 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 43.

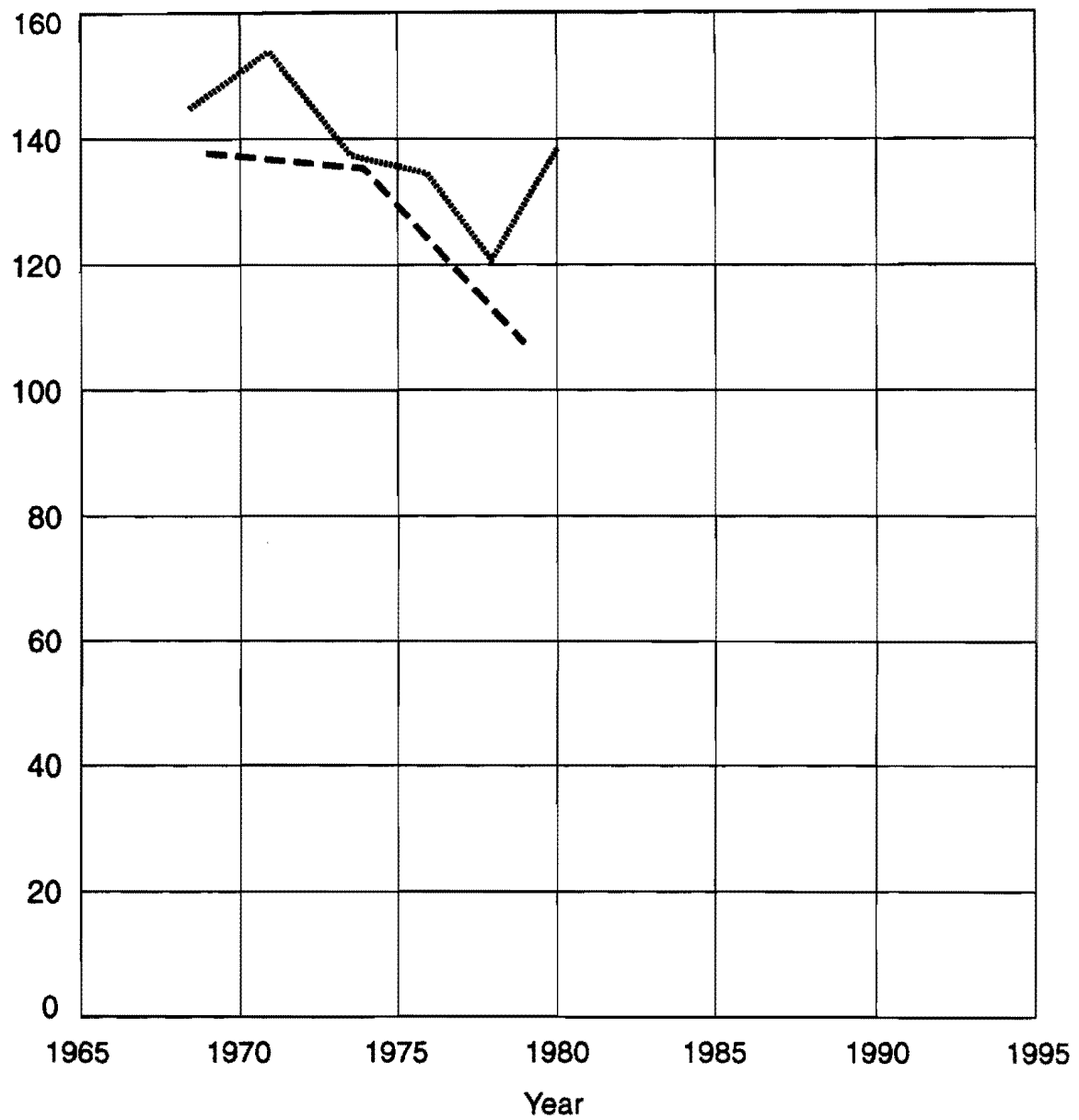
ENQUÊTE SUR LA FÉCONDITÉ AU BENIN, JANUARY-JUNE 1982
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.29	0.138	1981.1	134	227
20-24	1.53	0.183	1979.8	139	234
25-29	3.12	0.186	1978.1	121	203
30-34	4.72	0.231	1975.9	135	227
35-39	5.75	0.257	1973.6	138	234
40-44	6.06	0.309	1971.0	154	261
45-49	6.27	0.316	1968.2	145	244

Source: *Enquête sur la fécondité au Bénin, 1982: rapport national*, vol. I, *Analyse des principaux résultats* (Huddersfield, United Kingdom, H. Charlesworth & Co., Ltd., for Institut national de la statistique et de l'analyse économique, Bureau central du recensement, République du Bénin, n.d.), p. 58, table 6.1.

Infant mortality: Benin

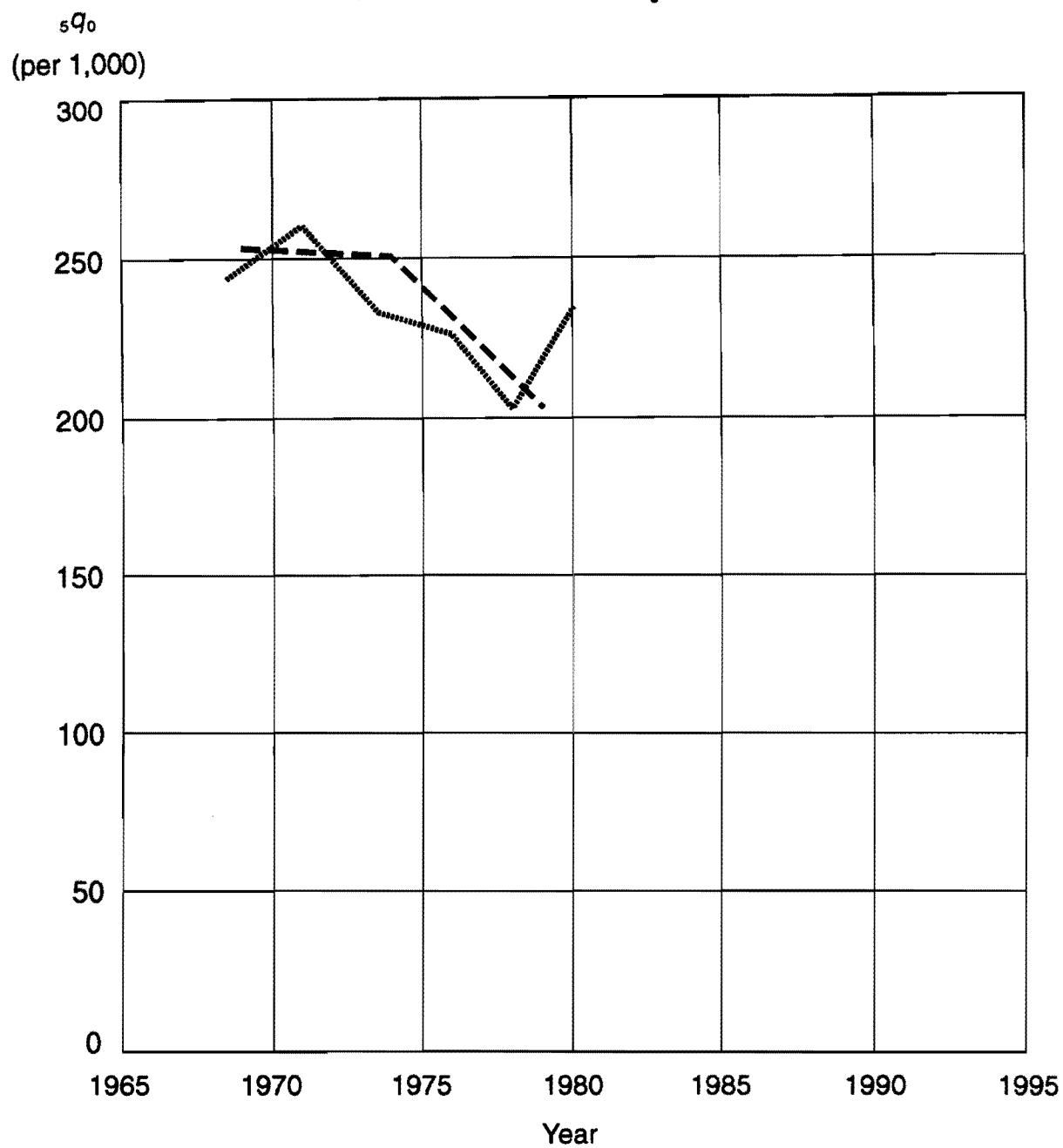
190
(per 1,000)



-- Enquête sur la fécondité au Benin, 1982 (direct)

..... Enquête sur la fécondité au Benin, 1981 (Indirect)

Under-five mortality: Benin



-- Enquête sur la fécondité au Benin, 1982 (direct)
..... Enquête sur la fécondité au Benin, 1981 (indirect)

BOLIVIA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1976 census.

Sample surveys

Maternity histories were collected in 1989 by the National Demographic and Health Survey. Brass questions were included in the National Demographic Survey of 1975 and 1980 and in the National Population and Housing Survey of 1988.

ENCUESTA DEMOGRÁFICA NACIONAL, JUNE-OCTOBER 1975
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.114	0.137	1974.8	148	246
20-24	1.002	0.200	1973.7	159	269
25-29	2.523	0.208	1972.0	144	236
30-34	4.093	0.236	1969.9	148	246
35-39	5.406	0.263	1967.5	153	257
40-44	6.015	0.273	1964.8	151	251
45-49	6.169	0.289	1961.6	150	249

Source: A. Soliz, J. Bartlema and J. Chackiel, *Mortalidad y fecundidad, 1950-1976* (La Paz, Bolivia, Instituto Nacional de Estadística; Santiago, Chile, Centro Latinoamericano de Demografía; and Comité de Población y Demografía de la Academia Nacional de Ciencias de Los EE.UU, n.d), pp. 41 and 44, tables A.3 and A.5.

CENSUS, 29 SEPTEMBER 1976
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.178	0.163	1975.7	167	288
20-24	1.191	0.201	1974.5	155	260
25-29	2.612	0.228	1972.6	152	254
30-34	4.026	0.250	1970.4	153	256
35-39	5.115	0.264	1967.8	152	255
40-44	5.728	0.282	1965.0	153	257
45-49	5.876	0.298	1961.9	152	254

Source: Bolivia: *resultados del Censo Nacional de Población y Vivienda, 1976*, vol. 10 (La Paz, Instituto Nacional de Estadística, 1981), pp. 101, 102 and 105, tables P.20 and P.22.

ENCUESTA DEMOGRÁFICA NACIONAL, OCTOBER-DECEMBER 1980
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.158	0.088	1979.8	89	123
20-24	1.050	0.147	1978.6	120	186
25-29	2.389	0.179	1976.9	126	199
30-34	3.723	0.191	1974.7	125	197
35-39	4.925	0.222	1972.3	135	217
40-44	5.719	0.240	1969.6	136	221
45-49	5.836	0.269	1966.4	141	230

Source: Centro Latinoamericano de Demografía, "Análisis de la fecundidad, la mortalidad y la emigración internacional a partir de información recogida en la Encuesta Demográfica Nacional de 1980", Santiago, Chile, 1981, p. 37, table M.2, unpublished.

ENCUESTA NACIONAL DE POBLACIÓN Y VIVIENDA, SEPTEMBER 1988
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.131	0.081	1987.8	89	124
20-24	1.046	0.123	1986.6	104	154
25-29	2.308	0.134	1984.7	100	146
30-34	3.510	0.161	1982.3	109	164
35-39	4.524	0.184	1979.7	116	178
40-44	5.199	0.209	1976.8	122	190
45-49	5.606	0.232	1973.6	125	197

Source: Bolivia: Encuesta Nacional de Población y Vivienda, 1988: resultados finales (La Paz, Instituto Nacional de Estadística; and New York, United Nations Population Fund, 1989), p. 78, table P.22.

ENCUESTA NACIONAL DE DEMOGRAFÍA Y SALUD, MARCH-JUNE 1989
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1980	1990
1979-1989	96	142
1987-1989	86	130

Sources: Bolivia: Encuesta Nacional de Demografía y Salud, 1989 (La Paz, Instituto Nacional de Estadística; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1990), p. 6, table 2.1; and Institute for Resource Development/Macro Systems, Inc., "Selected statistics from DHS surveys", DHS Newsletter (Columbia, Maryland), vol. 4, No. 1 (1991), p. 12.

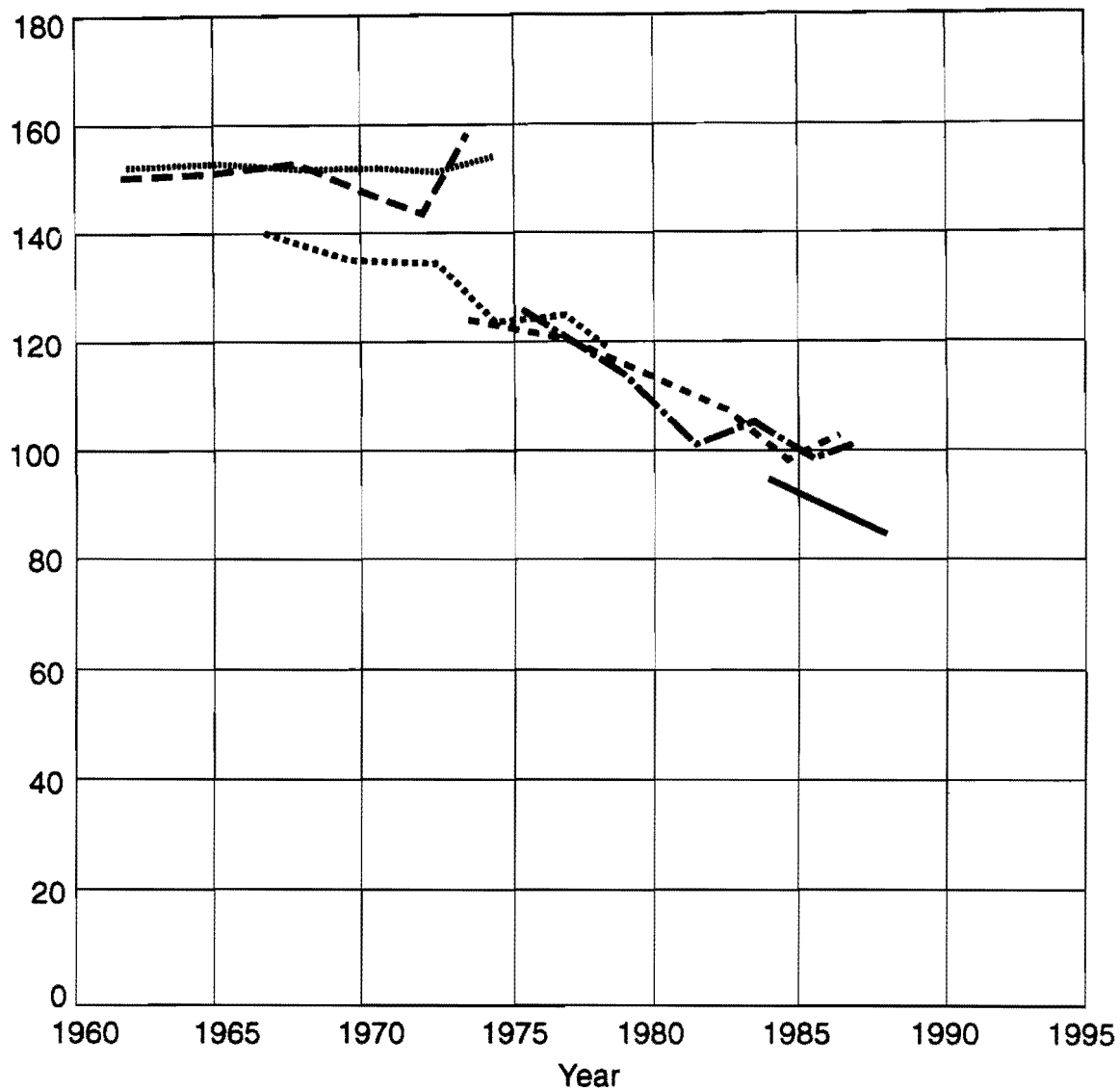
ENCUESTA NACIONAL DE DEMOGRAFÍA Y SALUD, MARCH-JUNE 1989
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.18	0.13	1988.2	122	190
20-24	1.07	0.12	1987.0	101	148
25-29	2.58	0.13	1985.4	100	145
30-34	3.72	0.15	1983.5	106	157
35-39	4.54	0.15	1981.3	102	150
40-44	5.42	0.19	1978.8	116	178
45-49	5.89	0.23	1975.7	127	201

Source: Bolivia: *Encuesta Nacional de Demografía y Salud, 1989* (La Paz, Instituto Nacional de Estadística; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1990), p. 9, table 2.3.

Infant mortality: Bolivia

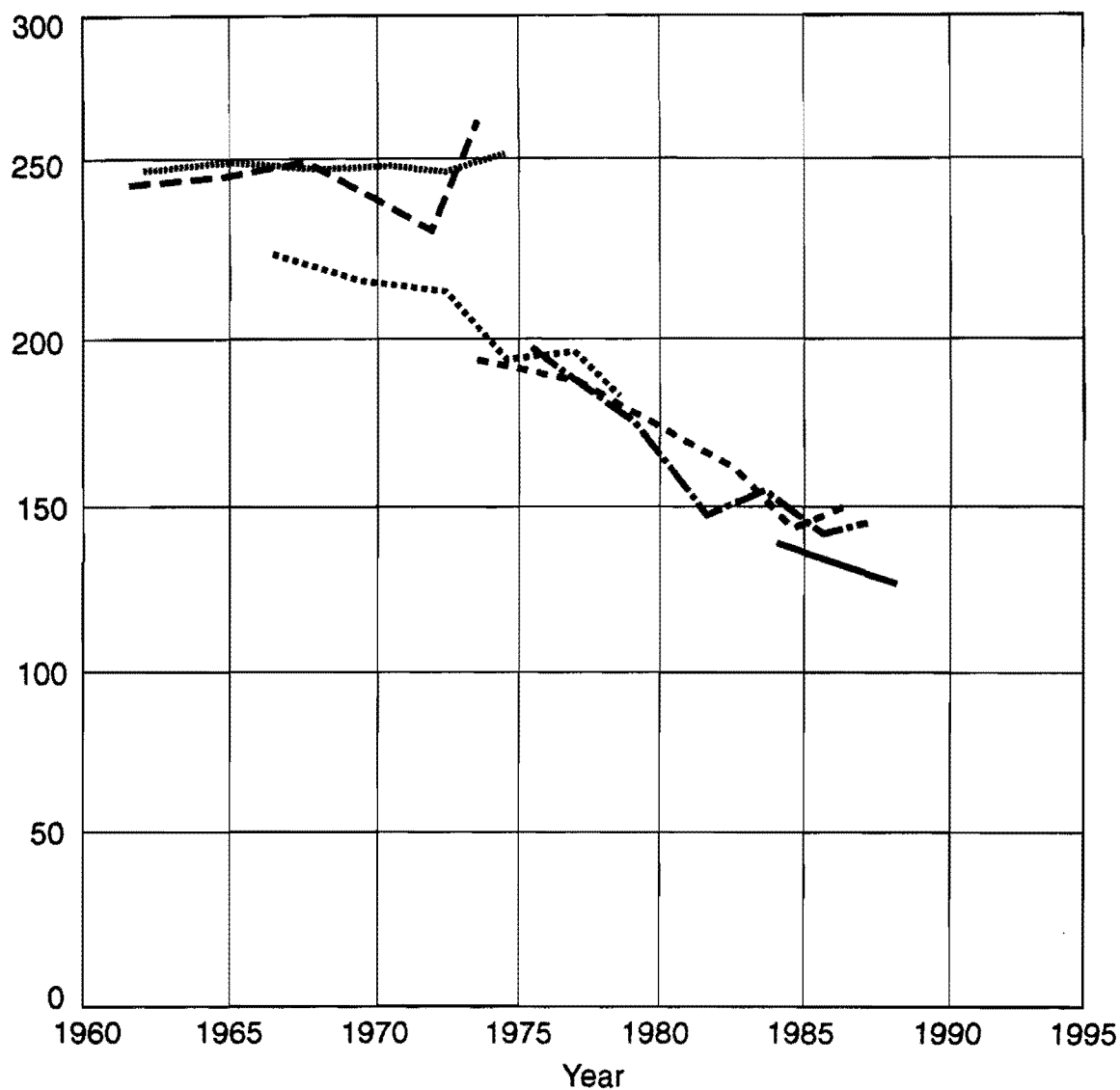
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(per 1,000)



- — Encuesta Demográfica Nacional, 1975 (indirect)
- Census, 1976 (indirect)
- Encuesta Demográfica Nacional, 1980 (indirect)
- - - Encuesta Nacional de Población y Vivienda, 1988 (indirect)
- Encuesta Nacional de Demografía y Salud, 1989 (direct)
- — Encuesta Nacional de Demografía y Salud, 1989 (indirect)

Under-five mortality: Bolivia

sQ_0
(per 1,000)



- Encuesta Demográfica Nacional, 1975 (indirect)
- Census, 1976 (indirect)
- Encuesta Demográfica Nacional, 1980 (indirect)
- Encuesta Nacional de Población y Vivienda, 1988 (indirect)
- Encuesta Nacional de Demografía y Salud, 1989 (direct)
- Encuesta Nacional de Demografía y Salud, 1989 (indirect)

BOTSWANA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1971 and 1981 censuses.

Sample surveys

Maternity histories were collected by Family Health Survey II (DHS) in 1988. Brass questions were included in Family Health Survey I (CPS) of 1984.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1982	23	1985	41
1983	15	1986	24
1984	17	1987	20

Source: Data provided to the United Nations Statistical Office.

CENSUS, 31 AUGUST 1971 (Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1965</i>
15-19	0.156	0.096	1970.8	110	166
20-24	1.326	0.122	1969.6	103	152
25-29	2.765	0.148	1967.5	107	161
30-34	4.115	0.162	1965.0	108	163
35-39	4.934	0.173	1962.1	110	165
40-44	5.476	0.198	1959.0	116	179
45-49	5.552	0.221	1955.8	120	186

Source: Botswana, *Report of the Population Census, 1971* (Gaborone, Central Statistics Office, 1972), pp. 162 and 175, tables 17.1 and 17.12.

CENSUS, 12-26 AUGUST 1981
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.253	0.076	1980.6	77	102
20-24	1.452	0.094	1979.2	81	108
25-29	2.740	0.109	1977.1	84	114
30-34	4.137	0.126	1974.6	90	126
35-39	5.199	0.145	1971.7	97	139
40-44	6.105	0.166	1968.7	102	150
45-49	6.415	0.183	1965.6	105	155

Source: Botswana, Ministry of Finance and Development Planning, *1981 Population and Housing Census: Census Administrative/Technical Report and National Statistical Tables* (Gaborone, Central Statistics Office, n.d.), table 26.

BOTSWANA FAMILY HEALTH SURVEY, MARCH-JULY 1984
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.25	0.040	1983.3	40	46
20-24	1.44	0.083	1982.0	74	96
25-29	2.87	0.087	1980.0	71	92
30-34	4.16	0.099	1977.6	76	100
35-39	5.36	0.138	1974.9	95	134
40-44	6.27	0.136	1972.1	90	125
45-49	6.84	0.156	1968.9	95	135

Source: W. G. Manyeng and others, *Botswana Family Health Survey, 1984* (Gaborone, Ministry of Health, Family Health Division; and Columbia, Maryland, Westinghouse Public Applied Systems, 1985), p. 95, table 6.1.

BOTSWANA FAMILY HEALTH SURVEY II, AUGUST-DECEMBER 1988
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1973-1977	57	89
1978-1982	42	60
1983-1988 ^a	37	53

Source: Lesetedinyana T. Lesetedi and others, *Botswana Family Health Survey II, 1988* (Gaborone, Ministry of Finance and Development Planning, Central Statistics Office; and Ministry of Health, Family Health Division; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 70, table 6.1.

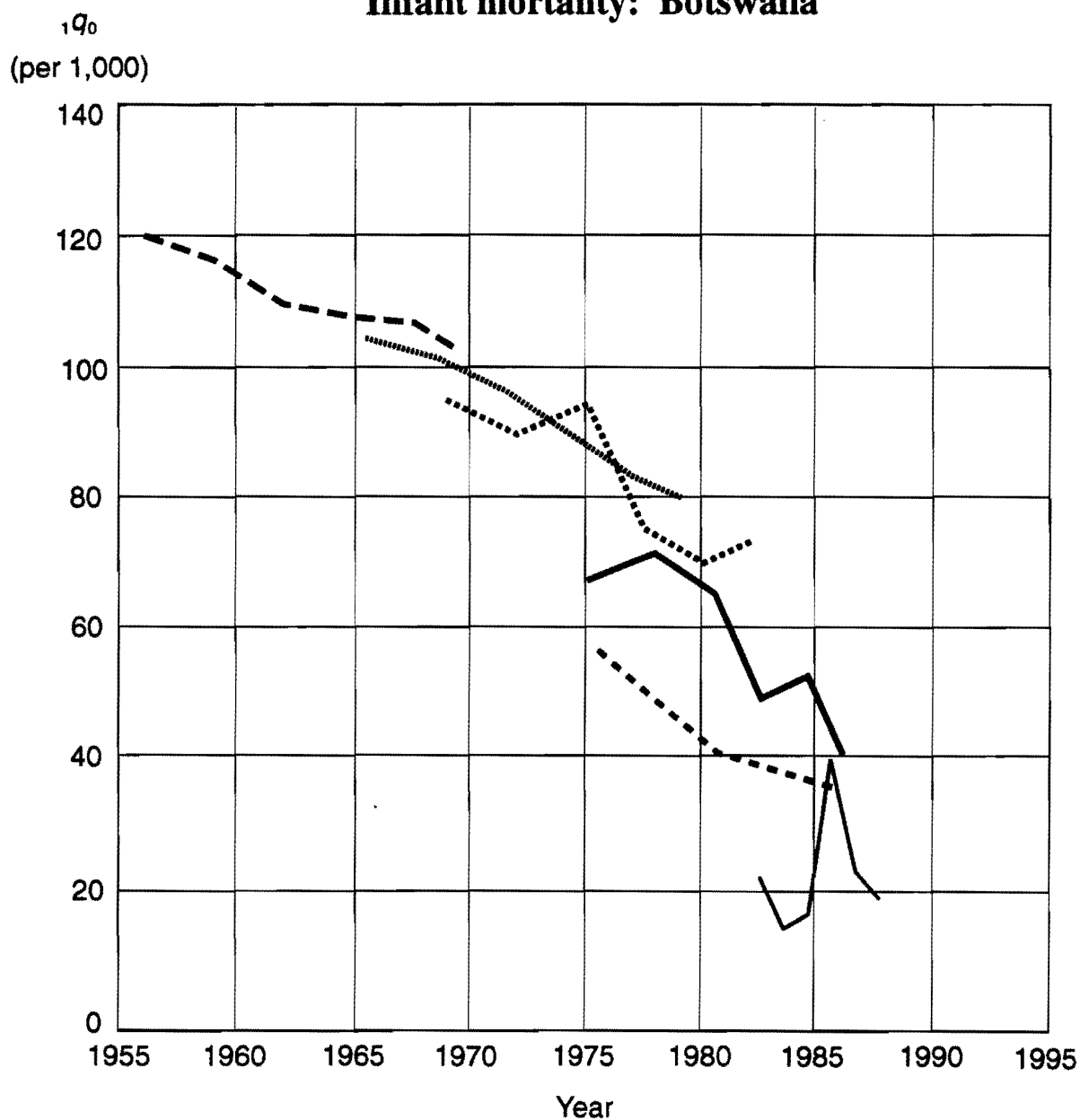
^a Including events occurring in 1988 up to the month preceding the date of interview.

BOTSWANA FAMILY HEALTH SURVEY II, AUGUST-DECEMBER 1988
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.261	0.034	1987.4	28	31
20-24	1.166	0.045	1986.1	42	50
25-29	2.546	0.061	1984.5	54	65
30-34	3.698	0.058	1982.6	50	61
35-39	5.088	0.082	1980.5	66	84
40-44	5.425	0.097	1978.1	72	94
45-49	5.752	0.097	1975.1	68	88

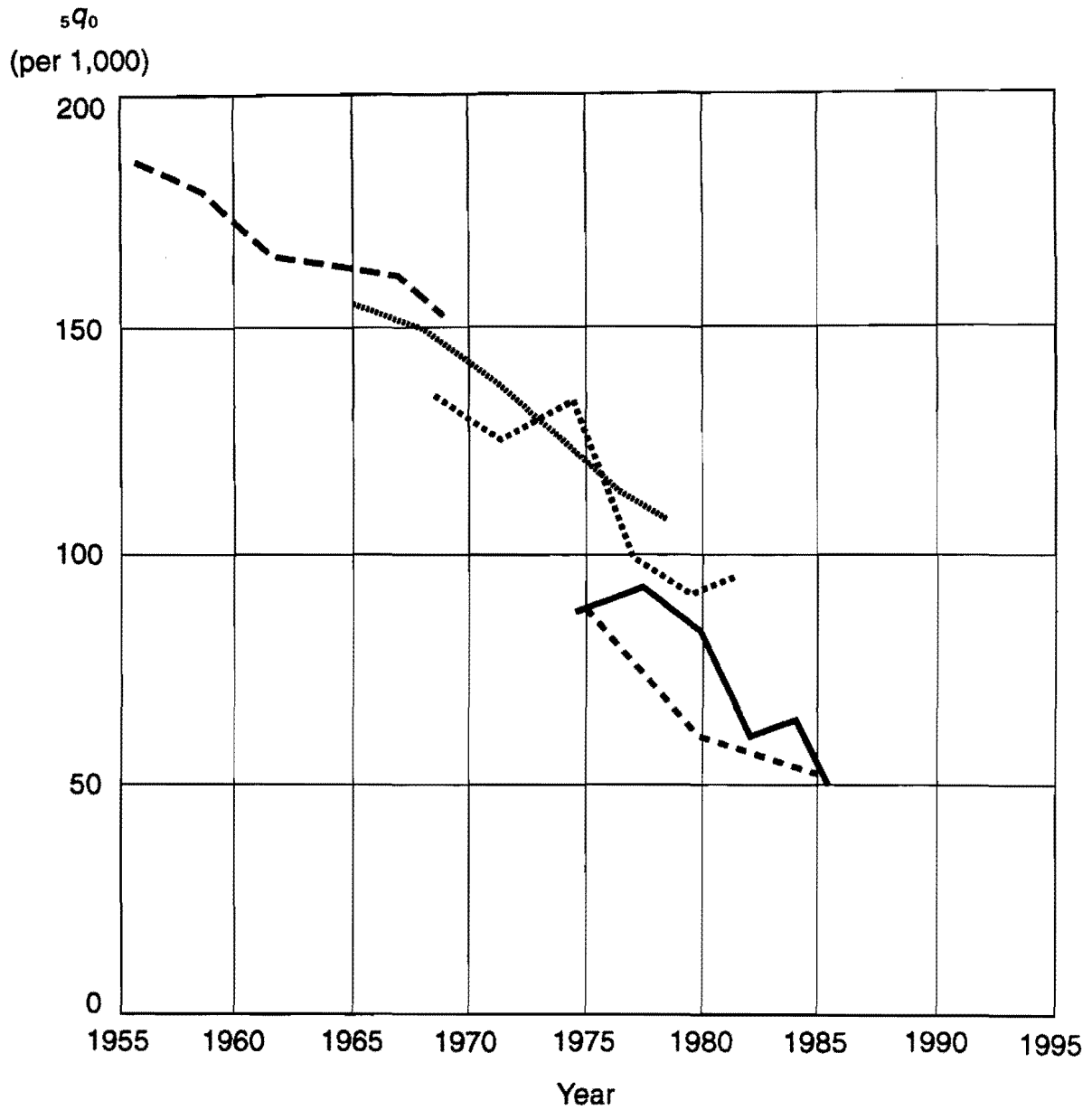
Source: Lesetedinyana T. Lesetedi and others, *Botswana Family Health Survey II, 1988* (Gaborone, Ministry of Finance and Development Planning and Family Health Division, Ministry of Health; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 74, table 6.4.

Infant mortality: Botswana



- Vital registration
- - Census, 1971 (indirect)
- Census, 1981 (indirect)
- Botswana Family Health Survey, 1984 (indirect)
- - - Botswana Family Health Survey II, 1988 (direct)
- Botswana Family Health Survey II, 1988 (indirect)

Under-five mortality: Botswana



- Census, 1971 (indirect)
- Census, 1981 (indirect)
- Botswana Family Health Survey, 1984 (indirect)
- Botswana Family Health Survey II, 1988 (direct)
- Botswana Family Health Survey II, 1988 (indirect)

BRAZIL

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the censuses of 1940, 1950, 1960, 1970 and 1980, although the 1970 data have not been published. The data from the 1940, 1950 and 1960 censuses are not reported here, since they fall outside the time reference of this study.

Sample surveys

Maternity histories were collected in 1986 by the Pesquisa Nacional sobre Saúde Materno-Infantil e Planejamento Familiar (DHS). Brass questions were included in the Pesquisa Nacional por Amostra de Domicílios (national household survey, NHS) rounds of 1972, 1973, 1976, 1977, 1978, 1984 and 1986. In 1972, NHS exempted the northern and central-western regions; and in 1973, the rural areas of those regions.

PESQUISA NACIONAL POR AMOSTRA DE DOMICÍLIOS, OCTOBER-DECEMBER 1972
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.121	0.130	1971.8	134	217
20-24	0.929	0.121	1970.8	104	154
25-29	2.377	0.129	1969.2	100	145
30-34	3.741	0.150	1967.2	106	158
35-39	4.814	0.164	1964.9	109	164
40-44	5.466	0.186	1962.3	114	174
45-49	5.804	0.212	1959.2	120	186

Source: Unpublished tabulations provided by the Fundação Instituto Brasileiro de Geografia e Estatística.

PESQUISA NACIONAL POR AMOSTRA DE DOMICÍLIOS, OCTOBER-DECEMBER 1973
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.109	0.114	1972.9	122	190
20-24	0.910	0.118	1971.8	103	151
25-29	2.272	0.124	1970.1	97	139
30-34	3.729	0.148	1968.0	104	155
35-39	4.859	0.165	1965.7	109	163
40-44	5.580	0.183	1963.0	112	170
45-49	5.833	0.210	1959.8	118	183

Source: Unpublished tabulations provided by the Fundação Instituto Brasileiro de Geografia e Estatística.

PESQUISA NACIONAL POR AMOSTRA DE DOMICÍLIOS, 28 NOVEMBER 1976
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.115	0.111	1975.8	112	171
20-24	0.821	0.113	1974.7	98	141
25-29	2.043	0.109	1973.1	88	121
30-34	3.399	0.123	1971.1	92	128
35-39	4.514	0.147	1968.8	101	147
40-44	5.194	0.163	1966.2	104	153
45-49	5.572	0.183	1963.1	107	161

Source: Brazil, *Pesquisa Nacional por Amostra de Domicílios, 1976*, vol. I, tomo 8 (Rio de Janeiro, Fundação Instituto Brasileiro de Geografia e Estatística, 1978), p. 20, table 12.

PESQUISA NACIONAL POR AMOSTRA DE DOMICÍLIOS, 31 OCTOBER 1977
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.114	0.082	1976.8	85	116
20-24	0.838	0.104	1975.6	92	129
25-29	2.025	0.107	1973.9	86	119
30-34	3.365	0.127	1971.9	94	133
35-39	4.533	0.143	1969.5	98	142
40-44	5.198	0.161	1966.8	103	151
45-49	5.576	0.186	1963.7	108	163

Source: Brazil, *Pesquisa Nacional por Amostra de Domicílios, 1977*, vol. 2, tomo 8 (Rio de Janeiro, Fundação Instituto Brasileiro de Geografia e Estatística, 1979), p. 60.

PESQUISA NACIONAL POR AMOSTRA DE DOMICÍLIOS, 31 OCTOBER 1978
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.130	0.103	1977.7	103	153
20-24	0.869	0.101	1976.6	89	123
25-29	2.010	0.108	1974.8	86	119
30-34	3.273	0.124	1972.7	91	128
35-39	4.393	0.141	1970.3	97	140
40-44	5.173	0.158	1967.6	101	147
45-49	5.552	0.177	1964.5	104	155

Source: Brazil, *Pesquisa Nacional por Amostra de Domicílios, 1978*, vol. 3, tomo 8 (Rio de Janeiro, Fundação Instituto Brasileiro de Geografia e Estatística, 1980), p. 52.

CENSUS, 1 SEPTEMBER 1980
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.138	0.111	1979.7	112	171
20-24	0.902	0.101	1978.5	88	122
25-29	1.993	0.099	1976.6	80	107
30-34	3.122	0.109	1974.4	83	112
35-39	4.220	0.124	1971.9	89	123
40-44	4.949	0.143	1969.2	94	134
45-49	5.295	0.159	1966.0	97	139

Source: Brazil, *IX Recenseamento Geral do Brasil, 1980; Censo Demográfico: Dados Gerais - Migração - Instrução - Fecundidade - Mortalidade*, vol. I, tomo 4, No. 1 (Rio de Janeiro, Fundação Instituto Brasileiro de Geografia e Estatística, 1983), pp. 170-171, table 4.1.

PESQUISA NACIONAL POR AMOSTRA DE DOMICÍLIOS, 29 SEPTEMBER 1984
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.132	0.067	1983.7	68	87
20-24	0.830	0.072	1982.4	66	84
25-29	1.796	0.073	1980.6	62	79
30-34	2.745	0.083	1978.3	66	85
35-39	3.647	0.098	1975.8	74	98
40-44	4.429	0.113	1973.0	79	106
45-49	4.949	0.126	1969.9	83	112

Source: Brazil, *Pesquisa Nacional por Amostra de Domicílios, 1984*, vol. 8, (Rio de Janeiro, Fundação Instituto Brasileiro de Geografia e Estatística, 1985), p. 33.

PESQUISA NACIONAL SOBRE SAÚDE MATERNO-INFANTIL E
PLANEJAMENTO FAMILIAR, MAY-AUGUST 1986
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1980
1971-1975	100	122
1976-1980	99	115
1981-1986	76	86

Source: José Maria Arruda and others, *Pesquisa Nacional sobre Saúde Materno-Infantil e Planejamento Familiar, 1986* (Rio de Janeiro, Sociedade Civil Bem-Estar Familiar no Brasil; and Columbia, Maryland, Institute for Resource Development, 1987), p. 145, table 8.1.

PESQUISA NACIONAL SOBRE SAÚDE MATERNO-INFANTIL E
PLANEJAMENTO FAMILIAR, MAY-AUGUST 1986
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.135	0.085	1985.6	88	122
20-24	0.893	0.085	1984.3	76	101
25-29	1.903	0.090	1982.4	74	97
30-34	2.953	0.109	1980.1	83	111
35-39	3.824	0.113	1977.5	83	112
40-44	4.658	0.124	1974.6	85	116

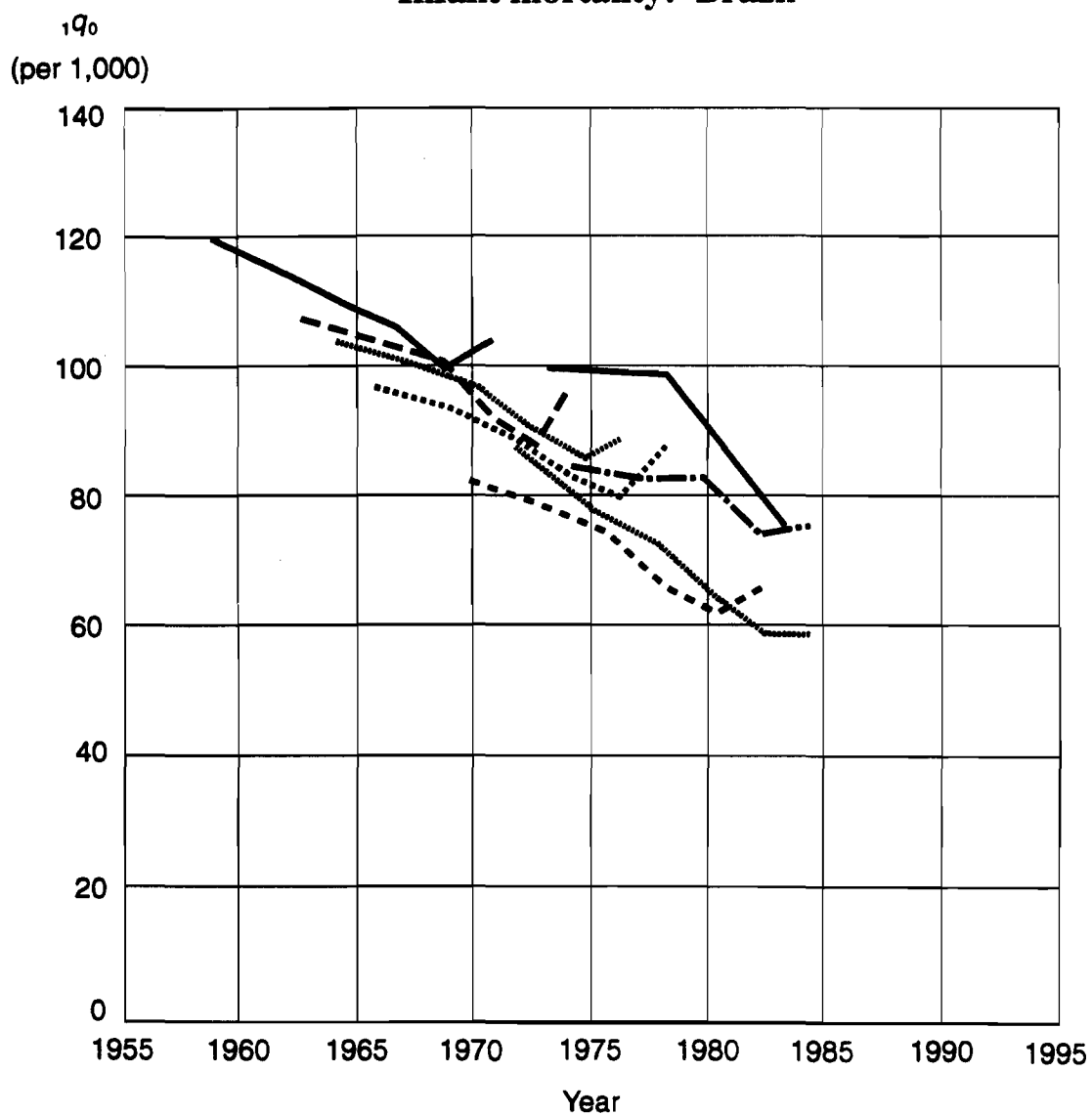
Source: José Maria Arruda and others, *Pesquisa Nacional sobre Saúde Materno-Infantil e Planejamento Familiar, 1986* (Rio de Janeiro, Sociedade Civil Bem-Estar Familiar no Brasil; and Columbia, Maryland, Institute for Resource Development, 1987), p. 148, table 8.4.

PESQUISA NACIONAL POR AMOSTRA DE DOMICÍLIOS, 4 OCTOBER 1986
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.143	0.050	1985.6	47	56
20-24	0.819	0.063	1984.4	59	73
25-29	1.823	0.069	1982.7	59	74
30-34	2.682	0.080	1980.6	65	82
35-39	3.503	0.094	1978.2	73	95
40-44	4.312	0.109	1975.6	78	104
45-49	4.779	0.134	1972.5	86	119

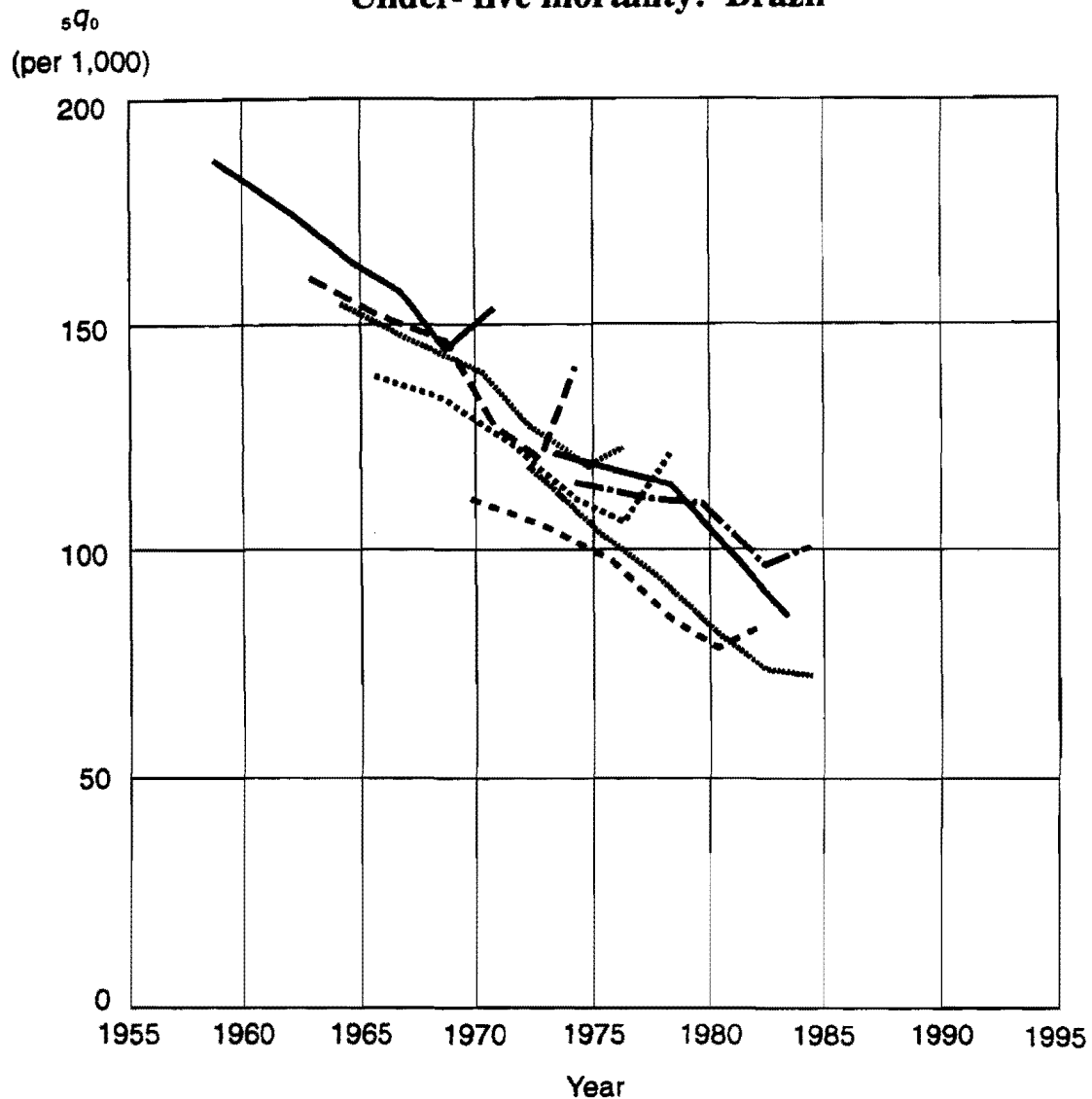
Source: Brazil, *Pesquisa Nacional por Amostra de Domicílios, 1986*, vol. 10 (Rio de Janeiro, Fundação Instituto Brasileiro de Geografia e Estatística, 1988), p. 26.

Infant mortality: Brazil



- Pesquisa Nacional por Amostra de Domicílios, 1972 (indirect)
- - Pesquisa Nacional por Amostra de Domicílios, 1976 (indirect)
- Pesquisa Nacional por Amostra de Domicílios, 1978 (indirect)
- Census, 1980 (indirect)
- - - Pesquisa Nacional por Amostra de Domicílios, 1984 (indirect)
- Pesquisa Nacional sobre Saúde Materno-infantil, 1986 (direct)
- ..— Pesquisa Nacional sobre Saúde Materno-infantil, 1986 (indirect)
- Pesquisa Nacional por Amostra de Domicílios, 1986 (indirect)

Under-five mortality: Brazil



- Pesquisa Nacional por Amostra de Domicílios, 1972 (indirect)
- - Pesquisa Nacional por Amostra de Domicílios, 1976 (indirect)
- Pesquisa Nacional por Amostra de Domicílios, 1978 (indirect)
- Census, 1980 (indirect)
- - - Pesquisa Nacional por Amostra de Domicílios, 1984 (indirect)
- Pesquisa Nacional sobre Saúde Materno-infantil, 1986 (direct)
- Pesquisa Nacional sobre Saúde Materno-infantil, 1986 (indirect)
- Pesquisa Nacional por Amostra de Domicílios, 1986 (indirect)

BURKINA FASO

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the Post-enumeration Survey (PES) of 1976 and in the 1985 census. Data from the 1985 census were not available.

Sample surveys

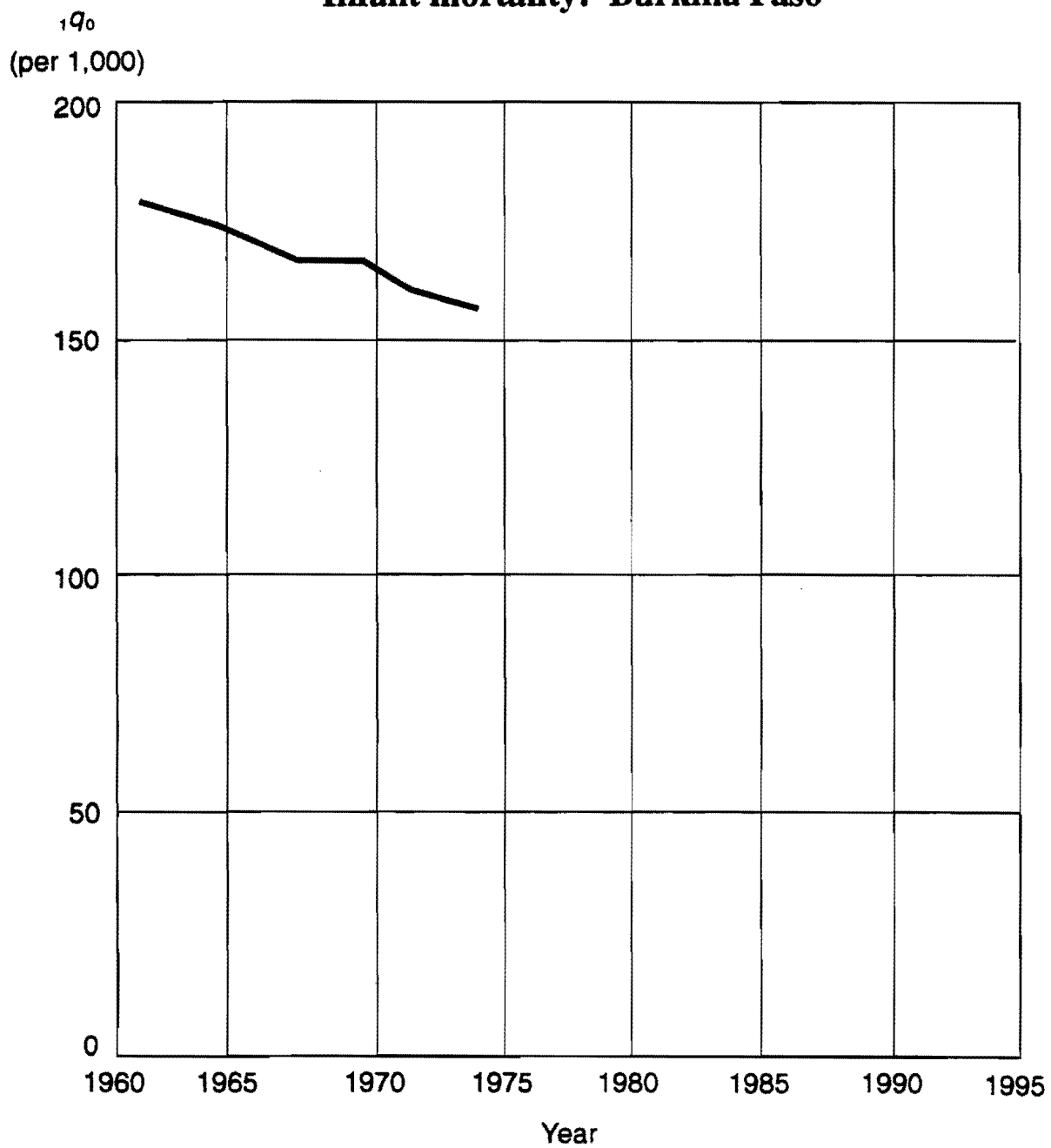
No relevant data are available.

POST-ENUMERATION SURVEY, 1976 (Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				1960	1970
15-19	0.39	0.179	1975.2	154	259
20-24	1.69	0.220	1973.8	157	264
25-29	3.11	0.253	1971.7	161	273
30-34	4.52	0.285	1969.4	167	287
35-39	5.59	0.302	1966.8	167	288
40-44	6.29	0.335	1964.1	174	301
45-49	6.66	0.369	1961.0	179	311

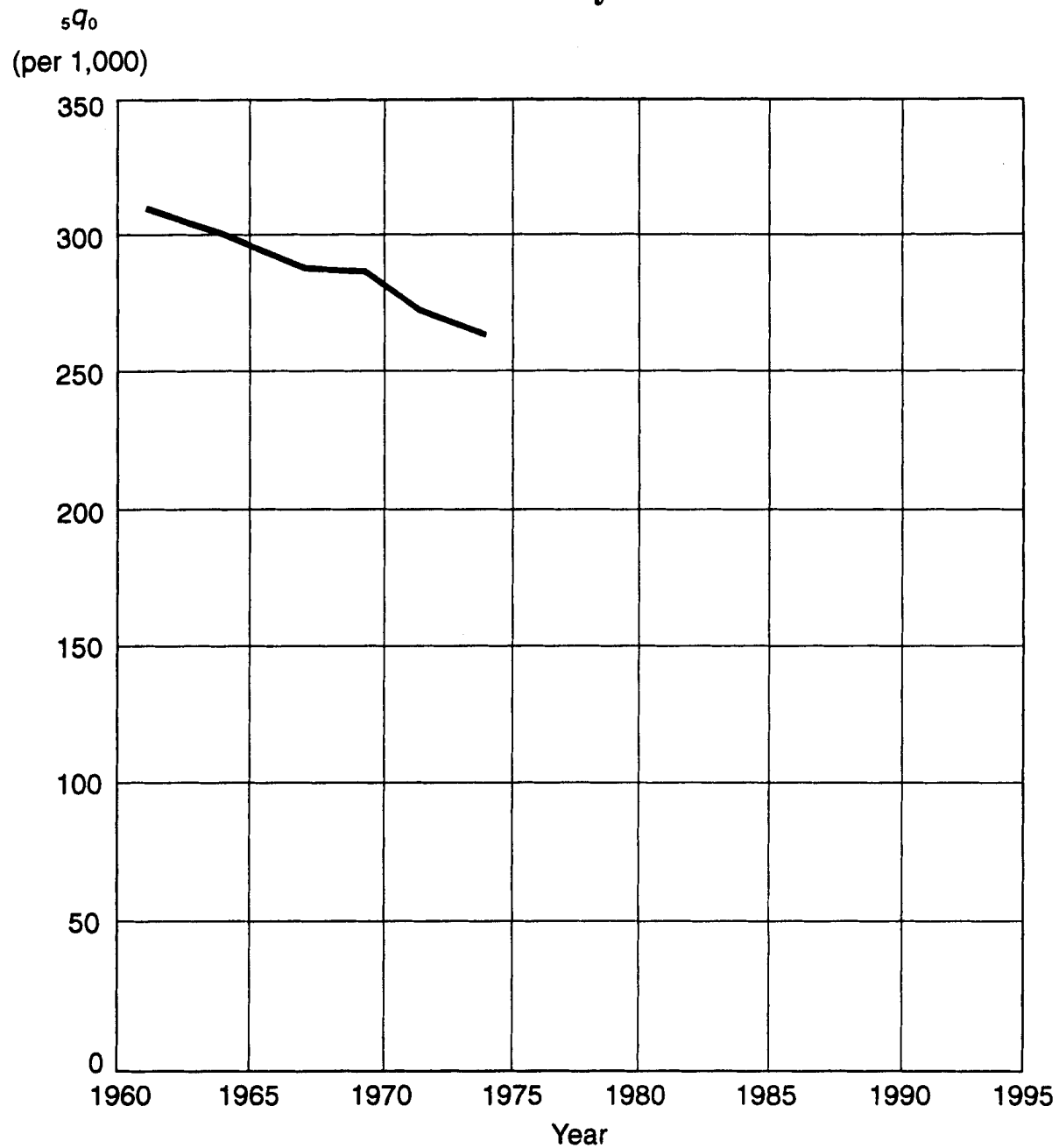
Source: Burkina Faso, *Morbidité et mortalité en Haute-Volta: 1960-1976*, Dossier technique, No. 4 (Ouagadougou, Institut national de la statistique et de la démographie, 1981).

Infant mortality: Burkina Faso



— Post-enumeration Survey, 1976 (indirect)

Under-five mortality: Burkina Faso



— Post-enumeration Survey, 1976 (indirect)

BURUNDI

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the Enquête post-censitaire of 1979.

Sample surveys

Maternity histories were collected by the Enquête démographique et de santé au Burundi (DHS) in 1987. The Enquête démographique Burundi, a multi-round survey including Brass questions, was held in 1970-1971; it covered only rural areas of the country, but approximately 98 per cent of the population were rural.

ENQUÊTE DÉMOGRAPHIQUE BURUNDI, MAY 1970-JULY 1971 (Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1970-1971	140	268

Sources: *Enquête démographique Burundi, 1970-1971*, vol. I, *Résultats définitifs* (Bujumbura, Ministère du plan, Département des statistiques; and Paris, Ministère de la coopération/institut national de la statistique et des études économiques, 1974), p. 296; and United Nations, *Age Structure of Mortality in Developing Countries: A Data Base for Cross-sectional and Time Series Research*, ST/ESA/SER.R/66 (New York, 1986), p. 32.

ENQUÊTE DÉMOGRAPHIQUE BURUNDI, MAY 1970-JULY 1971 (Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.38	0.09	1969.0	52	78
20-24	1.20	0.13	1967.8	93	150
25-29	2.60	0.20	1966.5	132	223
30-34	4.14	0.23	1965.1	141	239
35-39	5.19	0.25	1963.6	144	243
40-44	5.98	0.29	1961.8	155	261
45-49	5.99	0.34	1959.2	167	281

Source: *Enquête démographique Burundi, 1970-1971*, vol. I, *Résultats définitifs* (Bujumbura, Ministère du plan, Département des statistiques; and Paris, Ministère de la coopération/Institut national de la statistique et des études économiques, 1974), p. 280.

ENQUÊTE POST-CENSAIRE, NOVEMBER 1979
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.095	0.091	1979.0	104	172
20-24	0.968	0.163	1977.9	135	229
25-29	2.584	0.189	1976.4	129	219
30-34	4.167	0.221	1974.4	134	226
35-39	5.429	0.227	1972.2	126	212
40-44	6.244	0.273	1969.7	139	235
45-49	6.643	0.282	1966.8	131	222

Source: Unpublished tabulations provided to the World Bank.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ AU BURUNDI, APRIL-JULY 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1972-1976	100	224
1977-1981	103	234
1982-1986 ^a	75	152

Source: Léonce Segamba and others, *Enquête démographique et de santé au Burundi, 1987* (Gitega, Ministère de l'intérieur, Département de la population; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 62, table 6.3.

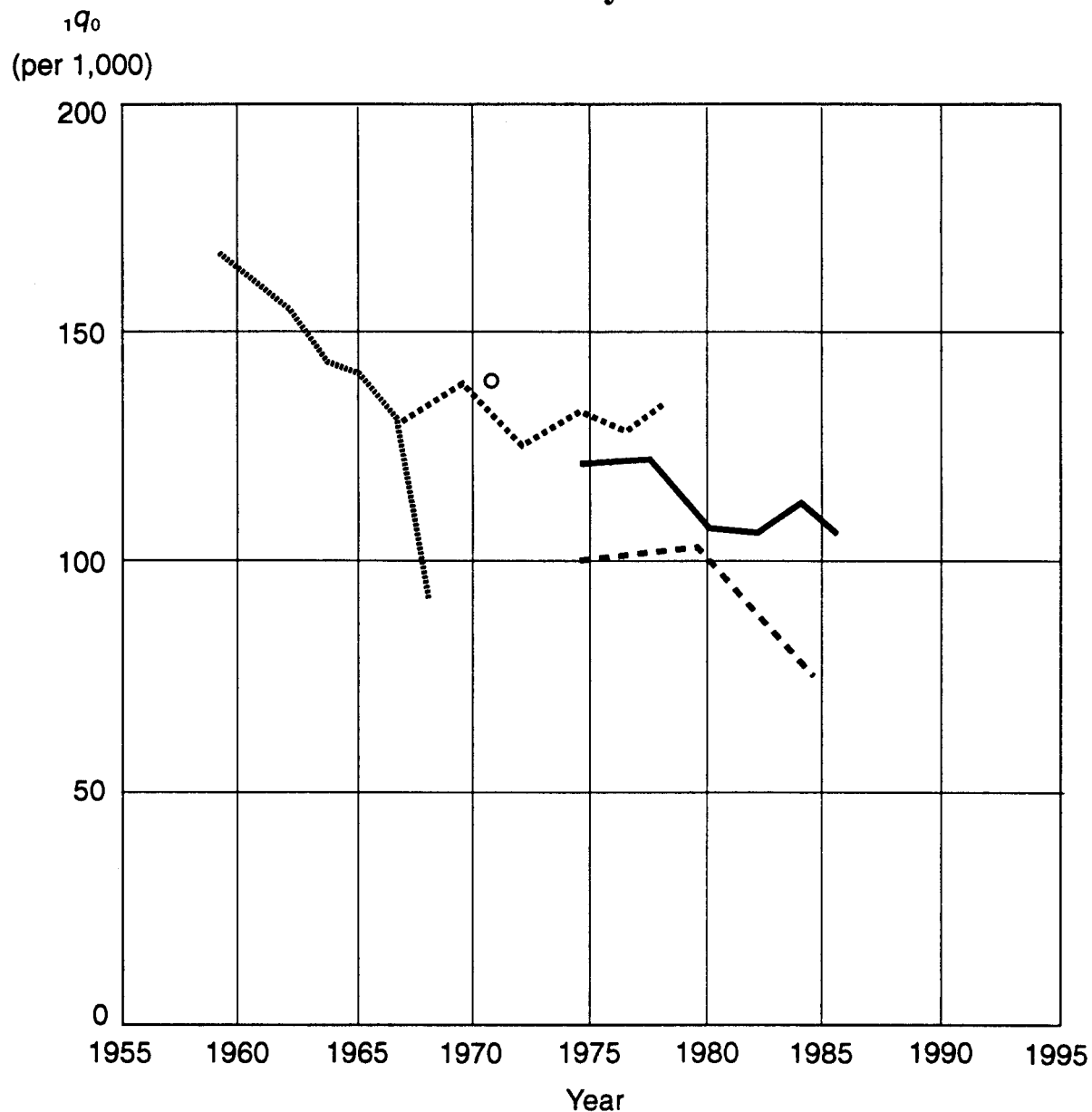
^a Including events occurring in 1987 up to the month preceding the date of interview.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ AU BURUNDI, APRIL-JULY 1987
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.04	0.13	1986.7	164	277
20-24	0.89	0.12	1985.7	106	174
25-29	2.66	0.16	1984.2	113	188
30-34	4.22	0.17	1982.2	106	175
35-39	5.61	0.19	1979.9	107	177
40-44	6.57	0.24	1977.3	122	206
45-49	7.27	0.26	1974.4	121	203

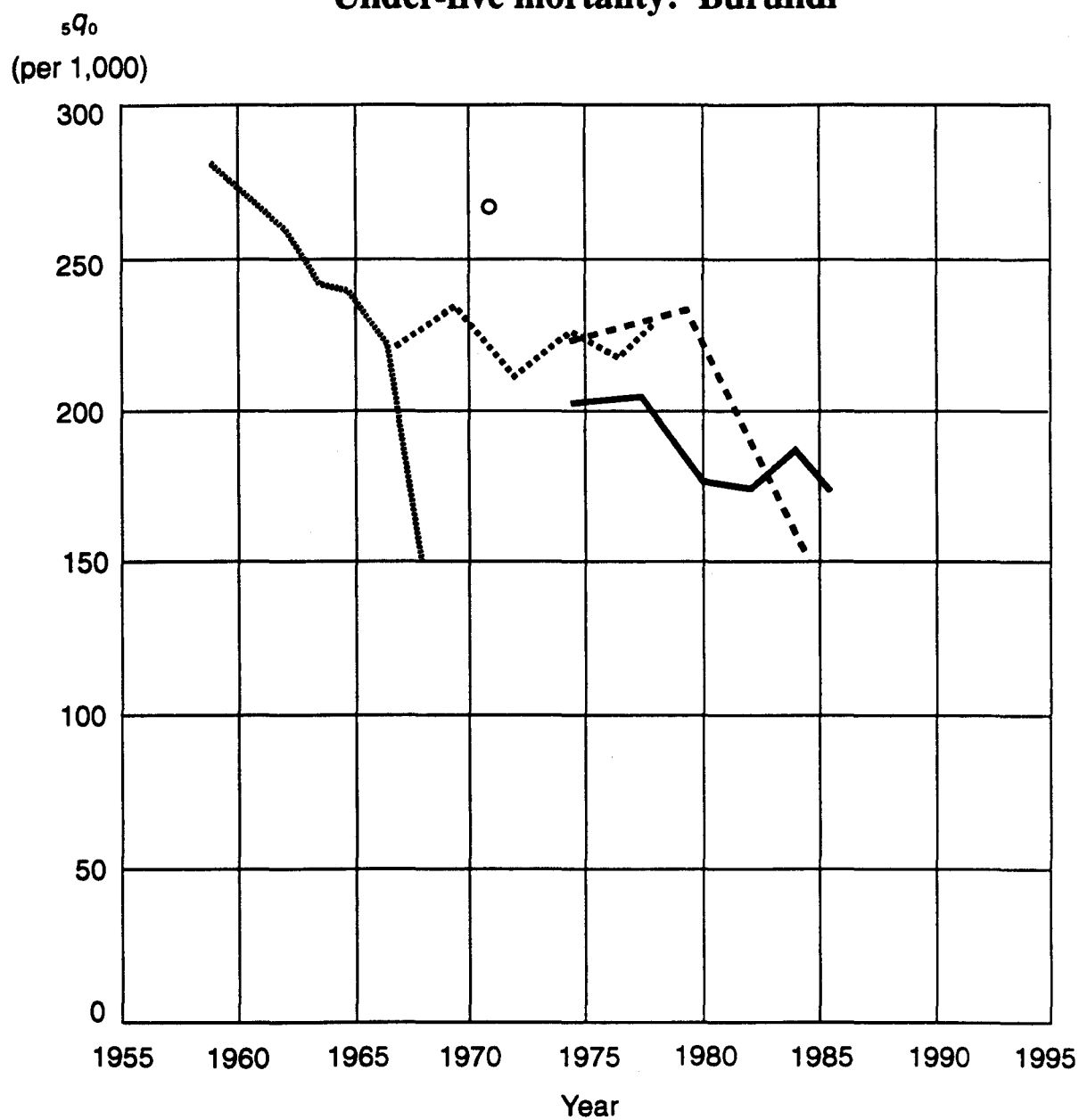
Source: Léonce Segamba and others, *Enquête démographique et de santé au Burundi, 1987* (Gitega, Ministère de l'intérieur, Département de la population; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 61, table 6.2.

Infant mortality: Burundi



- Enquête démographique Burundi, 1970-1971 (direct)
- Enquête démographique Burundi, 1970-1971 (indirect)
- Enquête post-censitaire, 1979 (indirect)
- - - Enquête démographique et de santé, 1987 (direct)
- Enquête démographique et de santé, 1987 (indirect)

Under-five mortality: Burundi



- Enquête démographique Burundi, 1970-1971 (direct)
- Enquête démographique Burundi, 1970-1971 (indirect)
- Enquête post-censitaire, 1979 (indirect)
- - - Enquête démographique et de santé, 1987 (direct)
- Enquête démographique et de santé, 1987 (indirect)

CAMEROON

Vital registration

Completeness of death registration is not reported.

Censuses

No census has included Brass questions.

Sample surveys

Maternity histories were collected by the Enquête nationale sur la fécondité du Cameroun (WFS) in 1978. A series of demographic surveys was conducted in different areas of Cameroon between 1960 and 1964. The WFS estimates agree well with an approximate weighted average of the mortality estimates derived from the earlier surveys, which are not included here.

ENQUÊTE NATIONALE SUR LA FÉCONDITÉ DU CAMEROUN, JANUARY-OCTOBER 1978
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1963-1968	135	242
1968-1973	103	194
1973-1978	106	195

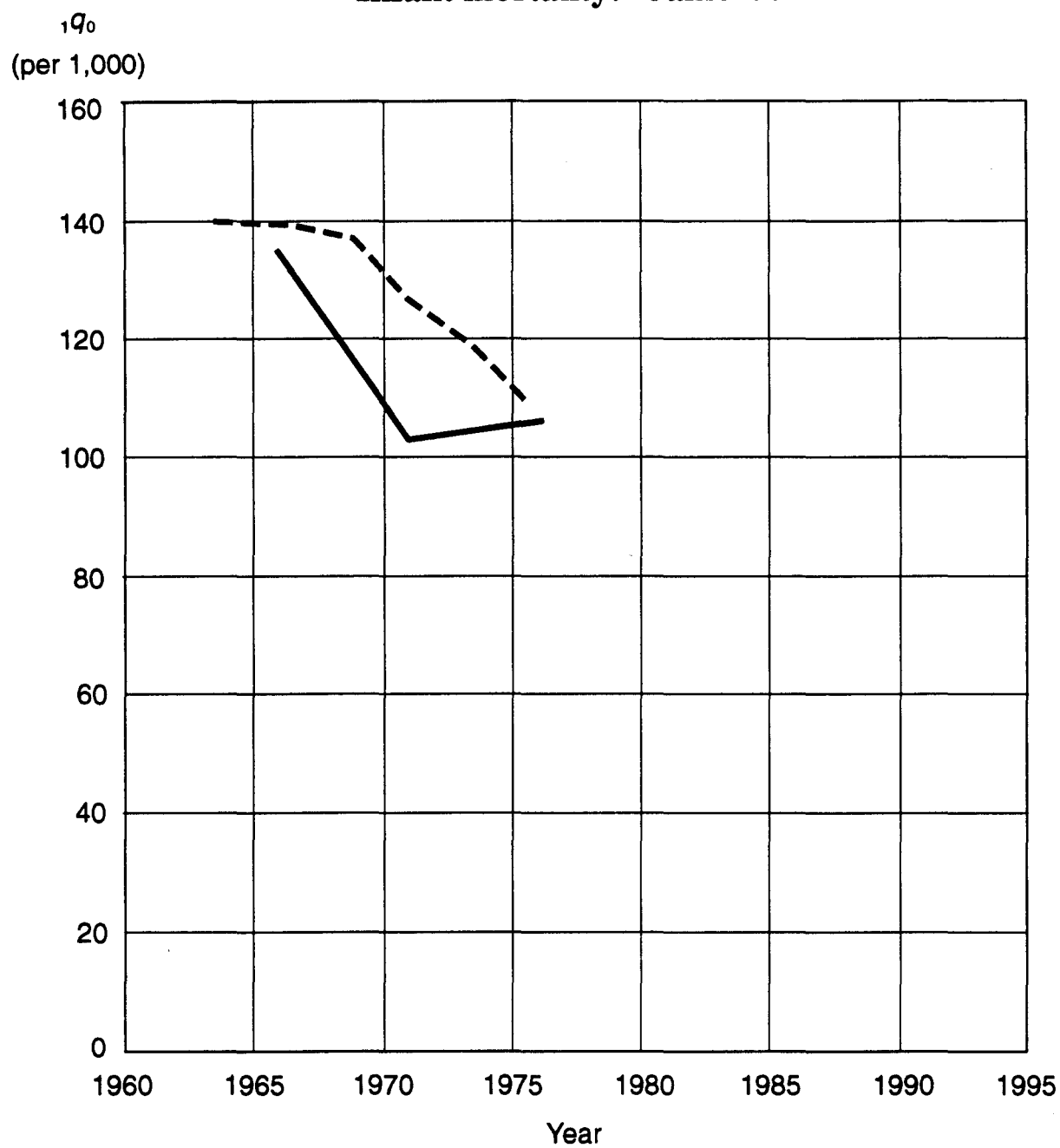
Source: Cameroon, *Enquête nationale sur la fécondité du Cameroun, 1978: rapport principal*, vol. I, *Analyse des principaux résultats* (Yaoundé, Ministère de l'économie et du plan, Direction de la statistique et de la comptabilité nationale, 1983), p. 94.

ENQUÊTE NATIONALE SUR LA FÉCONDITÉ DU CAMEROUN, HOUSEHOLD SURVEY, JANUARY-OCTOBER 1978
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.53	0.166	1976.8	124	210
20-24	1.79	0.161	1975.3	110	183
25-29	3.02	0.193	1973.4	119	200
30-34	4.19	0.223	1971.2	127	214
35-39	4.83	0.258	1968.9	137	231
40-44	5.10	0.283	1966.4	139	236
45-49	5.10	0.310	1963.7	140	237

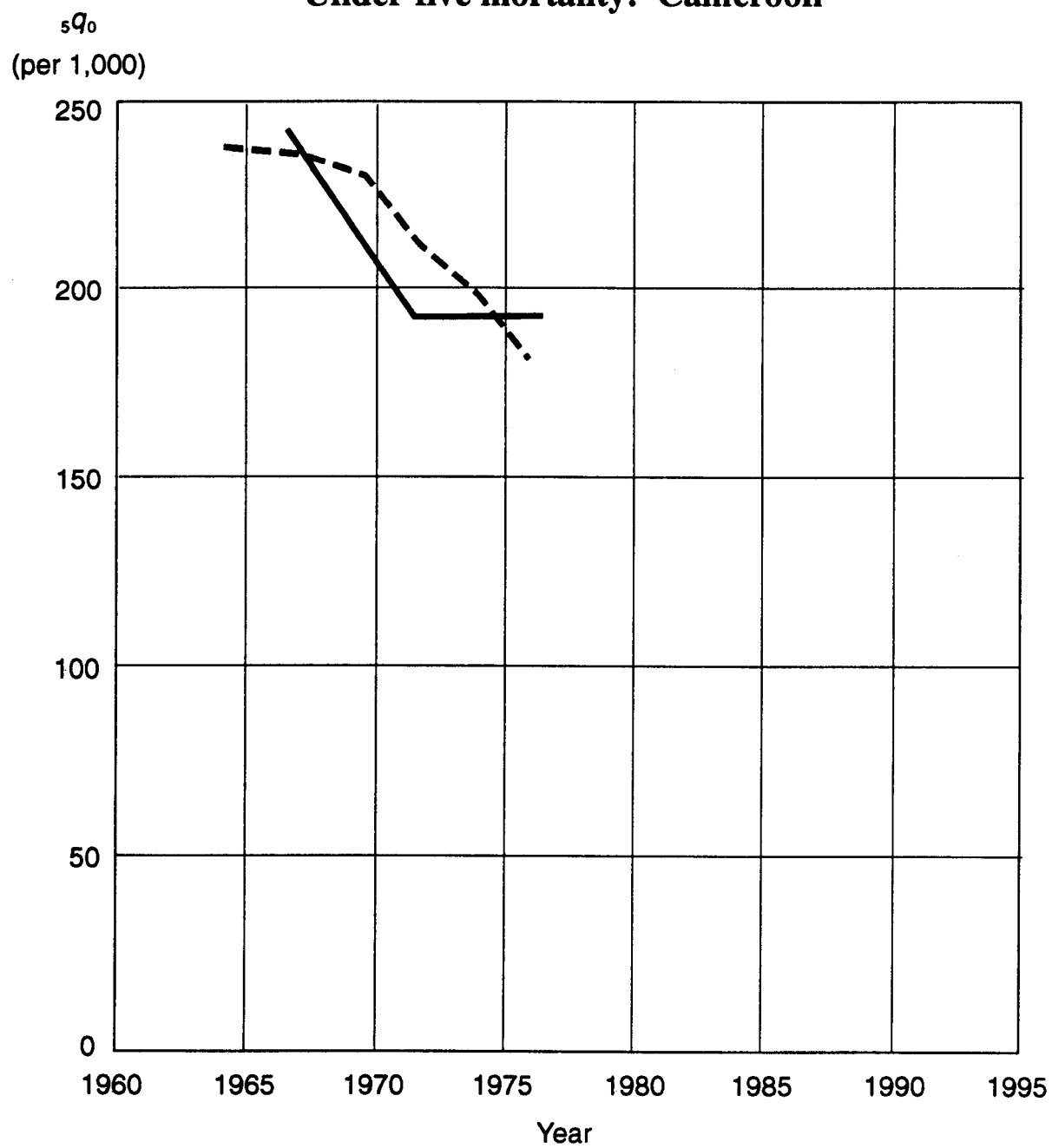
Source: Cameroon, *Enquête nationale sur la fécondité du Cameroun, 1978: rapport principal*, vol. I, *Analyse des principaux résultats* (Yaoundé, Ministère de l'économie et du plan, Direction de la statistique et de la comptabilité nationale, 1983), p. 92.

Infant mortality: Cameroon



- Enquête nationale sur la fécondité, 1978 (direct)
-- Enquête nationale sur la fécondité, 1978 (indirect)

Under-five mortality: Cameroon



— Enquête nationale sur la fécondité, 1978 (direct)
-- Enquête nationale sur la fécondité, 1978 (indirect)

CENTRAL AFRICAN REPUBLIC

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1975 census.

Surveys

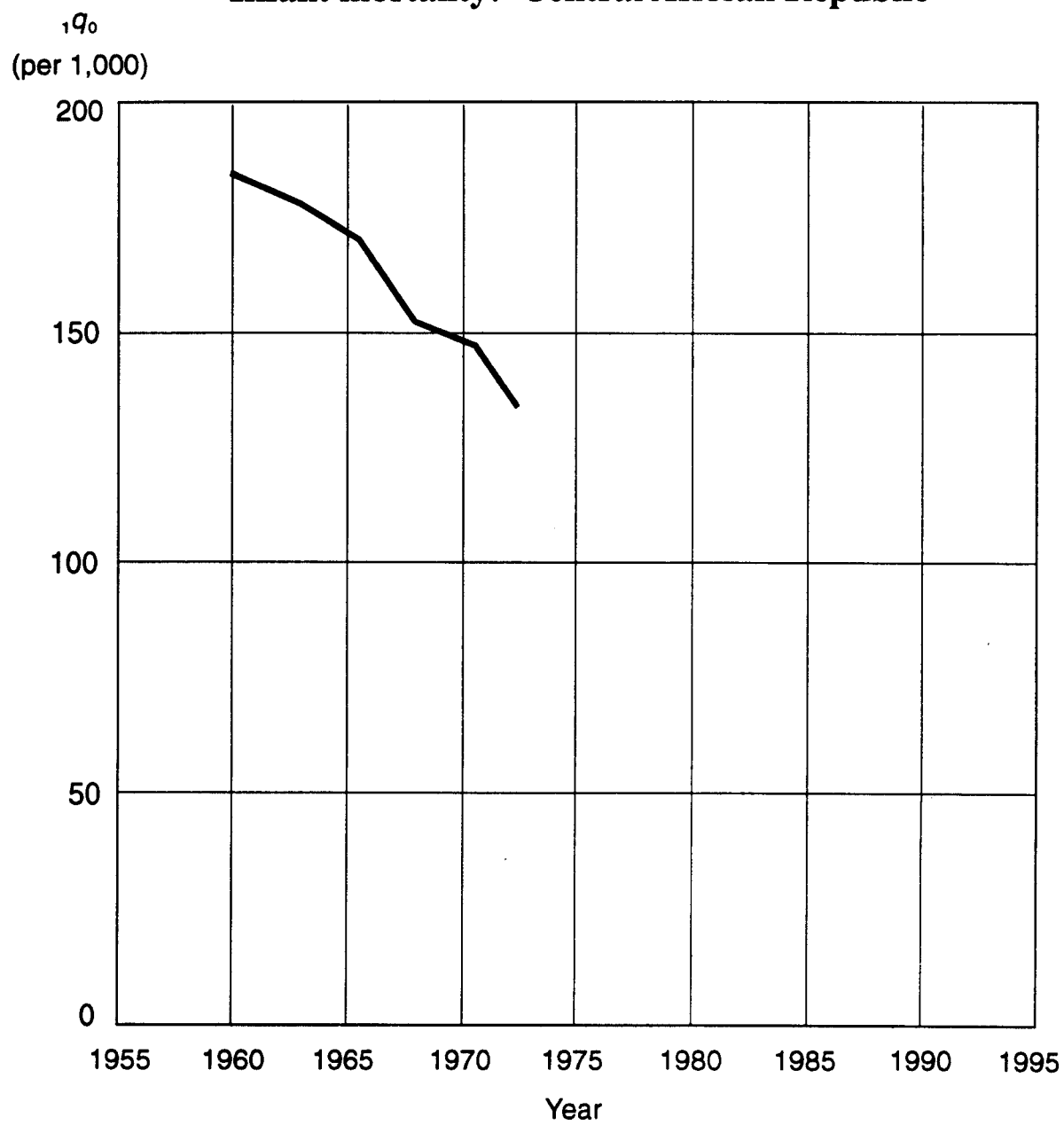
No relevant data are available.

CENSUS, 8-22 DECEMBER 1975
(Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1970</i>
15-19	0.667	0.210	1974.2	126	200
20-24	1.932	0.204	1972.6	134	216
25-29	3.028	0.236	1970.5	148	245
30-34	3.881	0.257	1968.2	153	256
35-39	4.442	0.311	1965.7	171	295
40-44	4.610	0.346	1963.1	178	310
45-49	4.696	0.384	1960.2	185	323

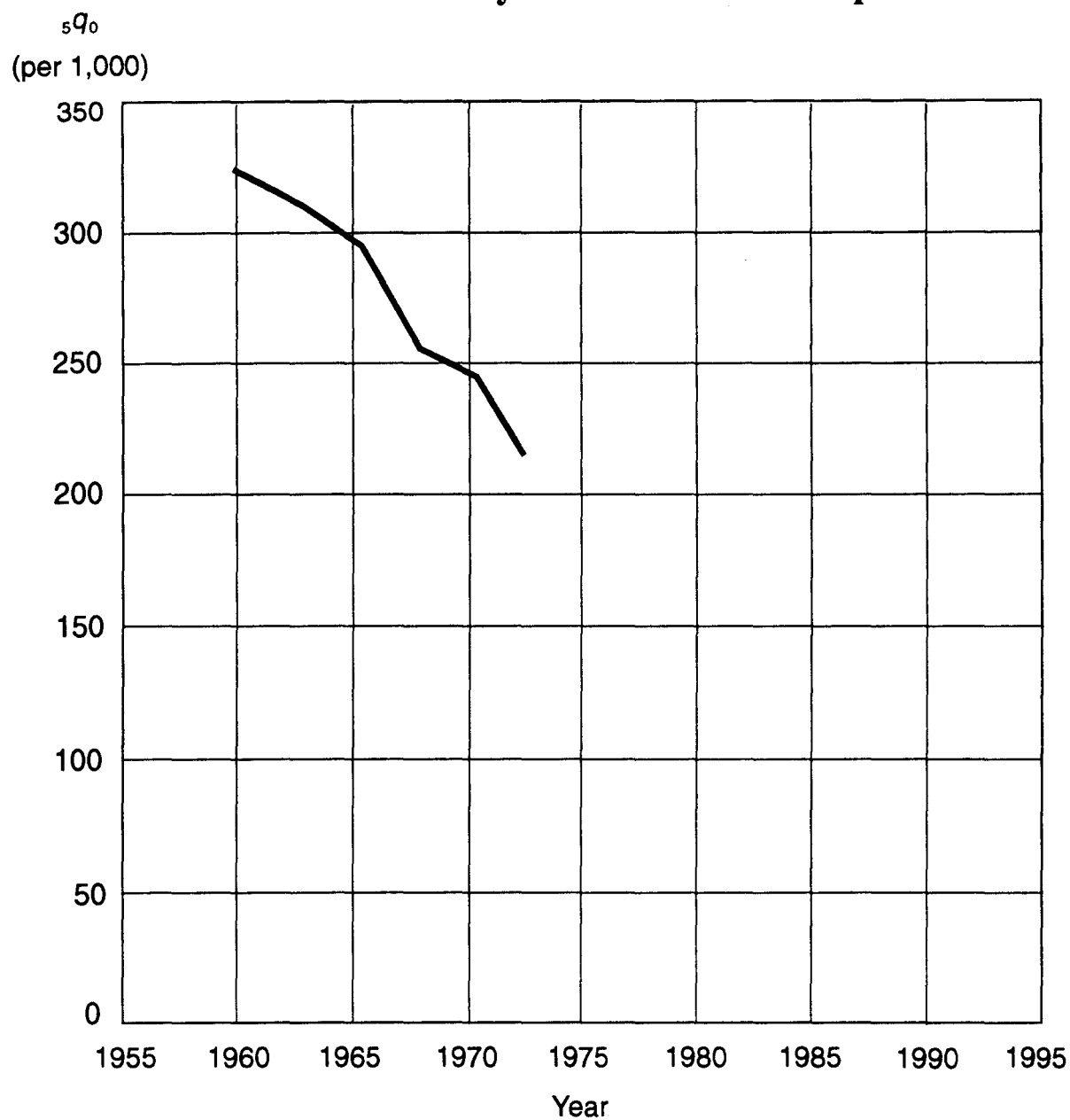
Source: Central African Republic, *Recensement général de la population de décembre 1975*, vol. 1, *Résultats globaux* (Bangui, Ministère du plan, de la coopération et de la statistique générale, Bureau central du recensement, 1980), pp. 83 and 91.

Infant mortality: Central African Republic



— Census, 1975 (indirect)

Under-five mortality: Central African Republic



— Census, 1975 (indirect)

CHILE

Vital registration

Registration of births and deaths is reported to be complete. However, published infant mortality rates are calculated from births adjusted for coverage and unadjusted infant deaths.

Censuses

Brass questions were included in the 1970 and 1982 censuses. Data from the 1970 census are based on a 5 per cent sample of returns.

Sample surveys

No relevant data are available.

VITAL REGISTRATION

Year	Infant mortality (per 1,000)	Year	Infant mortality (per 1,000)	Year	Infant mortality (per 1,000)
1960	120	1970	82	1980	33
1961	106	1971	74	1981	27
1962	109	1972	73	1982	24
1963	100	1973	66	1983	22
1964	104	1974	65	1984	20
1965	97	1975	58	1985	19
1966	99	1976	57	1986	19
1967	95	1977	50	1987	19
1968	87	1978	40	1988	19
1969	83	1979	38	1989	17

Source: Chile, *Anuario de demografía, 1989* (Santiago, Ministerio de Economía, Fomento y Reconstrucción, Instituto Nacional de Estadísticas; and Ministerio de Salud, Servicio de Registro Civil e Identificación, 1991), p. 6, table 1.2.2-02.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

Period	Mortality rate (per 1,000)	
	1960	1980
1960-1961	117	145
1969-1970	82	96
1980-1985	24	28

Sources: José M. Pujol and Odette Tacla, *Chile: Tablas abreviadas de mortalidad, 1952-1953 y 1960-1961*, CELADE Series C, No. 11 (Santiago, Chile, Centro Latinoamericano de Demografía, 1965), p. 34, table 16; José M. Pujol, *Chile: Tablas abreviadas de mortalidad a nivel nacional y regional, 1969-1970*, CELADE Series A, No. 141 (Santiago, Centro Latinoamericano de Demografía, 1976), p. 35, table 7; and *Chile: Proyecciones de población por sexo y edad, total del país, 1950-2025*, fasc. F/CHI. 1 (Santiago, Chile, Ministerio de Economía Fomento y Reconstrucción, Instituto Nacional de Estadísticas; and Centro Latinoamericano de Demografía, 1988), pp. 83 and 84, tables 7 and 8.

CENSUS, 22 APRIL 1970
(Indirect estimates, Chilean model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.112	0.077	1969.0	83	100
20-24	0.860	0.086	1968.0	87	106
25-29	2.589	0.090	1966.8	83	100
30-34	3.683	0.104	1965.2	88	106

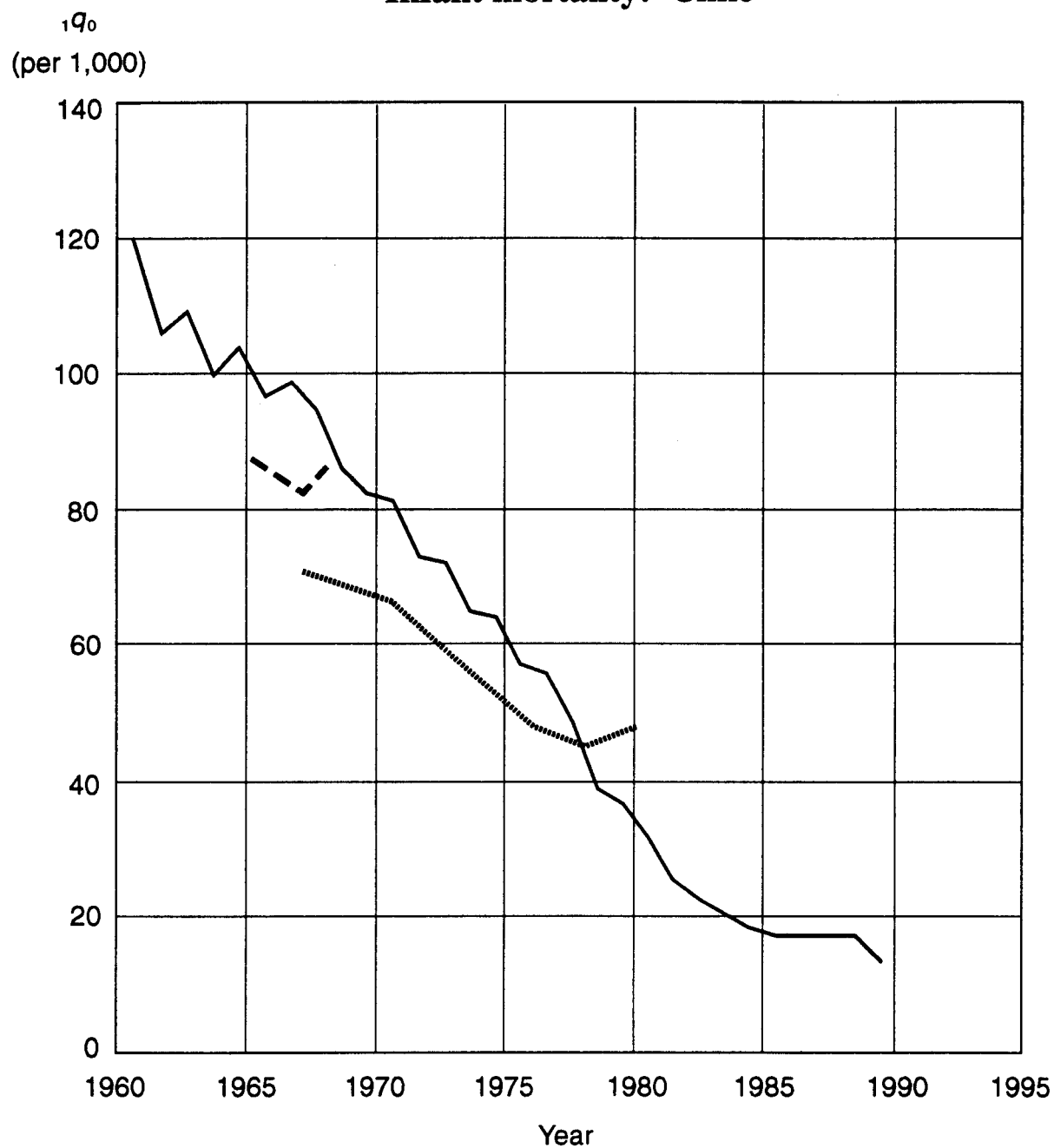
Source: Hugo Behm and Mónica Correa, *La mortalidad en los primeros años de vida en países de América Latina: Chile, 1965-1966*, CELADE Series A, No. 1030 (San José, Costa Rica, Centro Latinoamericano de Demografía, 1977), p. 48.

CENSUS, 21 APRIL 1982
(Indirect estimates, Chilean model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.131	0.070	1981.0	77	92
20-24	0.748	0.049	1979.8	49	56
25-29	1.570	0.049	1978.1	46	52
30-34	2.373	0.056	1975.9	49	57
35-39	3.022	0.068	1973.5	57	66
40-44	3.667	0.085	1970.7	67	78
45-49	4.123	0.096	1967.2	71	84

Source: Rubén de Icaza and José M. Guzmán, *Chile: estimaciones de la mortalidad infantil mediante la aplicación de la técnica de Coale-Trussell* (Santiago, Chile, Centro Latinoamericano de Demografía, 1985), p. 9, table 6.

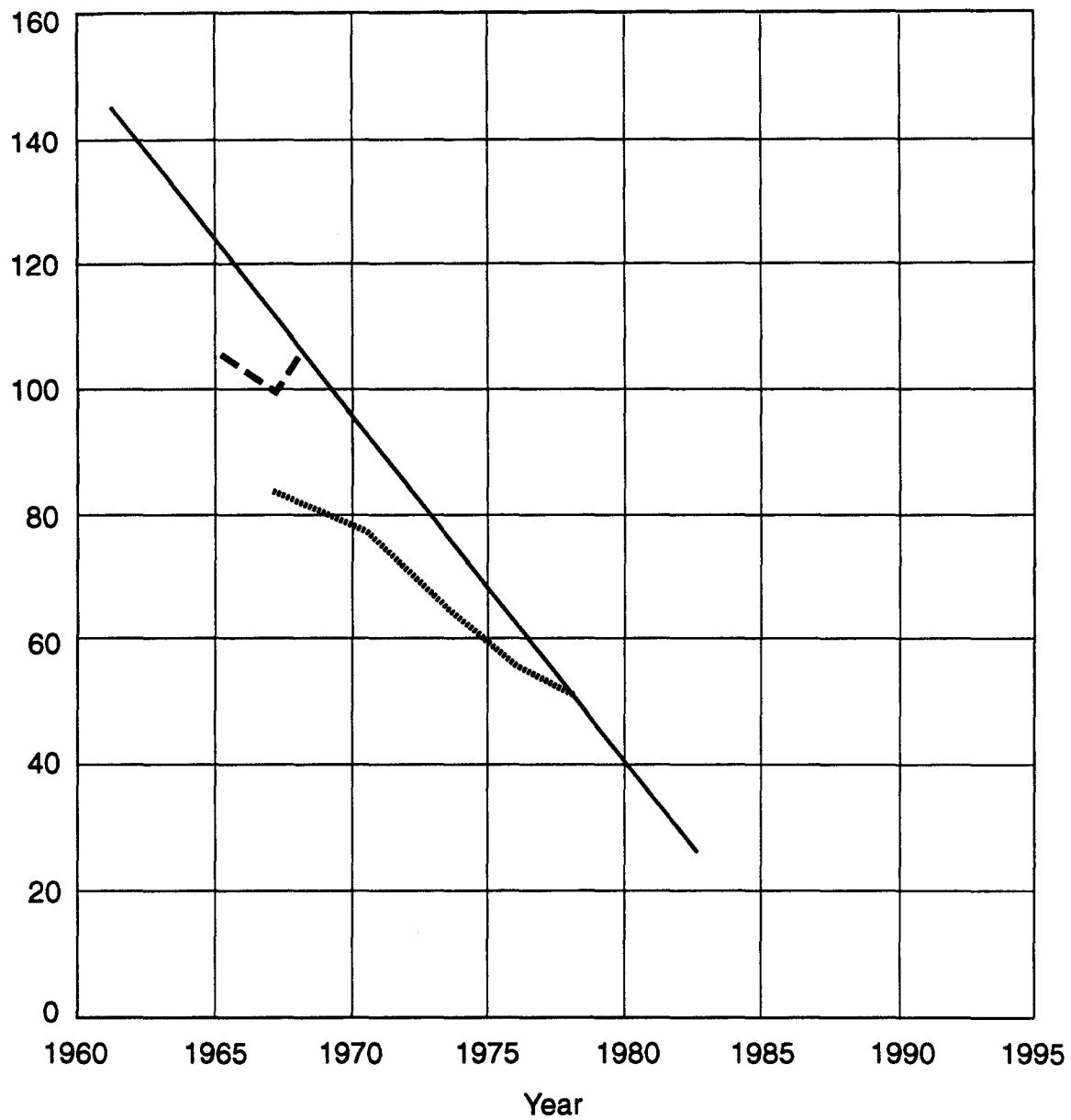
Infant mortality: Chile



— Vital registration
-- Census, 1970 (indirect)
..... Census, 1982 (indirect)

Under-five mortality: Chile

${}_5q_0$
(per 1,000)



— Life-tables
-- Census, 1970 (indirect)
..... Census, 1982 (indirect)

CHINA

Vital registration

Completeness of registration of deaths is not reported.

Censuses

Brass questions were included in the 1982 census. Tabulations from the 1990 census were not available for this report.

Sample surveys

Brass questions were included in the Female Fertility in China Survey in 1982 and the 1% Population Sample Survey in 1987.

Because fertility fell sharply in China in the 1970s, the assumption of constant fertility underlying the standard indirect analysis methods is inappropriate.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>190</i>	<i>190</i>
1981	35	51
1986	22	30

Sources: Jiang Zheng-hua, Zhang Wei-min and Zhu Li-wei, "The preliminary study to the life expectancy at birth for China's population", paper presented at the International Seminar on China's 1982 Population Census, Beijing, March 1984, p. 17, table III; and China, *Tabulations of China 1987 1% Population Sample Survey: National Volume* (Beijing, State Statistical Bureau, Department of Population Statistics, 1988), pp. 654-655, table 10-1.

CENSUS, 1 JULY 1982 (Indirect estimates, Far Eastern pattern)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>190</i>	<i>190</i>
15-19	0.014	0.080	1981.4	85	122
20-24	0.420	0.062	1980.7	60	81
25-29	1.593	0.064	1979.6	54	72
30-34	2.763	0.075	1977.9	57	77
35-39	3.802	0.098	1975.8	66	91
40-44	4.644	0.123	1973.1	74	104
45-49	5.367	0.157	1970.2	82	118

Source: China, *Major Figures by 10 Percent Sampling Tabulation on the 1982 Population Census of the People's Republic of China* (Beijing, Population Census Office under the State Council; and State Statistical Bureau, Department of Population Statistics, 1983), table 51.

FEMALE FERTILITY IN CHINA: A 1‰ POPULATION SURVEY, 31 JUNE 1982
(Indirect estimates, Far Eastern pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.015	0.057	1981.6	61	83
20-24	0.432	0.058	1980.8	57	76
25-29	1.595	0.058	1979.7	49	65
30-34	2.740	0.069	1978.0	53	70
35-39	3.773	0.093	1975.9	63	87
40-44	4.569	0.116	1973.2	71	98
45-49	5.284	0.155	1970.3	81	116

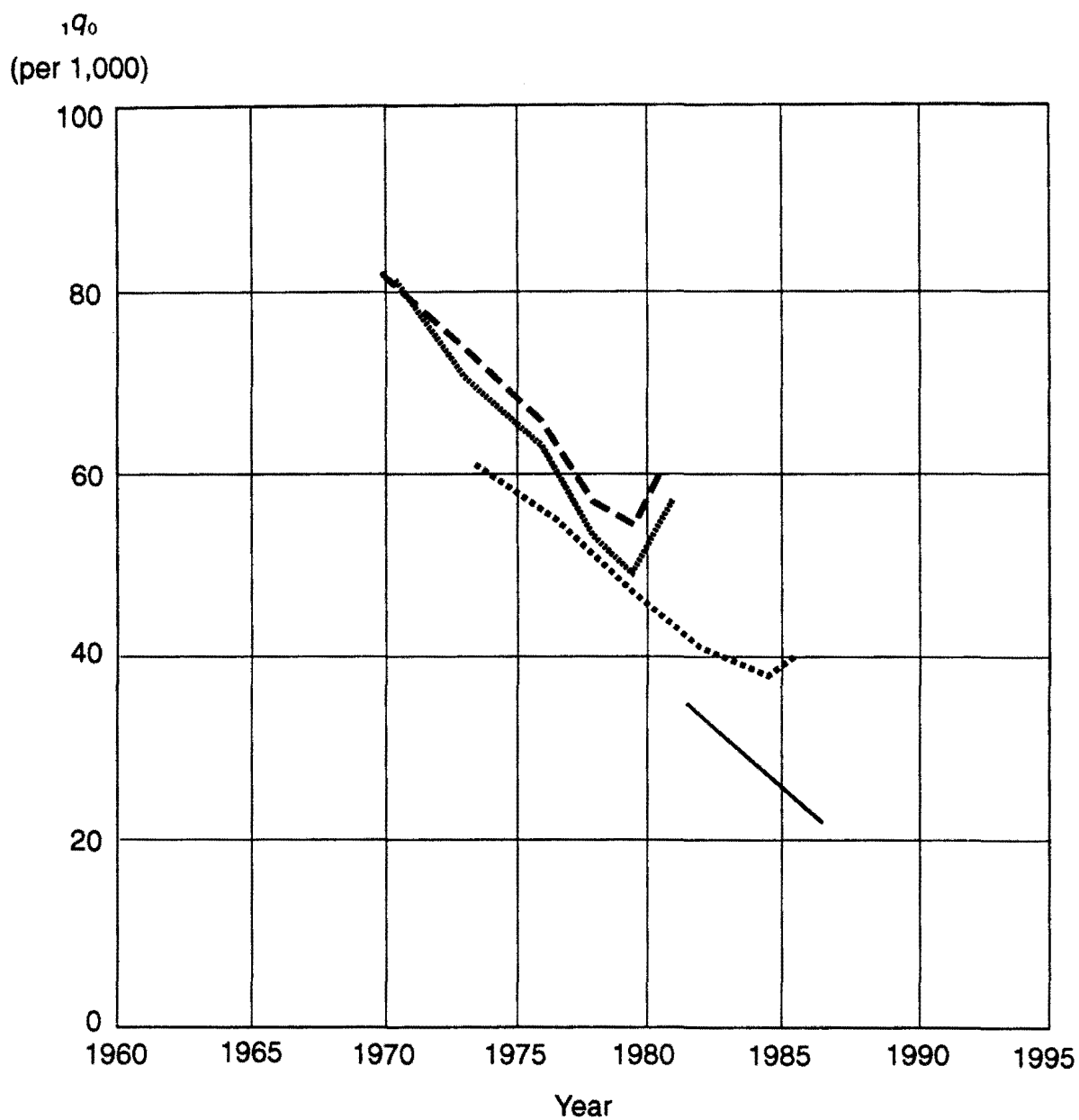
Source: *Female Fertility in China: A 1‰ Population Survey*, vols. I and III, compiled by China Population Information Centre (Beijing, New World Press, 1988), pp. 1082-1083 and 1154-1155.

CHINA 1% POPULATION SAMPLE SURVEY, 1 JULY 1987
(Indirect estimates, Far Eastern pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.016	0.050	1986.5	56	76
20-24	0.530	0.041	1985.7	40	51
25-29	1.484	0.044	1984.3	38	48
30-34	2.125	0.053	1982.1	41	53
35-39	2.883	0.066	1979.4	47	62
40-44	3.775	0.086	1976.4	55	73
45-49	4.528	0.109	1973.3	61	84

Source: *Tabulations of China 1987 1% Population Sample Survey: National Volume* (Beijing, State Statistical Bureau, Department of Population Statistics, 1988), pp. 582-583 and 596-597, tables 9-1 and 9-6.

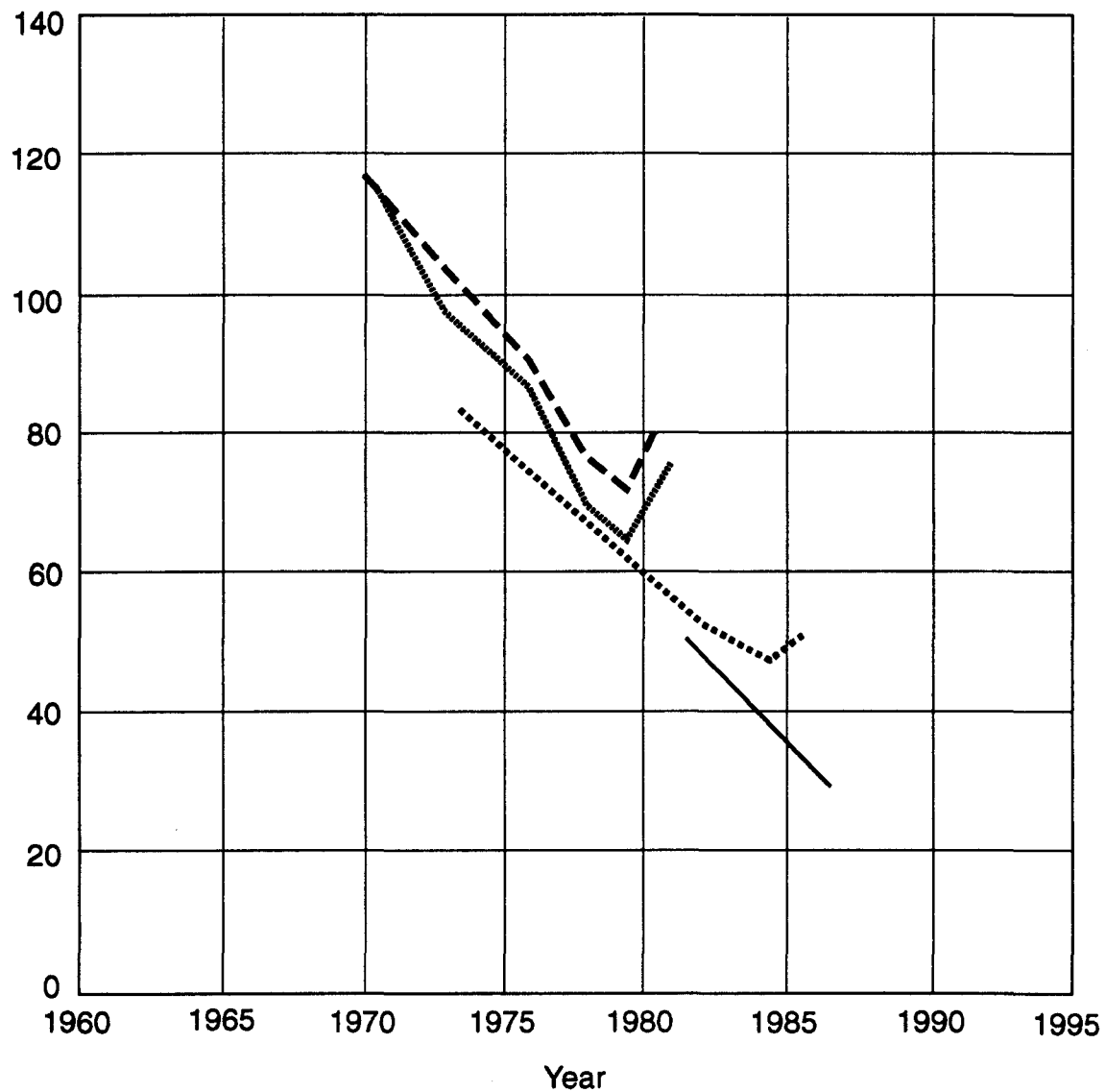
Infant mortality: China



- Life-tables
- - Census, 1982 (indirect)
- Female Fertility in China, 1% Population Survey, 1982 (indirect)
- . . . China 1% Population Sample Survey, 1987 (indirect)

Under-five mortality: China

${}_5q_0$
(per 1,000)



- Life-tables
- - Census, 1982 (indirect)
- Female Fertility in China, 1% Population Survey, 1982 (indirect)
- China 1% Population Sample Survey, 1987 (indirect)

COLOMBIA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1973 (for a 4 per cent sample) and 1985 (for a 10 per cent sample).

Sample surveys

Maternity histories were collected in 1976 by the Encuesta Colombiana de Fecundidad (WFS) and in 1986 and 1990 by the Encuesta de Prevalencia, Demografía y Salud (DHS). Brass questions were included in the Encuesta Nacional de Hogares of 1978 and 1980, in the Encuesta Nacional de Prevalencia de Uso de Anticoncepción (CPS) of 1978 and in the Segunda Encuesta Nacional de Prevalencia de Uso de Anticoncepción (CPS) of 1980.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	100	1969	..	1978	30
1961	90	1970	81	1979	43
1962	90	1971	81	1980	27
1963	88	1972	69	1981	28
1964	83	1973	69	1982	24
1965	84	1974	56	1983	23
1966	80	1975	48	1984	20
1967	78	1976	51	1985	21
1968	75	1977	44	1986	20

Sources: Hania Zlotnik, *Levels and Trends in Fertility and Mortality in Colombia*, Committee on Population and Demography, Report No. 12 (Washington, D.C., National Academy Press, 1982), p. 56, table 26; *Colombia: estadística, 1981, 1986, 1987, 1988 and 1989* (Bogotá, Departamento Administrativo Nacional de Estadística (DANE), 1981, 1985, 1987, 1989 and 1990), p. 45; pp. 225-226, tables 6.2.2-6.2.3; pp. 70 and 79, tables 2.2.2 and 2.2.7; pp. 63-64, table 2.2.3; and p. 84, tables 2.4.1, respectively; *Colombia: nacimientos registrados, 1973-1984* (Bogotá, DANE, 1986), p. 98, table 7; and *Registro de defunciones en Colombia, 1970-1978* (Bogotá, DANE and United Nations Children's Fund, 1987), p. 21, table 3.

CENSUS, 24 OCTOBER 1973
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.146	0.090	1972.8	97	158
20-24	1.061	0.088	1971.6	74	116
25-29	2.421	0.095	1969.9	68	106
30-34	3.875	0.109	1967.8	70	109
35-39	5.074	0.127	1965.5	74	116
40-44	5.786	0.145	1962.9	77	122
45-49	6.025	0.165	1960.0	79	125

Source: Colombia: XIV Censo Nacional de Población y III de Vivienda, 1973: resumen nacional (Bogotá, Colombia, Departamento Administrativo Nacional de Estadística, 1981), p. 394, table 21.

ENCUESTA COLOMBIANA DE FECUNDIDAD, MAY-AUGUST 1976
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1961-1966	80	122
1966-1971	66	103
1971-1976	70	108

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 89.

ENCUESTA COLOMBIANA DE FECUNDIDAD, MAY-AUGUST 1976
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.151	0.087	1975.5	93	151
20-24	1.051	0.088	1974.3	73	115
25-29	2.317	0.096	1972.5	68	105
30-34	3.771	0.104	1970.4	67	104
35-39	5.043	0.131	1968.0	75	119
40-44	6.219	0.151	1965.3	79	126
45-49	6.534	0.170	1962.4	80	127

Source: Jorge L. Somoza, *Illustrative Analysis: Infant and Child Mortality in Colombia*, World Fertility Survey Scientific Reports, No. 10 (Voorburg, Netherlands, International Statistical Institute, 1980), p. 40, table 5.1.

ENCUESTA NACIONAL DE HOGARES, JUNE-JULY 1978
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.117	0.074	1977.6	84	134
20-24	0.953	0.077	1976.4	66	103
25-29	2.157	0.078	1974.6	57	86
30-34	3.590	0.097	1972.4	63	96
35-39	4.796	0.125	1970.0	72	113
40-44	6.148	0.155	1967.3	81	128
45-49	6.690	0.167	1964.4	79	126

Source: Unpublished tabulations provided by the Departamento Administrativo Nacional de Estadística of Colombia.

ENCUESTA NACIONAL DE PREVALENCIA DE USO DE ANTICONCEPCIÓN,
OCTOBER-DECEMBER 1978
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
25-29	2.3	0.087	1974.8	63	97
30-34	3.8	0.105	1973.1	69	107
35-39	5.2	0.135	1971.1	80	127
40-44	6.0	0.183	1968.8	97	158
45-49	7.5	0.227	1966.0	107	177

Source: Encuesta Nacional de Prevalencia de Uso de Anticoncepción, Colombia, 1978: resultados generales (Bogotá, Colombia, Corporación Centro Regional de Población and Ministerio de Salud; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1979), p. 44, table 4.7.

ENCUESTA NACIONAL DE HOGARES, JUNE-JULY 1980
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.149	0.052	1979.4	52	79
20-24	0.937	0.071	1978.3	60	92
25-29	2.249	0.098	1976.7	71	111
30-34	3.498	0.110	1974.8	71	111
35-39	4.732	0.127	1972.7	75	119
40-44	5.816	0.145	1970.3	78	124
45-49	6.747	0.177	1967.5	85	136

Source: Unpublished tabulations provided by the Departamento Administrativo Nacional de Estadística of Colombia.

CENSUS, 15 OCTOBER 1985
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.149	0.029	1984.7	30	39
20-24	0.866	0.044	1983.4	38	54
25-29	1.795	0.049	1981.6	37	52
30-34	2.687	0.061	1979.5	42	60
35-39	3.575	0.077	1977.1	48	71
40-44	4.477	0.099	1974.5	55	83
45-49	5.227	0.115	1971.6	56	86

Source: Colombia: XV Censo Nacional de Población y IV de Vivienda, vol. V, *Demografía* (Bogotá, Colombia, Departamento Administrativo Nacional de Estadística, 1986), p. 132, table 10.

ENCUESTA DE PREVALENCIA, DEMOGRAFÍA Y SALUD,
OCTOBER-DECEMBER 1986
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1980	1990
1971-1975	62	89
1976-1980	47	64
1981-1986	33	42

Source: Colombia: Tercera Encuesta de Prevalencia del Uso de Anticonceptivos y Primera de Demografía y Salud, 1986 (Bogotá, Colombia, Corporación Centro Regional de Población and Ministerio de Salud; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), table 6.1.

ENCUESTA DE PREVALENCIA, DEMOGRAFÍA Y SALUD,
OCTOBER-DECEMBER 1986
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.128	0.023	1986.0	25	32
20-24	0.916	0.047	1984.7	41	59
25-29	1.928	0.049	1982.8	38	53
30-34	2.818	0.056	1980.6	39	54
35-39	3.808	0.085	1978.0	51	77
40-44	4.880	0.087	1975.3	49	72
45-49	6.114	0.114	1972.4	55	84

Source: Colombia: Tercera Encuesta de Prevalencia del Uso de Anticonceptivos y Primera de Demografía y Salud, 1986 (Bogotá, Colombia, Corporación Centro Regional de Población and Ministerio de Salud; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 93, table 6.4.

ENCUESTA DE PREVALENCIA, DEMOGRAFÍA Y SALUD, MAY-AUGUST 1990
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1990	1990
1976-1980	39	46
1981-1985	37	47
1986-1990	17	23

Source: Colombia: *Encuesta de Prevalencia, Demografía y Salud, 1990* (Bogotá, Colombia, Asociación Pro-Bienestar de la Familia Colombiana; and Columbia, Maryland, Institute for Resource Development/Macro International, Inc., 1991), p. 113, table 7.1.

ENCUESTA DE PREVALENCIA, DEMOGRAFÍA Y SALUD, MAY-AUGUST 1990
(Indirect estimates, North model)

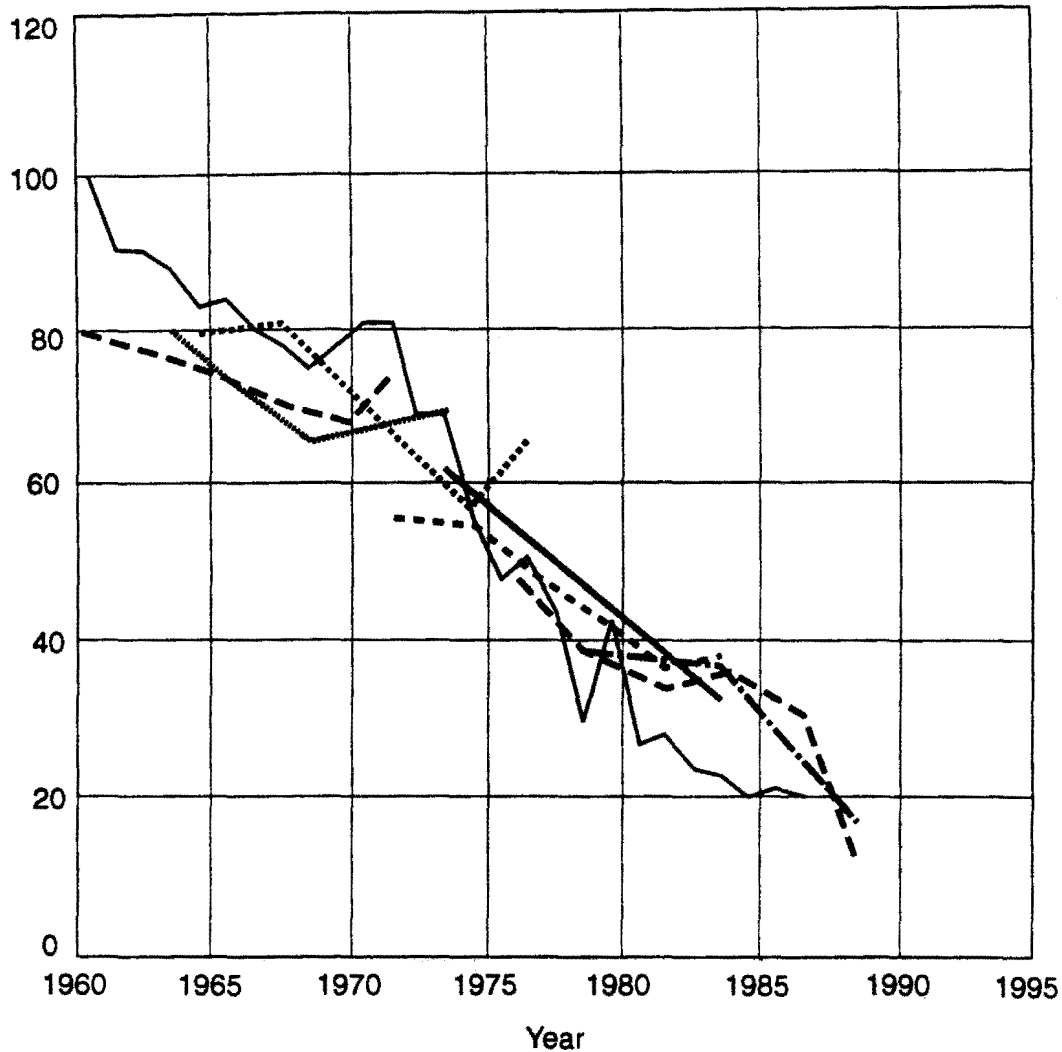
Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.11	0.000	1989.7	*	*
20-24	0.80	0.013	1988.4	12	14
25-29	1.64	0.040	1986.4	31	42
30-34	2.55	0.051	1984.1	36	50
35-39	3.08	0.052	1981.5	34	47
40-44	4.12	0.068	1978.7	40	56
45-49	5.53	0.098	1975.8	48	71

Source: Colombia: *Encuesta de Prevalencia, Demografía y Salud, 1990* (Bogotá, Colombia, Asociación Pro-Bienestar de la Familia Colombiana; and Columbia, Maryland, Institute for Resource Development/Macro International, Inc., 1991) p. 42, table 3.10.

* Denotes value above a level-25 model life-table.

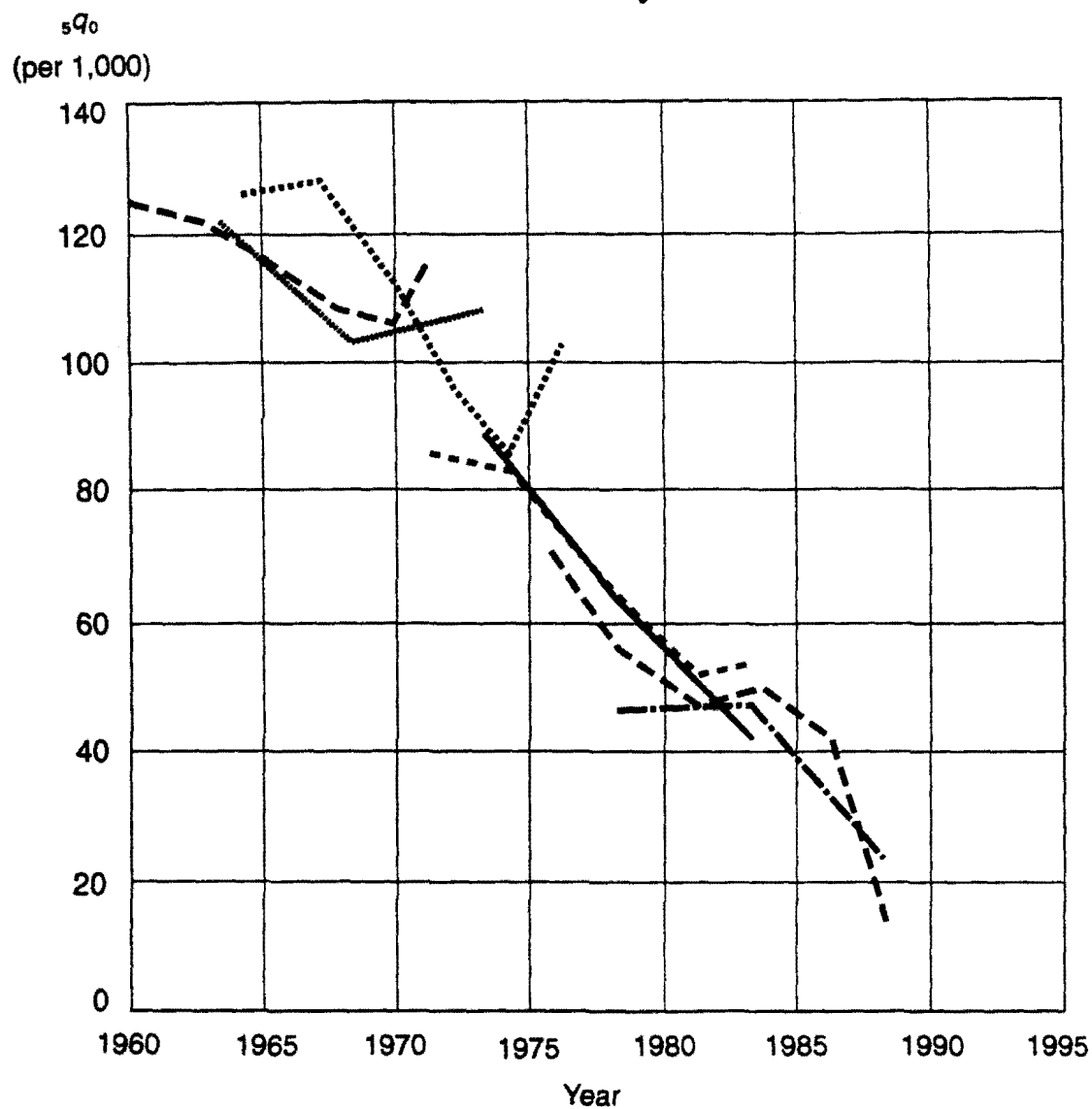
Infant mortality: Colombia

‰
(per 1,000)



- Vital registration
- - Census, 1973 (indirect)
- Encuesta Colombiana de Fecundidad, 1976 (direct)
- Encuesta Nacional de Hogares, 1978 (indirect)
- - - Census, 1985 (indirect)
- Encuesta de Prevalencia, Demografía y Salud, 1986 (direct)
- Encuesta de Prevalencia, Demografía y Salud, 1990 (direct)
- - - Encuesta de Prevalencia, Demografía y Salud, 1990 (indirect)

Under-five mortality: Colombia



- Census, 1973 (indirect)
- Encuesta Colombiana de Fecundidad, 1976 (direct)
- Encuesta Nacional de Hogares, 1978 (indirect)
- - - Census, 1985 (indirect)
- Encuesta de Prevalencia, Demografía y Salud, 1986 (direct)
- Encuesta de Prevalencia, Demografía y Salud, 1990 (direct)
- - Encuesta de Prevalencia, Demografía y Salud, 1990 (indirect)

CONGO

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1974 census.

Sample surveys

No relevant data are available.

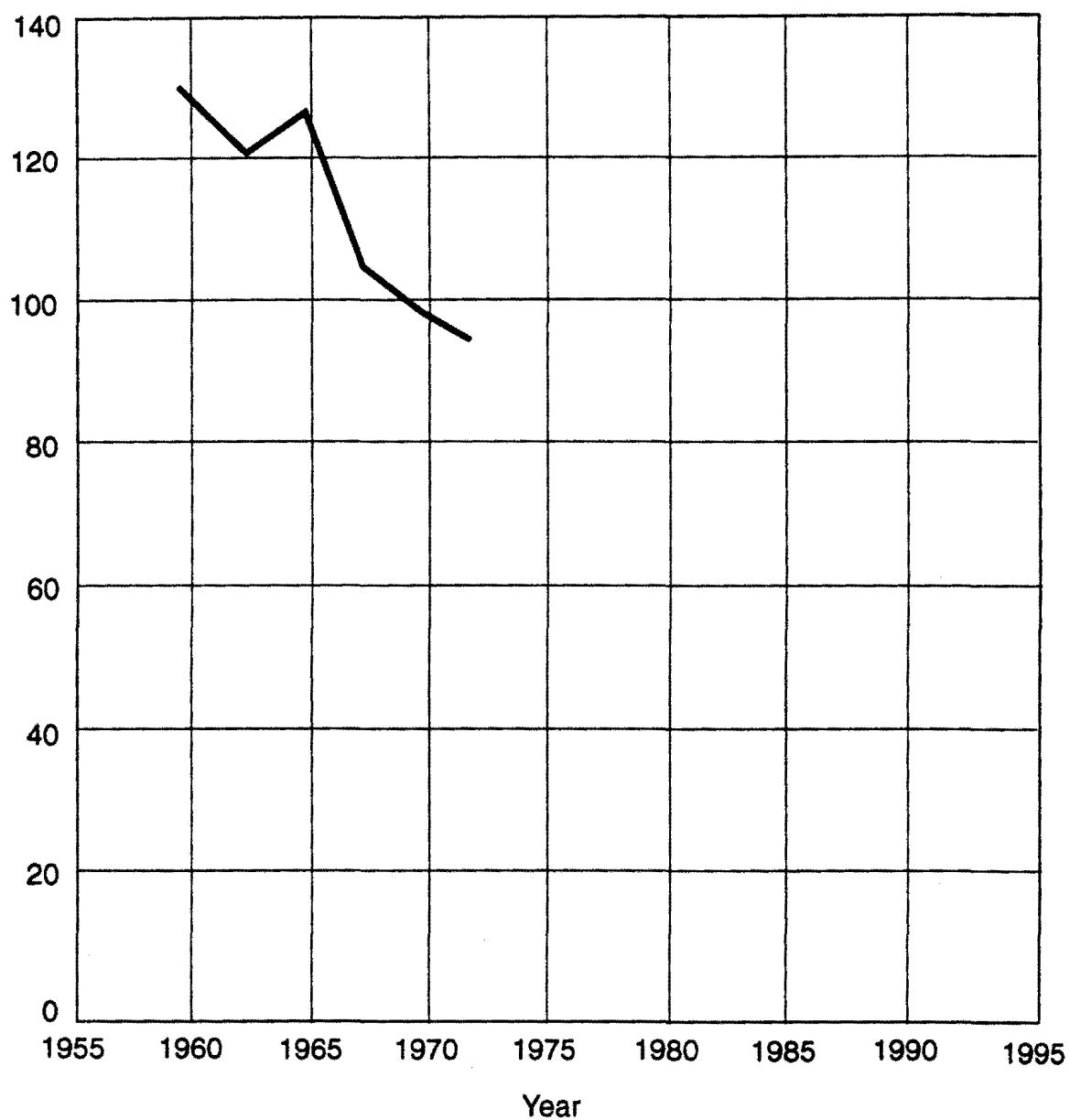
CENSUS, 7 FEBRUARY 1974
(Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				1960	1970
15-19	0.369	0.117	1972.9	102	150
20-24	1.659	0.118	1971.5	95	135
25-29	3.133	0.136	1969.5	99	144
30-34	4.074	0.154	1967.2	105	156
35-39	4.579	0.209	1964.7	127	201
40-44	4.707	0.208	1961.9	121	189
45-49	4.464	0.245	1958.8	130	208

Source: Recensement général de la population du Congo, 1974, vol. 4, Tableaux statistique détaillés (Brazzaville, Centre national de la statistique et des études économiques, 1978).

Infant mortality: Congo

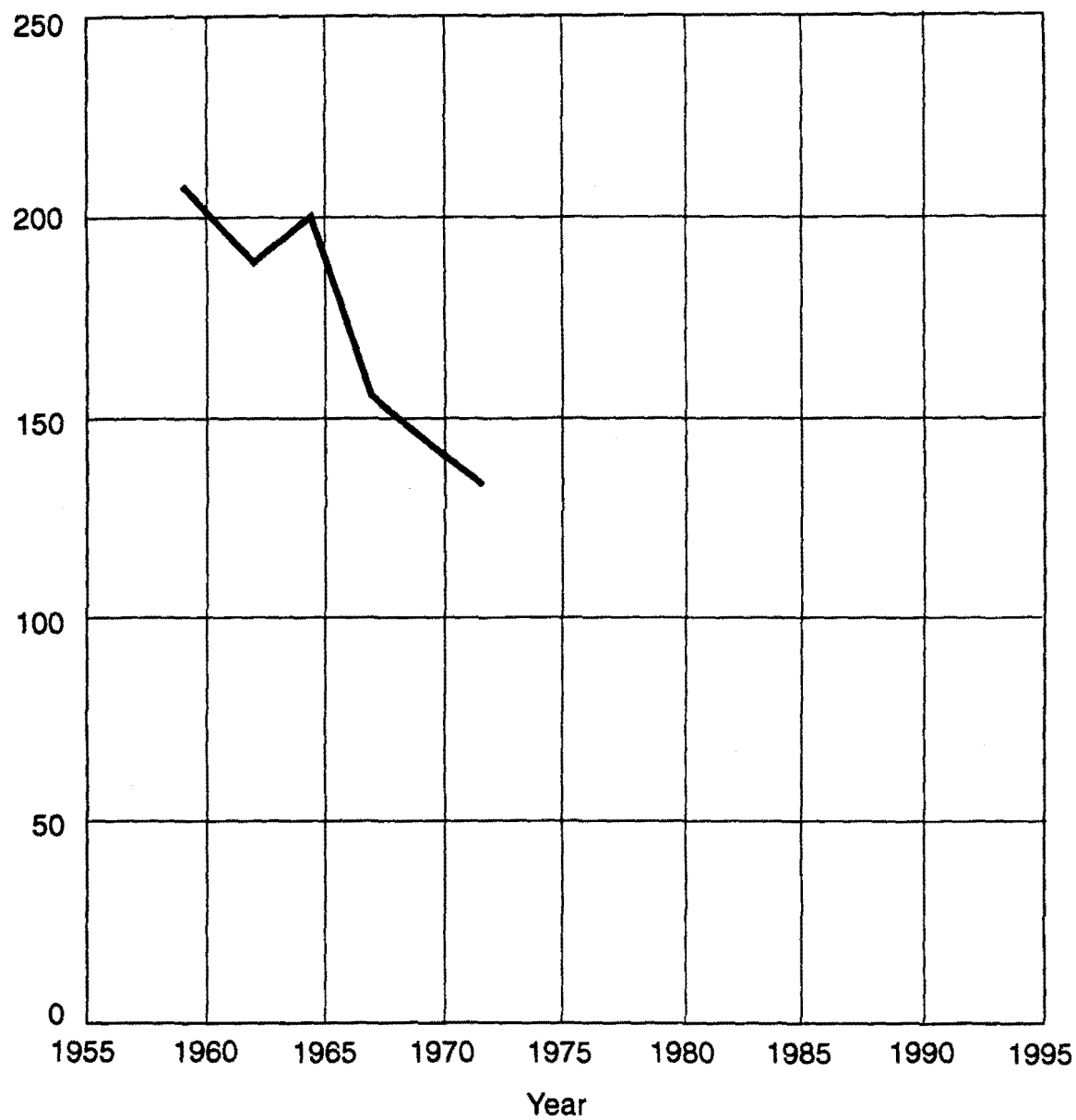
${}_1q_0$
(per 1,000)



— Census, 1974 (indirect)

Under-five mortality: Congo

‰
(per 1,000)



— Census, 1974 (indirect)

COSTA RICA

Vital registration

Registration of births and deaths is reported to be complete. National life-tables have not been included here, because they were derived using indirectly estimated adjustments.

Censuses

Brass questions were included in the 1973 and 1984 censuses.

Sample surveys

Maternity histories were collected in 1976 by the Encuesta Nacional de Fecundidad (WFS), although no information was collected for women under age 20, and by the Encuesta de Fecundidad y Salud. The Encuesta de Prevalencia Anticonceptiva of 1981 included a truncated maternity history. Brass questions were included in the Encuesta de Prevalencia Anticonceptiva (CPS) of 1978, the Encuesta de Prevalencia Anticonceptiva (CPS) of 1981 and the Encuesta Nacional de Fecundidad y Salud of 1986.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	74	1970	62	1980	19
1961	69	1971	56	1981	18
1962	74	1972	54	1982	19
1963	78	1973	45	1983	19
1964	87	1974	38	1984	19
1965	76	1975	38	1985	18
1966	65	1976	33	1986	18
1967	62	1977	28	1987	17
1968	60	1978	22	1988	15
1969	67	1979	22	1989	14

Sources: *Anuario estadístico de Costa Rica, 1972* (San José, Ministerio de Economía, Industria y Comercio, Dirección General de Estadística y Censos), p. 22, table 6; *Anuario 1982: informaciones estadísticas* (San José, Ministerio de Salud, Departamento de Estadística, Unidad Sectorial de Planificación, 1985), p. 3, table 1; *Demographic Yearbook, 1987* (United Nations publication, Sales No. E/F.88.XIII.1); and Hugo Behm and Jorge Barquero, *La mortalidad en la niñez en Centroamérica, Panamá y Bélize: Costa Rica, 1980-1989* (San José, Centro Latinoamericano de Demografía, United Nations Children's Fund and Instituto de Nutrición de Centro América y Panamá, 1990), p. 4, table 1.

CENSUS, 14-19 MAY 1973
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.161	0.063	1972.3	68	93
20-24	1.096	0.076	1971.1	68	94
25-29	2.526	0.085	1969.3	68	93
30-34	4.121	0.100	1967.2	73	102
35-39	5.501	0.118	1964.8	80	112
40-44	6.391	0.136	1962.2	85	121
45-49	6.661	0.161	1959.2	91	130

Source: Costa Rica, *Censos Nacionales de 1973: población*, tomo I (San José, Ministerio de Economía, Industria y Comercio, Dirección General de Estadística y Censos, 1974), pp. 150 and 155, tables 25-26.

ENCUESTA NACIONAL DE FECUNDIDAD, JULY-DECEMBER 1976
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1961-1966	83	104
1966-1971	73	91
1971-1976	53	61

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 101.

ENCUESTA DE PREVALENCIA ANTICONCEPTIVA, MARCH-MAY 1978
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.20	0.000	1977.1	*	*
20-24	1.02	0.029	1975.7	27	33
25-29	1.99	0.040	1973.8	34	42
30-34	3.37	0.059	1971.4	46	59
35-39	4.43	0.079	1968.9	55	74
40-44	5.54	0.079	1966.2	52	69
45-49	6.45	0.116	1963.2	67	92

Source: Luis Rosero B., *Fecundidad y anticoncepción en Costa Rica, 1981: resultados de la Segunda Encuesta de Prevalencia Anticonceptiva* (San José, Costa Rica, Asociación Demográfica Costarricense; and Columbia, Maryland, Westinghouse Health Systems, 1981), p. 34, table 12.

* Denotes value above a level-25 model life-table.

ENCUESTA DE PREVALENCIA ANTICONCEPTIVA, JANUARY-APRIL 1981
(Direct estimates)

Period	Mortality rate (per 1,000)
	1980
1976-1977	26
1978-1979	18

Source: Luis Rosero B., *Fecundidad y anticoncepción en Costa Rica, 1981: resultados de la Segunda Encuesta de Prevalencia Anticonceptiva* (San José, Costa Rica, Asociación Demográfica Costarricense; and Columbia, Maryland, Westinghouse Health Systems, 1981), p. 30, table 10.

ENCUESTA DE PREVALENCIA ANTICONCEPTIVA, JANUARY-APRIL 1981
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1980
15-19	0.18	0.000	1980.2	*	*
20-24	1.02	0.039	1978.8	36	45
25-29	1.99	0.040	1976.7	34	42
30-34	3.16	0.063	1974.3	49	63
35-39	4.17	0.077	1971.6	54	71
40-44	5.32	0.103	1968.8	65	89
45-49	5.90	0.092	1965.9	54	71

Source: Luis Rosero B., *Fecundidad y anticoncepción en Costa Rica, 1981: resultados de la Segunda Encuesta de Prevalencia Anticonceptiva* (San José, Costa Rica, Asociación Demográfica Costarricense; and Columbia, Maryland, Westinghouse Health Systems, 1981), p. 34, table 12.

* Denotes value above a level-25 model life-table.

CENSUS, 11 JUNE 1984
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1980
15-19	0.167	0.020	1983.4	21	24
20-24	0.960	0.025	1982.0	23	28
25-29	1.944	0.032	1980.1	28	34
30-34	2.795	0.045	1977.7	37	45
35-39	3.647	0.063	1975.2	46	59
40-44	4.647	0.084	1972.4	55	73
45-49	5.547	0.100	1969.5	59	79

Source: *Censo de Población, 1984*, tomo I (San José, Costa Rica, Ministerio de Economía, Industria y Comercio, Dirección General de Estadística y Censos, 1987), p. 166, table 23.

ENCUESTA DE FECUNDIDAD Y SALUD, JANUARY-MAY 1986
(Direct estimates)

Period	Mortality rate (per 1,000)
	190
1970-1974	64
1975-1979	22
1981-1984	19

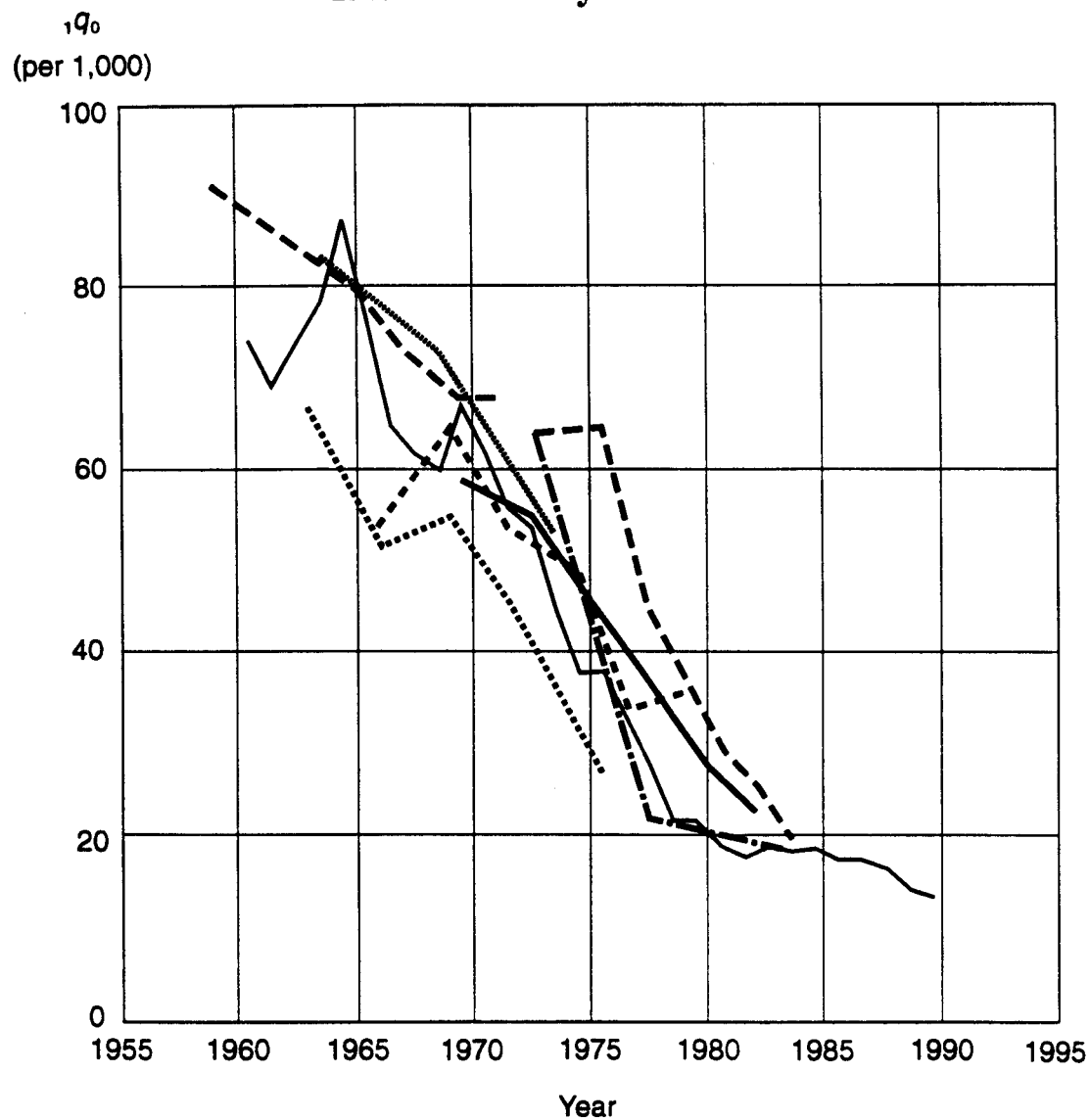
Source: Asociación Demográfica Costarricense, *Encuesta Nacional de Fecundidad y Salud, Costa Rica, 1986* (San José, 1987), p. 75, table 8.2.

ENCUESTA DE FECUNDIDAD Y SALUD, JANUARY-MAY 1986
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.19	0.053	1984.9	50	65
20-24	0.94	0.021	1983.6	20	24
25-29	2.05	0.029	1981.9	26	31
30-34	2.84	0.035	1979.9	30	36
35-39	3.48	0.060	1977.7	45	58
40-44	4.35	0.099	1975.3	65	88
45-49	5.37	0.108	1972.4	64	87

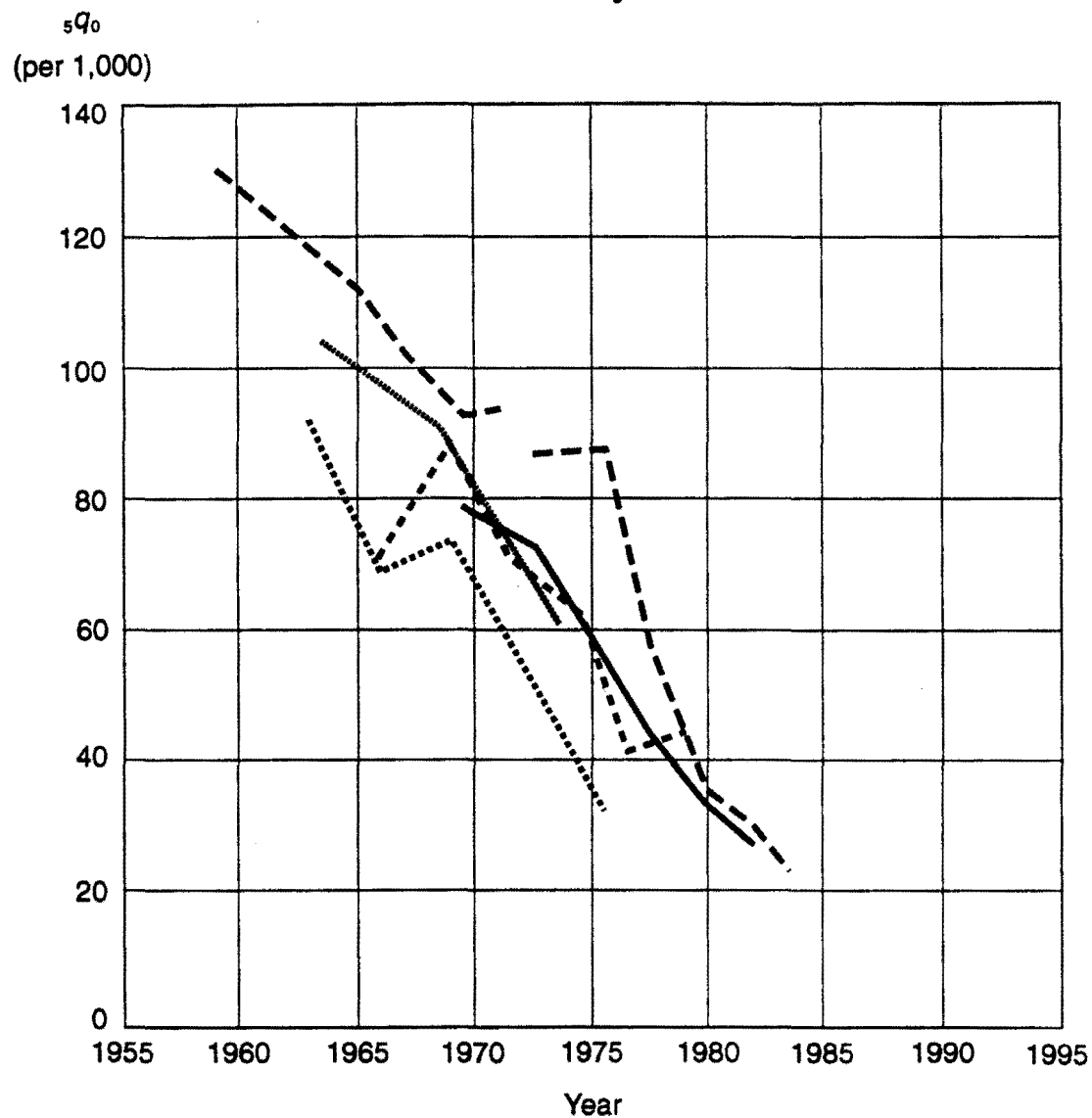
Source: Asociación Demográfica Costarricense, *Encuesta Nacional de Fecundidad y Salud, Costa Rica, 1986* (San José, 1987), p. 50, table 5.2.

Infant mortality: Costa Rica



- Vital registration
- - - Census, 1973 (indirect)
- Encuesta Nacional de Fecundidad, 1976 (direct)
- Encuesta de Prevalencia Anticonceptiva, 1978 (indirect)
- - - Encuesta de Prevalencia Anticonceptiva, 1981 (indirect)
- Census, 1984 (indirect)
- Encuesta de Fecundidad y Salud, 1986 (direct)
- - - Encuesta de Fecundidad y Salud, 1986 (indirect)

Under-five mortality: Costa Rica



- Census, 1973 (indirect)
- Encuesta Nacional de Fecundidad, 1976 (direct)
- Encuesta de Prevalencia Anticonceptiva, 1978 (indirect)
- Encuesta de Prevalencia Anticonceptiva, 1981 (indirect)
- Census, 1984 (indirect)
- Encuesta de Fecundidad y Salud, 1986 (indirect)

CÔTE D'IVOIRE

Vital registration

Completeness of death registration is not reported.

Censuses

No relevant data are available.

Sample surveys

Maternity histories were collected in the Enquête ivoirienne sur la fécondité (WFS) of 1980-1981. A multi-round survey that also included Brass questions, the Enquête démographique à passages répétés, was held in 1978-1979. The published mortality estimates from this survey refer only to nationals of Côte d'Ivoire, comprising 78 per cent of the total population according to the 1975 census.

ENQUÊTE DÉMOGRAPHIQUE À PASSAGES RÉPÉTÉS, MARCH 1978-AUGUST 1979 (Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1978-1979	84	145

Source: Côte d'Ivoire, *Enquête démographique à passages répétés, 1978-1979: résultats définitifs* (Abidjan, Ministère du plan et de l'industrie, Direction de la statistique, n.d.), p. 156, table 3.3.

NOTE: Estimates refer only to nationals of Côte d'Ivoire.

ENQUÊTE DÉMOGRAPHIQUE À PASSAGES RÉPÉTÉS, MARCH 1978-AUGUST 1979 (Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.622	0.159	1976.7	115	168
20-24	1.972	0.177	1975.2	133	197
25-29	3.471	0.205	1973.3	145	217
30-34	4.790	0.283	1971.3	190	284
35-39	5.808	0.261	1969.2	166	248
40-44	6.037	0.295	1966.8	176	263
45-49	6.218	0.327	1964.0	181	271

Source: Côte d'Ivoire, *Enquête démographique à passages répétés, 1978-1979: résultats définitifs* (Abidjan, Ministère du plan et de l'industrie, Direction de la statistique, n.d.), p. 176, table 3.12.

NOTE: Estimates refer only to nationals of Côte d'Ivoire.

ENQUÊTE IVOIRIENNE SUR LA FÉCONDITÉ, AUGUST 1980-MARCH 1981
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1966-1970	165	253
1971-1975	148	231
1976-1980	113	172

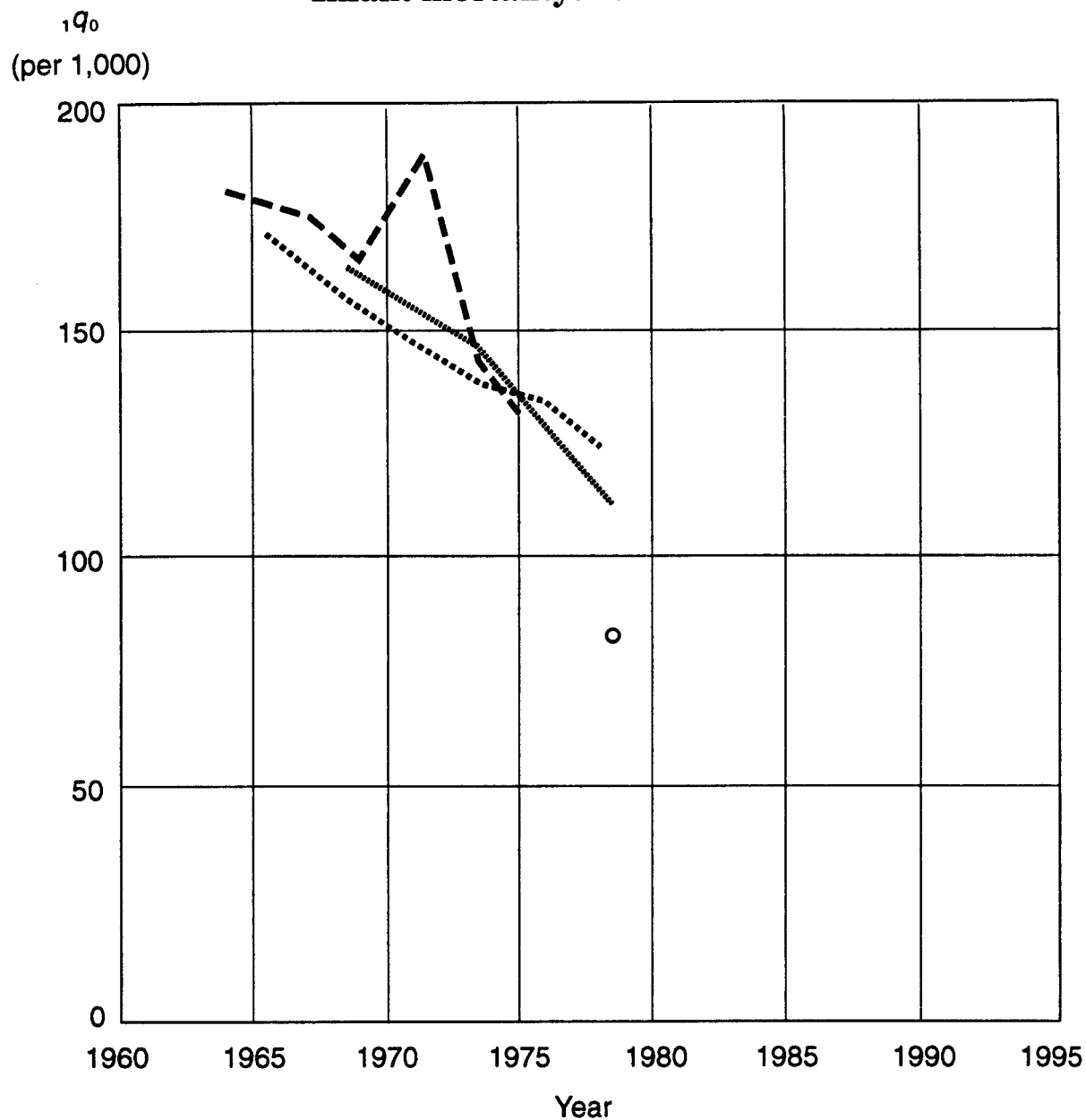
Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, rev. ed., World Fertility Survey Comparative Studies, No. 43 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 52.

ENQUÊTE IVOIRIENNE SUR LA FÉCONDITÉ, AUGUST 1980-MARCH 1981
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.506	0.175	1979.4	151	226
20-24	1.909	0.163	1977.9	126	186
25-29	3.337	0.193	1975.9	136	203
30-34	4.740	0.210	1973.6	140	208
35-39	5.865	0.238	1971.1	149	222
40-44	6.726	0.271	1968.5	158	237
45-49	6.857	0.318	1965.7	172	258

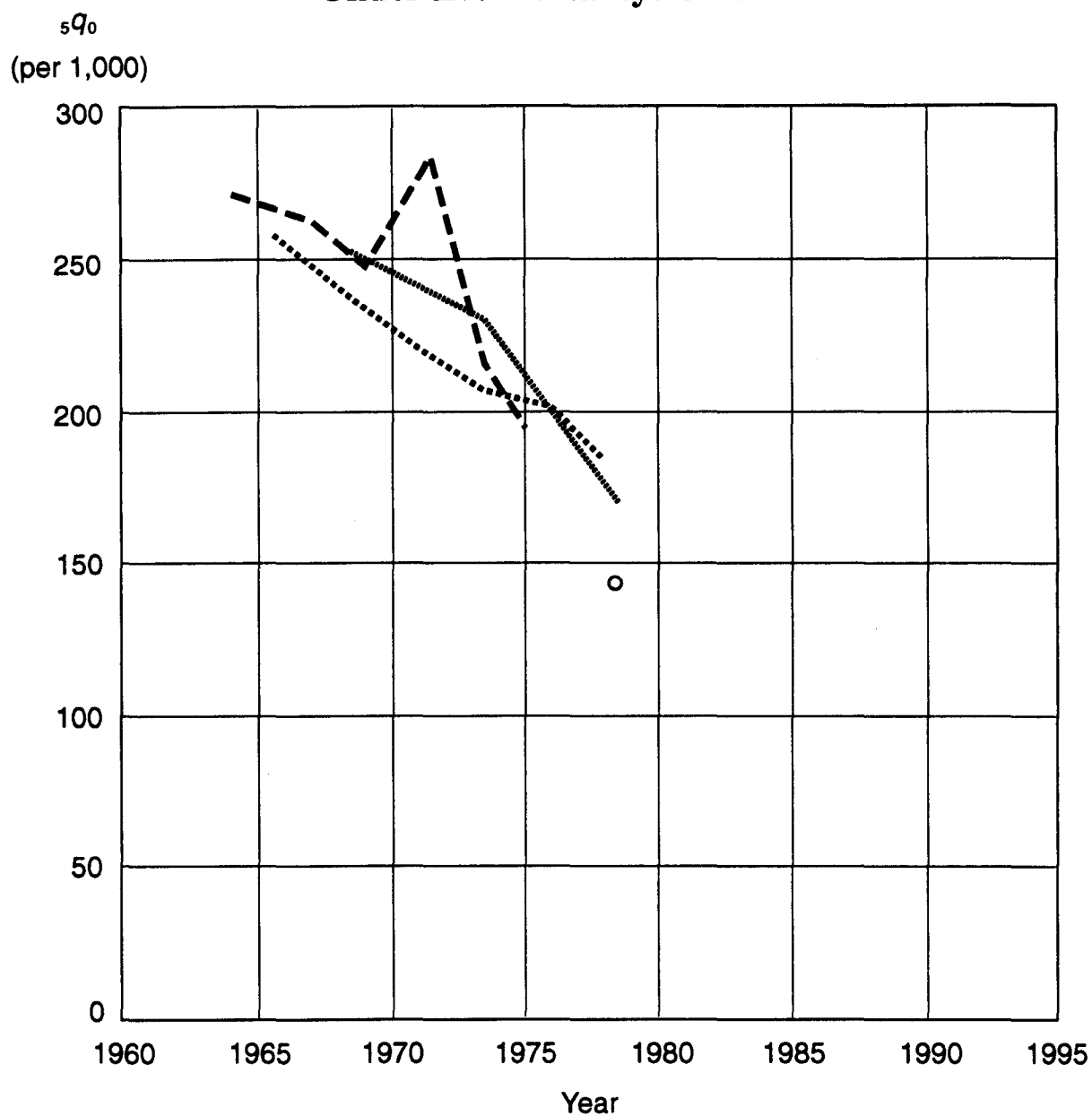
Source: Côte d'Ivoire, *Enquête ivoirienne sur la fécondité, 1980-81: rapport principal*, vol. II, *Tableaux statistiques* (Abidjan, Ministère de l'économie et des finances, Direction de la statistique, 1984), pp. 163-164, table 2.34.

Infant mortality: Côte d'Ivoire



- Enquête démographiques à passage répétés, 1978-1979 (direct)
- - Enquête démographiques à passage répétés, 1978-1979 (indirect)
- Enquête ivoirienne sur la fécondité, 1980/81 (direct)
- Enquête ivoirienne sur la fécondité, 1980/81 (indirect)

Under-five mortality: Côte d'Ivoire



- Enquête démographiques à passage répétés, 1978-1979 (direct)
- — Enquête démographiques à passage répétés, 1978-1979 (indirect)
- Enquête ivoirienne sur la fécondité, 1980/81 (direct)
- Enquête ivoirienne sur la fécondité, 1980/81 (indirect)

CUBA

Vital registration

Registration of births and deaths is reported to be complete.

Censuses

Brass questions were included in the 1970 and 1981 censuses, although the 1970 data are not available and the 1981 data are derived from a 5.1 per cent sample.

Sample surveys

Maternity histories were collected in 1987 by the Encuesta Nacional de Fecundidad, although direct estimates of child mortality from this survey are not available. Brass questions were included in 1974 by the Encuesta Nacional de Ingresos y Egresos de la Población and in 1979 by the Encuesta Demográfica Nacional.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	37	1970	39	1980	20
1961	39	1971	37	1981	19
1962	42	1972	28	1982	17
1963	38	1973	29	1983	17
1964	38	1974	29	1984	15
1965	38	1975	27	1985	17
1966	37	1976	23	1986	14
1967	36	1977	25	1987	13
1968	38	1978	22	1988	12
1969	47	1979	19		

Sources: Anuario demográfico de Cuba, 1979 (Havana, Comité Estatal de Estadísticas, Dirección de Demografía, 1981), p. 105, table 32; and Anuario estadístico de Cuba, 1988 (Havana, Comité Estatal de Estadísticas, n.d.), p. 71, table II.13.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1980</i>
1969-1971	41	46
1980-1982	18	23
1985-1986	15	19

Source: Data provided to the United Nations Statistical Office.

ENCUESTA NACIONAL DE INGRESOS Y EGRESOS DE LA POBLACIÓN, 1974
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.221	0.028	1973.3	28	33
20-24	1.114	0.035	1971.9	32	40
25-29	2.213	0.035	1970.0	30	36
30-34	..	0.044	1967.7	36	44
35-39	..	0.046	1965.2	35	43
40-44	..	0.055	1962.6	38	48
45-49	..	0.070	1959.7	43	55

Source: "Cuba: La mortalidad infantil y sus diferencias sociales y económicas", Havana, Comité Estatal de Estadísticas; and Santiago, Chile, Centro Latinoamericano de Demografía, 1988; p. 101, table II.4, unpublished.

ENCUESTA DEMOGRÁFICA NACIONAL, 22-31 MARCH 1979
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.162	0.034	1978.3	38	47
20-24	0.992	0.036	1976.8	33	41
25-29	1.856	0.036	1974.6	30	37
30-34	2.512	0.038	1972.0	31	37
35-39	3.242	0.046	1969.2	35	42
40-44	3.677	0.054	1966.2	37	46
45-49	3.933	0.062	1963.3	38	48

Sources: Cuba, *Encuesta Demográfica Nacional de 1979*, vol. I, *Metodología y tablas seleccionadas* (Havana, Comité Estatal de Estadísticas, 1981), p. 25, table 1; and "Cuba: la mortalidad infantil y sus diferencias sociales y económicas", Havana, Comité Estatal de Estadísticas; and Santiago, Chile, Centro Latinoamericano de Demografía, 1988; p. 101, table II.4, unpublished.

CENSUS, 11 SEPTEMBER 1981
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.174	0.018	1980.6	18	21
20-24	0.878	0.022	1979.1	21	25
25-29	1.674	0.028	1977.1	24	28
30-34	2.373	0.033	1974.7	27	32
35-39	2.977	0.039	1972.1	30	36
40-44	3.413	0.046	1969.4	33	40
45-49	3.729	0.054	1966.5	34	42

Source: *Censo de Población y Viviendas, 1981, República de Cuba*, vol. 16 (Havana, Comité Estatal de Estadísticas, Oficina Nacional del Censo, 1984), pp. 99 and 105, tables 25 and 26.

ENCUESTA NACIONAL DE FECUNDIDAD, NOVEMBER-DECEMBER 1987
(Indirect estimates, West model)

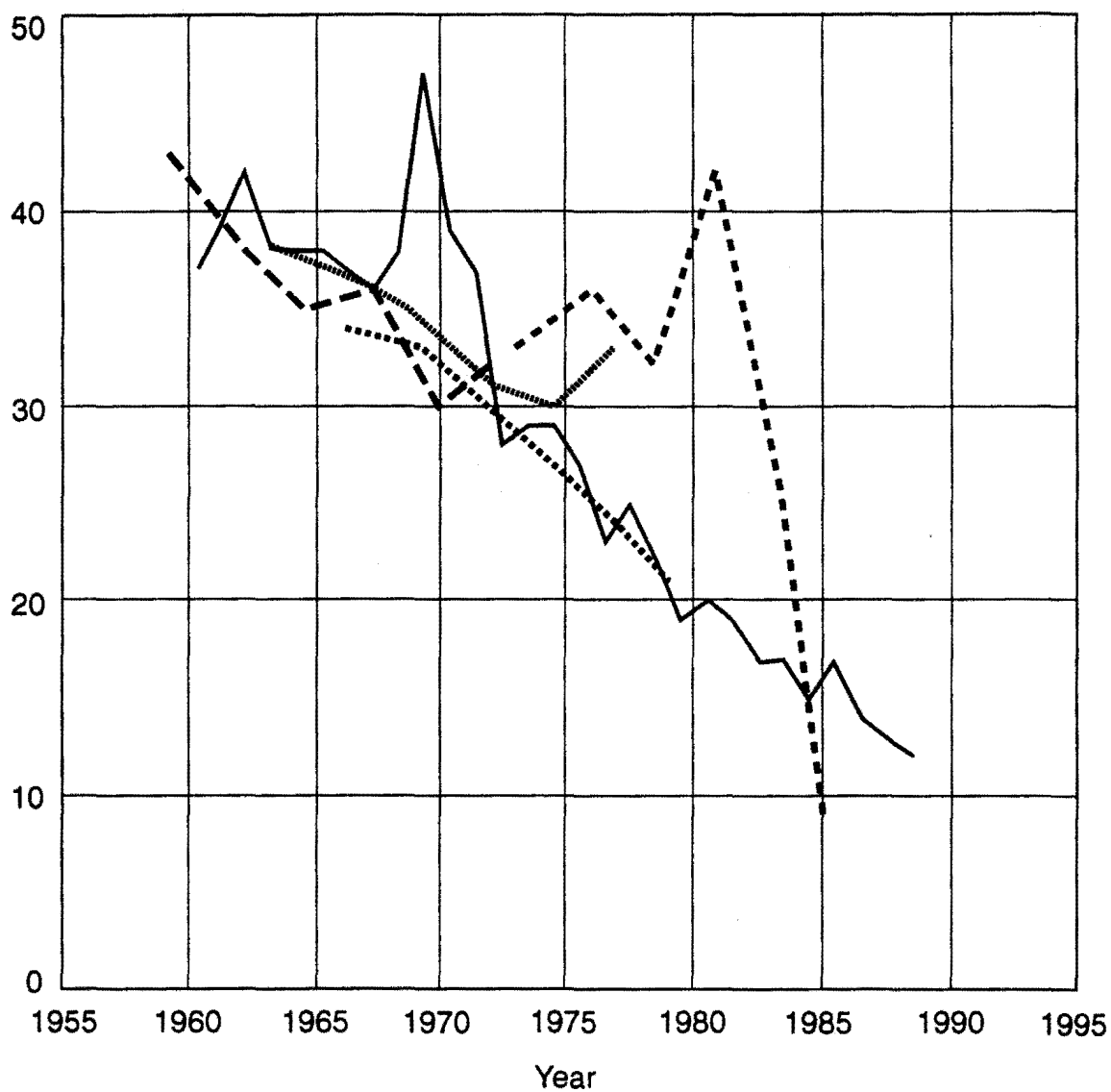
Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.144	0.004	1986.6	^a	^a
20-24	0.684	0.009	1985.2	9	10
25-29	1.337	0.029	1983.3	25	30
30-34	2.000	0.052	1981.1	42	52
35-39	2.353	0.042	1978.6	32	40
40-44	2.843	0.051	1976.0	36	44
45-49	3.449	0.052	1973.1	33	41

Source: Cuba, *Encuesta Nacional de Fecundidad, 1987* (Havana, Comité Estatal de Estadísticas, Instituto de Investigaciones Estadísticas, n.d.), p. 201, table 22.

^a Denotes value above a level-25 model life-table.

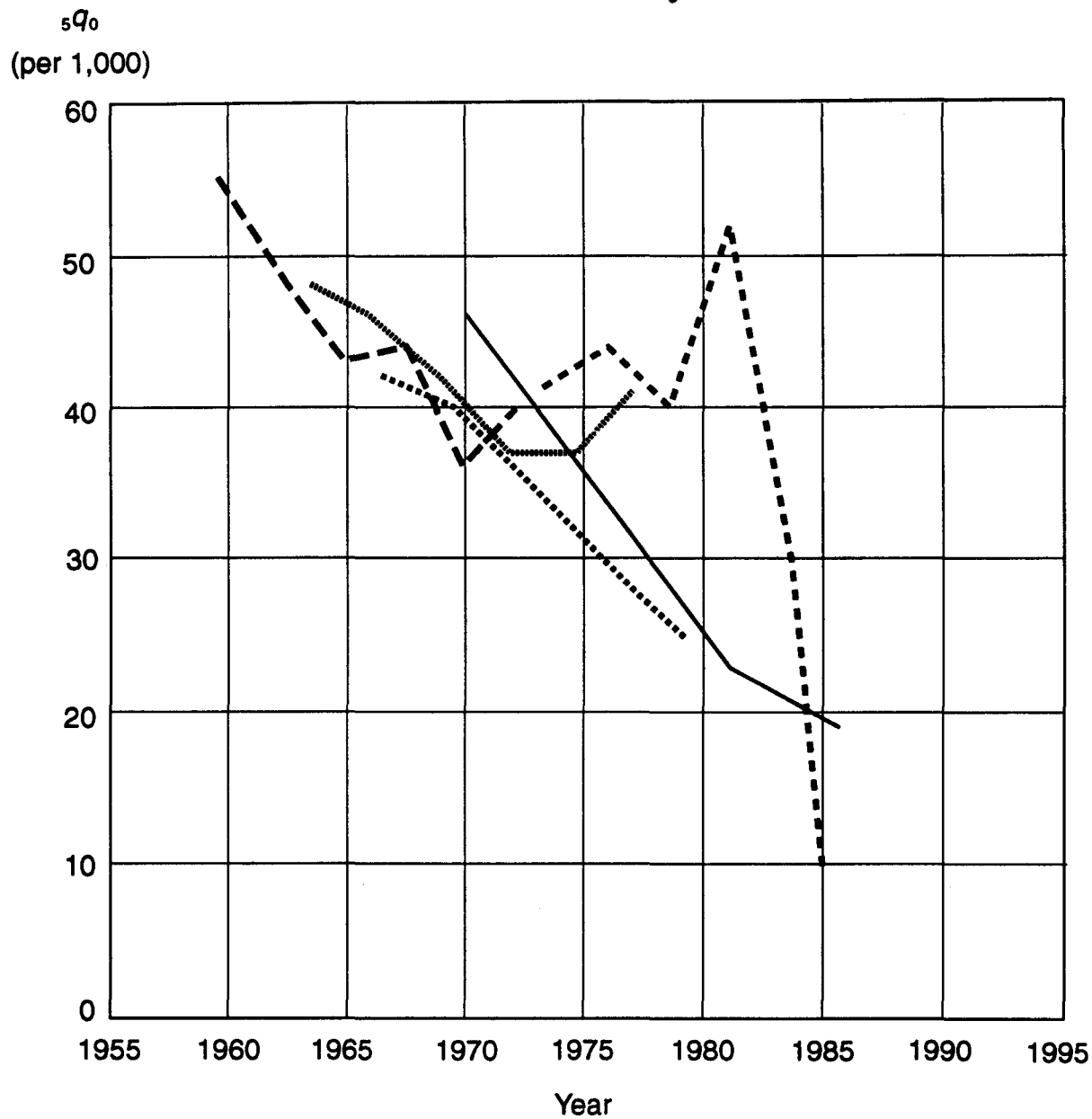
Infant mortality: Cuba

${}_1q_0$
(per 1,000)



- Vital registration
- - Encuesta Nacional de Ingresos y Egresos, 1974 (indirect)
- Encuesta Demográfica Nacional, 1979 (indirect)
- Census, 1981 (indirect)
- . - Encuesta Nacional de Fecundidad, 1987 (indirect)

Under-five mortality: Cuba



- Life-tables
- - Encuesta Nacional de Ingresos y Egresos, 1974 (indirect)
- Encuesta Demográfica Nacional, 1979 (indirect)
- Census, 1981 (indirect)
- . - Encuesta Nacional de Fecundidad, 1987 (indirect)

DOMINICAN REPUBLIC

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1970 and 1981 censuses. The data from the 1981 census are for a 5 per cent sample of households.

Sample surveys

Maternity histories were collected in 1975 and in 1980 by the Encuesta Nacional de Fecundidad (WFS) and in 1986 by the Encuesta Nacional Demográfica y de Salud (DHS). Brass questions were included in the Encuesta Nacional de Prevalencia del Uso de Anticonceptivos of 1983 (CPS), but the data were insufficient for the derivation of mortality estimates.

CENSUS, 9-10 JANUARY 1970
(Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>190</i>	<i>190</i>
15-19	0.243	0.107	1969.1	111	167
20-24	1.576	0.130	1967.8	107	160
25-29	3.271	0.140	1965.8	103	151
30-34	4.572	0.139	1963.4	98	142
35-39	5.598	0.146	1960.8	98	142
40-44	5.807	0.174	1957.9	107	159
45-49	5.979	0.183	1954.7	106	157

Source: Dominican Republic, *Comentarios sobre los resultados definitivos del V Censo Nacional de Población: segunda parte* (Santo Domingo, Oficina Nacional de Estadística, 1972), pp. 41 and 48, tables 15 and 18.

ENCUESTA NACIONAL DE FECUNDIDAD, APRIL-JUNE 1975
(Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>190</i>	<i>190</i>
1960-1965	104	155
1965-1970	98	136
1970-1975	89	128

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 104.

ENCUESTA NACIONAL DE FECUNDIDAD, APRIL-JUNE 1975
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.225	0.112	1974.3	112	171
20-24	1.423	0.126	1973.1	105	155
25-29	3.121	0.124	1971.3	95	135
30-34	4.687	0.141	1969.1	99	145
35-39	6.339	0.155	1966.6	103	152
40-44	6.846	0.161	1963.8	102	149
45-49	6.858	0.154	1960.7	95	135

Source: Albino Bocaz, "Confiabilidad de la muestras: análisis comparativo de fecundidad", Santiago, Chile, Centro Latinoamericano de Demografía, 1979, unpublished.

ENCUESTA NACIONAL DE FECUNDIDAD, FEBRUARY-MAY 1980
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1965-1969	83	128
1970-1974	77	107
1975-1978	67	..

Source: Bienvenida Rodríguez Sepúlveda, *Evaluación de la Encuesta Nacional de Fecundidad de la República Dominicana de 1980*, World Fertility Survey Scientific Reports, No. 63 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 63, table 35.

NOTE: Figures refer to cohorts of births during periods shown.

ENCUESTA NACIONAL DE FECUNDIDAD, FEBRUARY-MAY 1980
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.2	0.110	1979.2	106	159
20-24	1.2	0.108	1978.0	93	131
25-29	2.7	0.101	1976.2	82	110
30-34	4.1	0.130	1974.1	95	135
35-39	5.5	0.127	1971.7	91	127
40-44	6.4	0.152	1969.1	98	142
45-49	6.8	0.169	1966.0	101	148

Source: Bienvenida Rodríguez Sepúlveda, *Evaluación de la Encuesta Nacional de Fecundidad de la República Dominicana de 1980*, World Fertility Survey Scientific Reports, No. 63 (Voorburg, Netherlands, International Statistical Institute, 1984), pp. 42 and 64, tables 20 and 37.

CENSUS, 12-13 DECEMBER 1981
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.215	0.085	1980.8	79	106
20-24	1.130	0.088	1979.5	77	101
25-29	2.348	0.089	1977.6	73	96
30-34	3.654	0.097	1975.5	76	100
35-39	4.973	0.110	1973.0	81	109
40-44	5.687	0.123	1970.3	85	116
45-49	6.093	0.129	1967.2	84	114

Source: Dominican Republic, *Censo Nacional de Población y Vivienda, 1981: resultados preliminares obtenidos por muestra* (Santo Domingo, Oficina Nacional de Estadística, 1983), pp. 104 and 114, tables 24 and 25.

ENCUESTA DEMOGRÁFICA Y DE SALUD, SEPTEMBER-DECEMBER 1986
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1971-1975	80	119
1976-1980	75	98
1981-1986	68	88

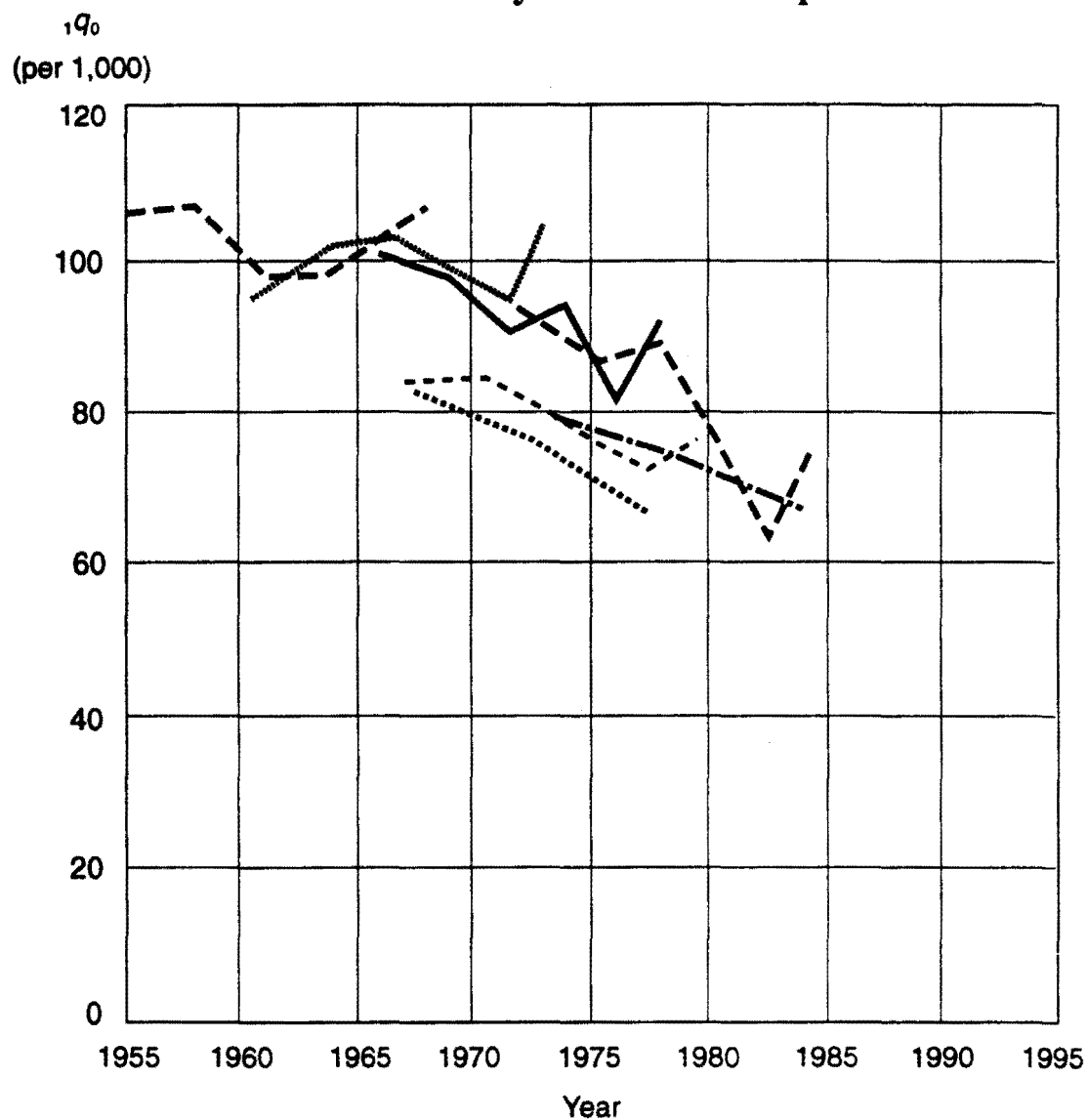
Source: *Encuesta Demográfica y de Salud, 1986* (Santo Domingo, Dominican Republic, Consejo Nacional de Población y Familia; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1987), p. 66, table 8.1.

ENCUESTA DEMOGRÁFICA Y DE SALUD, SEPTEMBER-DECEMBER 1986
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.19	0.105	1985.6	100	145
20-24	1.05	0.086	1984.4	76	100
25-29	2.24	0.076	1982.6	64	81
30-34	3.45	0.099	1980.4	77	101
35-39	4.61	0.126	1978.0	90	125
40-44	5.50	0.127	1975.3	87	120
45-49	7.02	0.151	1972.2	94	133

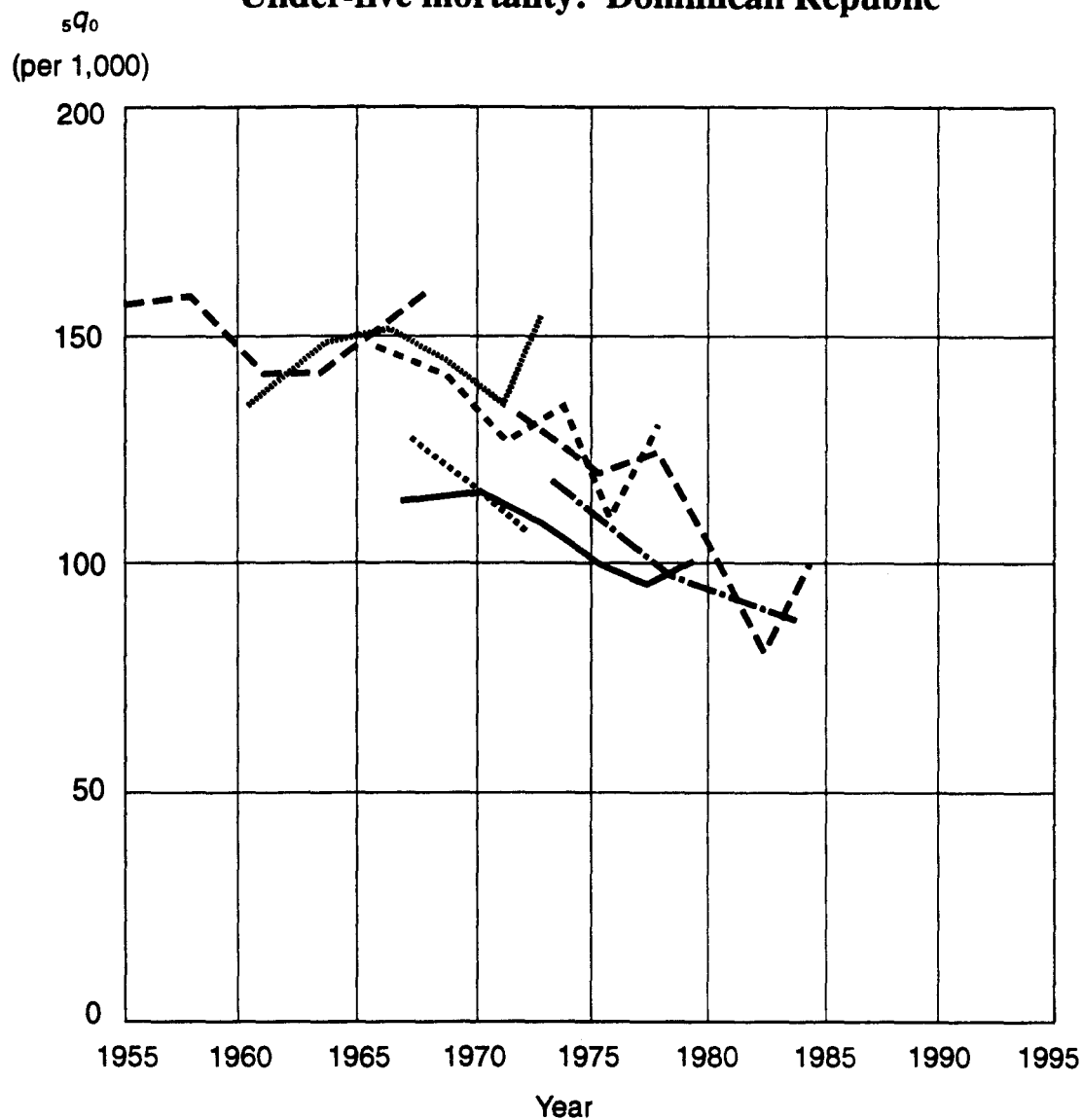
Source: Fred Arnold and Ann K. Blanc, *Fertility Levels and Trends, Demographic and Health Surveys Comparative Studies, No. 2* (Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1990), p. 8, table 3.1.

Infant mortality: Dominican Republic



- Census, 1970 (indirect)
- Encuesta Nacional de Fecundidad, 1975 (indirect)
- Encuesta Nacional de Fecundidad, 1980 (direct)
- Encuesta Nacional de Fecundidad, 1980 (indirect)
- Census, 1981 (indirect)
- Encuesta Demográfica y Salud, 1986 (direct)
- Encuesta Demográfica y Salud, 1986 (indirect)

Under-five mortality: Dominican Republic



- Census, 1970 (indirect)
- Encuesta Nacional de Fecundidad, 1975 (indirect)
- Encuesta Nacional de Fecundidad, 1980 (direct)
- Encuesta Nacional de Fecundidad, 1980 (indirect)
- - - Census, 1981 (indirect)
- Encuesta Demográfica y Salud, 1986 (direct)
- - - Encuesta Demográfica y Salud, 1986 (indirect)

ECUADOR

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1974, 1982 and 1990 censuses, although data from the 1990 census are not yet available. The 1974 data used here come from a sample of some 17 per cent of the population.

Sample surveys

Maternity histories were collected in 1979 by the Encuesta Nacional de Fecundidad (WFS), in 1987 by the Encuesta Demográfica y de Salud Familiar (DHS) and in 1989 by the Encuesta Demográfica y de Salud Materna e Infantil. Brass questions were included in the Encuesta Nacional de Salud Materno Infantil y Variables Demográficas of 1982.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	101	1970	77	1980	54
1961	96	1971	78	1981	51
1962	96	1972	82	1982	50
1963	95	1973	76	1983	50
1964	94	1974	70	1984	43
1965	93	1975	60	1985	40
1966	90	1976	65	1986	40
1967	87	1977	63	1987	37
1968	86	1978	57	1988	45
1969	91	1979	59		

Sources: Ecuador, *Anuario de estadísticas vitales (nacimientos y defunciones)*, 1985 and 1988 (Quito, Instituto Nacional de Estadística y Censos, 1986 and 1989), pp. 409 and 435, respectively.

CENSUS, 8 JUNE 1974
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.166	0.107	1973.5	120	176
20-24	1.218	0.126	1972.3	109	158
25-29	2.726	0.142	1970.4	108	156
30-34	4.147	0.156	1968.1	109	158
35-39	5.412	0.171	1965.6	111	161
40-44	6.191	0.194	1962.9	117	171
45-49	6.378	0.214	1959.9	118	173

Source: Ecuador, *III Censo de Población y II de Vivienda, 1974: resultados anticipados por muestreo* (Quito, Junta Nacional de Planificación, Oficina de los Censos Nacionales, 1975), pp. 42 and 46, tables 18 and 20.

ENCUESTA NACIONAL DE FECUNDIDAD, AUGUST-DECEMBER 1979
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1964-1969	98	153
1969-1974	85	135
1974-1979	76	118

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, rev. ed., World Fertility Survey Comparative Studies, No. 43 (Voorburg, International Statistical Institute, 1984), p. 73.

ENCUESTA NACIONAL DE FECUNDIDAD, AUGUST-DECEMBER 1979
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.17	0.059	1978.8	64	88
20-24	1.15	0.104	1977.5	91	129
25-29	2.49	0.116	1975.6	89	127
30-34	4.04	0.136	1973.3	96	137
35-39	5.46	0.145	1970.8	95	136
40-44	6.36	0.175	1968.1	106	153
45-49	6.78	0.193	1965.1	107	155

Source: *Encuesta Nacional de Fecundidad, Ecuador, 1979: informe general* (Quito, Ecuador, Instituto Nacional de Estadística y Censos; and Voorburg, Netherlands, International Statistical Institute, 1984), p. 154, table 6.12.

CENSUS, 28 NOVEMBER 1982
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.210	0.056	1981.7	56	75
20-24	1.134	0.080	1980.4	70	96
25-29	2.375	0.098	1978.5	76	106
30-34	3.575	0.114	1976.3	82	116
35-39	4.757	0.136	1973.9	90	129
40-44	5.739	0.154	1971.3	95	135
45-49	6.261	0.172	1968.4	96	138

Source: Ecuador, *IV Censo de Población, 1982, resultados definitivos: resumen nacional* (Quito, Instituto Nacional de Estadística y Censos, 1985), pp. 322-323, tables 51-52.

ENCUESTA NACIONAL DE SALUD MATERNO INFANTIL Y VARIABLES
DEMOGRÁFICAS, SEPTEMBER-NOVEMBER 1982
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.209	0.076	1981.7	80	112
20-24	1.254	0.086	1980.4	75	105
25-29	2.623	0.094	1978.5	73	101
30-34	3.833	0.104	1976.2	76	105
35-39	5.172	0.128	1973.7	85	120
40-44	6.262	0.132	1971.0	82	115
45-49	6.680	0.152	1968.1	86	121

Source: *Encuesta Nacional de Salud Materno Infantil y Variables Demográficas, Ecuador, 1982: informe final*, tomo II (Quito, Ministerio de Salud Pública, Instituto Nacional de Investigaciones Nutricionales y Médico Sociales, 1984), p. 60, table 4.3.

ENCUESTA DEMOGRÁFICA Y DE SALUD FAMILIAR, JANUARY-MARCH 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1972-1976	97	137
1977-1981	72	98
1982-1986*	58	82

Source: Ecuador: *Encuesta Demográfica y de Salud Familiar, 1987* (Quito, Centro de Estudios de Población y Paternidad Responsable and Instituto Nacional de Investigaciones Nutricionales y Médico Sociales; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 95, table 6.1.

* Including events occurring in 1987 up to the month preceding the date of the interview.

ENCUESTA DEMOGRÁFICA Y DE SALUD FAMILIAR, JANUARY-MARCH 1987
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.18	0.111	1985.9	111	162
20-24	1.03	0.058	1984.7	53	70
25-29	2.38	0.084	1983.0	67	92
30-34	3.47	0.112	1981.0	82	116
35-39	4.45	0.137	1978.8	92	132
40-44	5.43	0.129	1976.4	82	115
45-49	6.03	0.167	1973.4	96	137

Source: Ecuador: *Encuesta Demográfica y de Salud Familiar, 1987* (Quito, Centro de Estudios de Población y Paternidad Responsable and Instituto Nacional de Investigaciones Nutricionales y Médico Sociales; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 102, table 6.7.

ENCUESTA DEMOGRÁFICA Y DE SALUD MATERNA E INFANTIL, JULY-OCTOBER 1989
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1979-1984	43	62
1984-1989	37	48

Source: Ecuador: *Encuesta Demográfica y de Salud Materna e Infantil, 1989* (Quito, Centro de Estudios de Población y Paternidad Responsable and Ministerio de Salud Pública; and Atlanta, Georgia, United States Centers for Disease Control, 1990), p. 125, table 8.2.

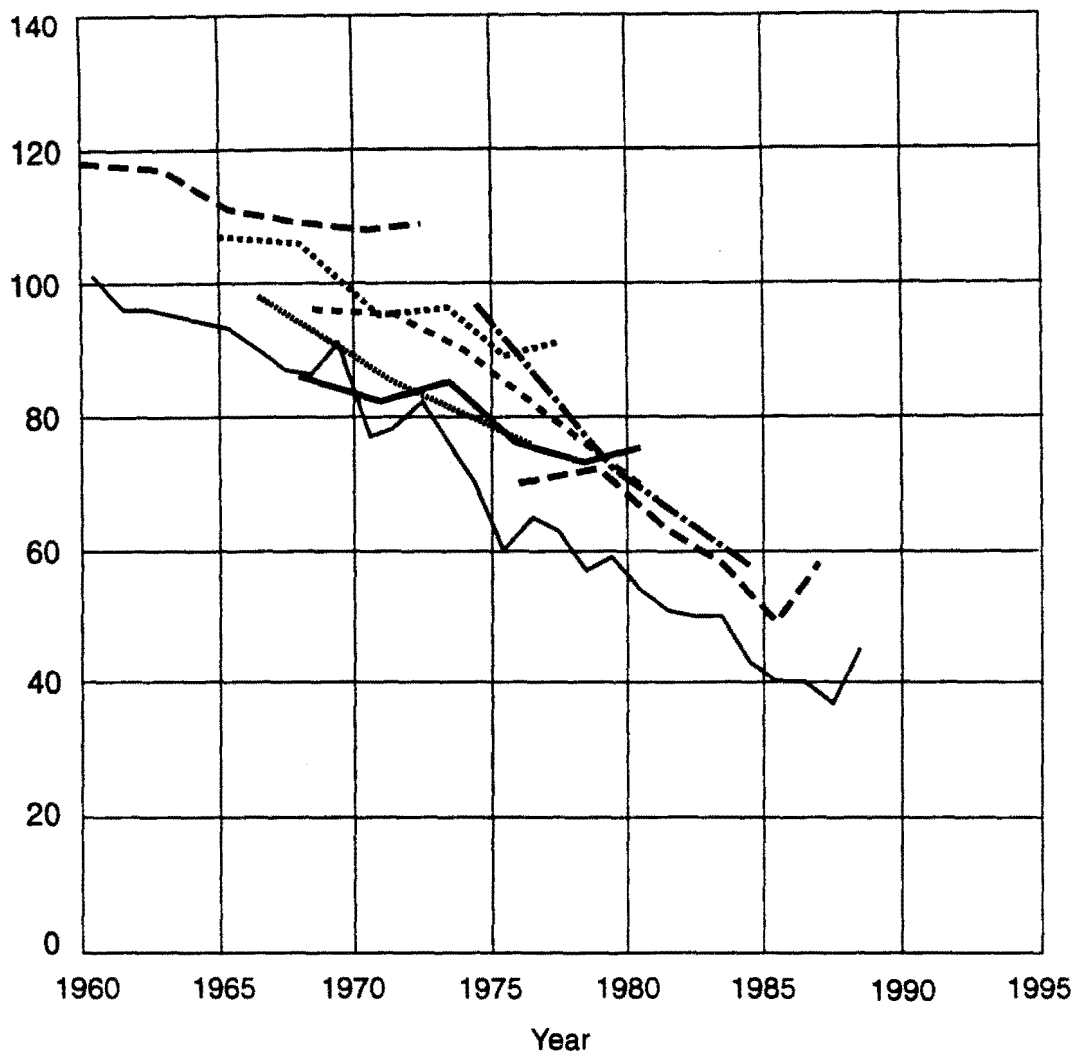
ENCUESTA DEMOGRÁFICA Y DE SALUD MATERNA E INFANTIL, JULY-OCTOBER 1989
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.19	0.053	1988.4	49	63
20-24	0.92	0.065	1987.1	58	77
25-29	2.06	0.058	1985.5	49	63
30-34	3.19	0.075	1983.6	58	77
35-39	4.17	0.089	1981.5	63	85
40-44	5.05	0.111	1979.1	72	99
45-49	5.93	0.118	1976.2	70	96

Source: Ecuador: *Encuesta Demográfica y de Salud Materna e Infantil, 1989* (Quito, Centro de Estudios de Población y Paternidad Responsable and Ministerio de Salud Pública; and Atlanta, Georgia, United States Centers for Disease Control, 1990), p. 123, table 8.1.

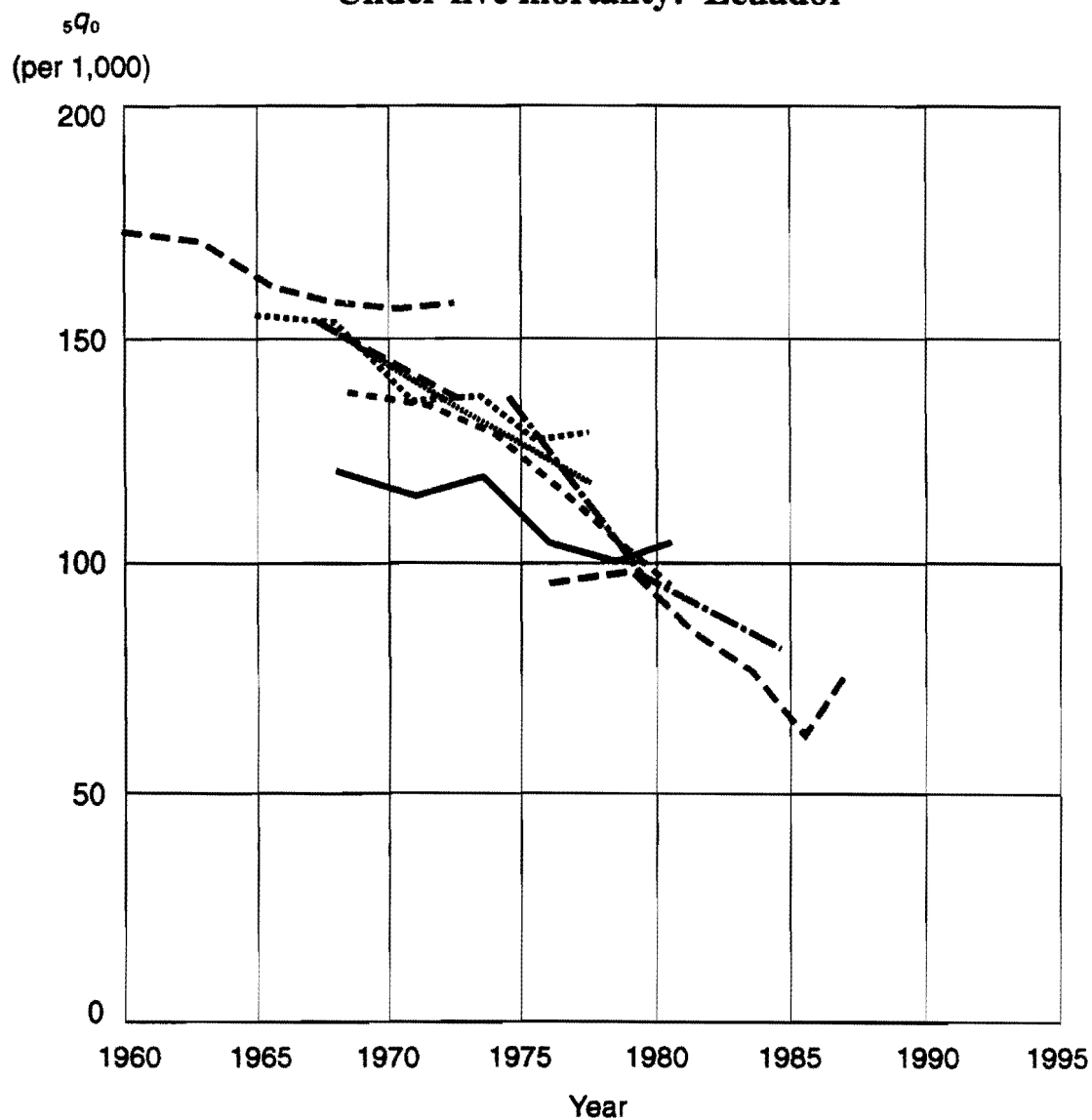
Infant mortality: Ecuador

‰
(per 1,000)



- Vital registration
- - Census, 1974 (indirect)
- Encuesta Nacional de Fecundidad, 1979 (direct)
- Encuesta Nacional de Fecundidad, 1979 (indirect)
- - - Census, 1982 (indirect)
- Encuesta Nacional de Salud Materno Infantil, 1982 (indirect)
- Encuesta Demográfica y de Salud Familiar, 1987 (direct)
- - - Encuesta Demográfica y de Salud Materna e Infantil, 1989 (indirect)

Under-five mortality: Ecuador



- Census, 1974 (indirect)
- Encuesta Nacional de Fecundidad, 1979 (direct)
- Encuesta Nacional de Fecundidad, 1979 (indirect)
- - - Census, 1982 (indirect)
- Encuesta Nacional de Salud Materno Infantil, 1982 (indirect)
- Encuesta Demográfica y de Salud Familiar, 1987 (direct)
- - - Encuesta Demográfica y de Salud Materna e Infantil, 1989 (indirect)

EGYPT

Vital registration

Registration of births and deaths is reported to be complete (representing at least 90 per cent of the events occurring each year). However, registration data clearly underestimate the infant mortality rate (Egypt, 1979; Bucht and El-Badry, 1984).

Censuses

Brass questions were included in the 1947, 1976 and 1986 censuses. Sex ratios among reported children ever born were high in the 1976 and 1986 censuses, indicating selective omission of female children.

Sample surveys

Maternity histories were collected by the Egyptian Fertility Survey of 1980 and the Egypt Demographic and Health Survey in 1988. Brass questions were included in the Egypt Contraceptive Prevalence Survey of 1984.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	109	1970	116	1980	76
1961	108	1971	103	1981	70
1962	134	1972	116	1982	70
1963	119	1973	98	1983	65
1964	117	1974	101	1984	62
1965	113	1975	89	1985	49
1966	127	1976	87	1986	47
1967	116	1977	85	1987	45
1968	131	1978	73		
1969	119	1979	76		

Sources: Infant and Child Mortality Rates in Egypt, 1980-87 (Cairo, Central Agency for Public Mobilisation and Statistics, 1989); and data provided to the United Nations Statistical Office.

CENSUS, 23 NOVEMBER 1976 (Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1970</i>
15-19	0.068	0.117	1976.0	134	216
20-24	0.782	0.132	1975.0	115	175
25-29	2.087	0.144	1973.3	108	163
30-34	3.323	0.153	1971.2	107	160
35-39	4.291	0.166	1968.8	110	165
40-44	4.625	0.187	1966.1	114	174
45-49	4.914	0.204	1962.9	115	177

Sources: Egypt, Population and Housing Census, 1976, vol. I, Total Republic; vol. II, Fertility and Internal Migration and Movement of Workers and Students, (Cairo, Central Agency for Public Mobilisation and Statistics, 1980), pp. 165-174, table 6; and data provided to the United Nations Statistical Office.

EGYPTIAN FERTILITY SURVEY, MAY-JUNE 1980
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1965-1970	141	243
1970-1975	146	238
1975-1980	132	191

Source: Egypt, Central Agency for Public Mobilisation and Statistics, *The Egyptian Fertility Survey, 1980*, vol. II, *Fertility and Family Planning* (Voorburg, Netherlands, International Statistical Institute, 1983), p. 52, table 5.3.

EGYPTIAN FERTILITY SURVEY, MAY-JUNE 1980
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.14	0.190	1979.6	220	327
20-24	1.17	0.181	1978.4	155	232
25-29	2.64	0.193	1976.5	142	213
30-34	4.44	0.217	1974.1	147	219
35-39	5.66	0.243	1971.5	153	230
40-44	6.32	0.270	1968.7	159	238
45-49	6.77	0.305	1965.8	167	250

Source: Egypt, Central Agency for Public Mobilisation and Statistics, *The Egyptian Fertility Survey, 1980*, vol. II, *Fertility and Family Planning* (Voorburg, Netherlands, International Statistical Institute, 1983), pp. 22, 33 and 50, tables 3.5, 4.3 and 5.1.

EGYPT CONTRACEPTIVE PREVALENCE SURVEY, OCTOBER-NOVEMBER 1984
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.172	0.163	1983.4	172	257
20-24	1.147	0.176	1982.2	150	224
25-29	2.755	0.182	1980.5	136	203
30-34	4.316	0.199	1978.5	138	205
35-39	5.481	0.223	1976.2	144	215
40-44	6.061	0.248	1973.7	149	223
45-49	6.579	0.288	1970.7	160	240

Source: Hussein A. A. Sayed, M. Nabil El-Khorazaty and Ann A. Way, *Fertility and Family Planning in Egypt, 1984* (Cairo, Egypt National Population Council; and Columbia, Maryland, Westinghouse Public Applied Systems, 1985).

CENSUS, 17-18 NOVEMBER 1986
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1985
15-19	0.069	0.108	1985.9	121	177
20-24	0.663	0.086	1984.9	80	112
25-29	1.971	0.081	1983.4	67	92
30-34	3.053	0.099	1981.6	75	104
35-39	3.939	0.097	1979.5	69	95
40-44	4.224	0.105	1977.1	69	95
45-49	4.480	0.119	1974.1	71	98

Source: Egypt, *Census of Population, Housing and Establishments, 1986*, vol. I, *Sample Results: Population Characteristics and Housing Conditions* (Cairo, Central Agency for Public Mobilisation and Statistics, 1989), tables 12, 19 and 35.

EGYPT DEMOGRAPHIC AND HEALTH SURVEY, OCTOBER 1988-JANUARY 1989
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1980	1985
1974-1978	124	203
1979-1983	120	167
1984-1988*	73	102

Source: Hussein Abdel-Aziz Sayed and others, *Egypt Demographic and Health Survey, 1988* (Cairo, Egypt National Population Council; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 128, table 8.3.

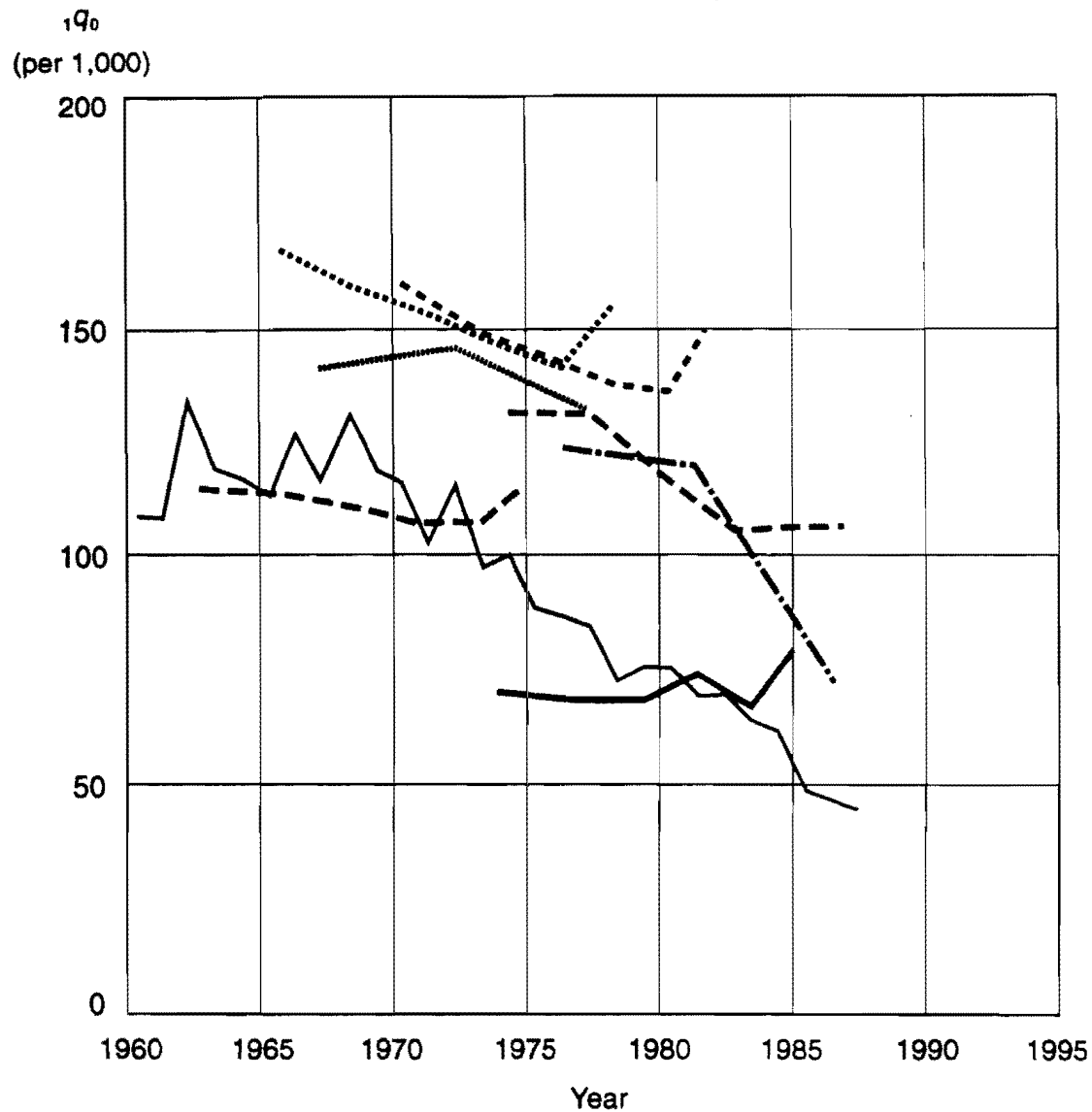
* Including events occurring in 1988 up to the month preceding the date of the interview.

EGYPT DEMOGRAPHIC AND HEALTH SURVEY, OCTOBER 1988-JANUARY 1989
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1985
15-19	0.10	0.090	1988.0	107	155
20-24	1.02	0.120	1986.9	107	155
25-29	2.49	0.140	1985.1	107	155
30-34	3.78	0.150	1982.8	106	153
35-39	5.17	0.180	1980.3	117	171
40-44	5.81	0.220	1977.6	131	195
45-49	6.14	0.240	1974.5	132	196

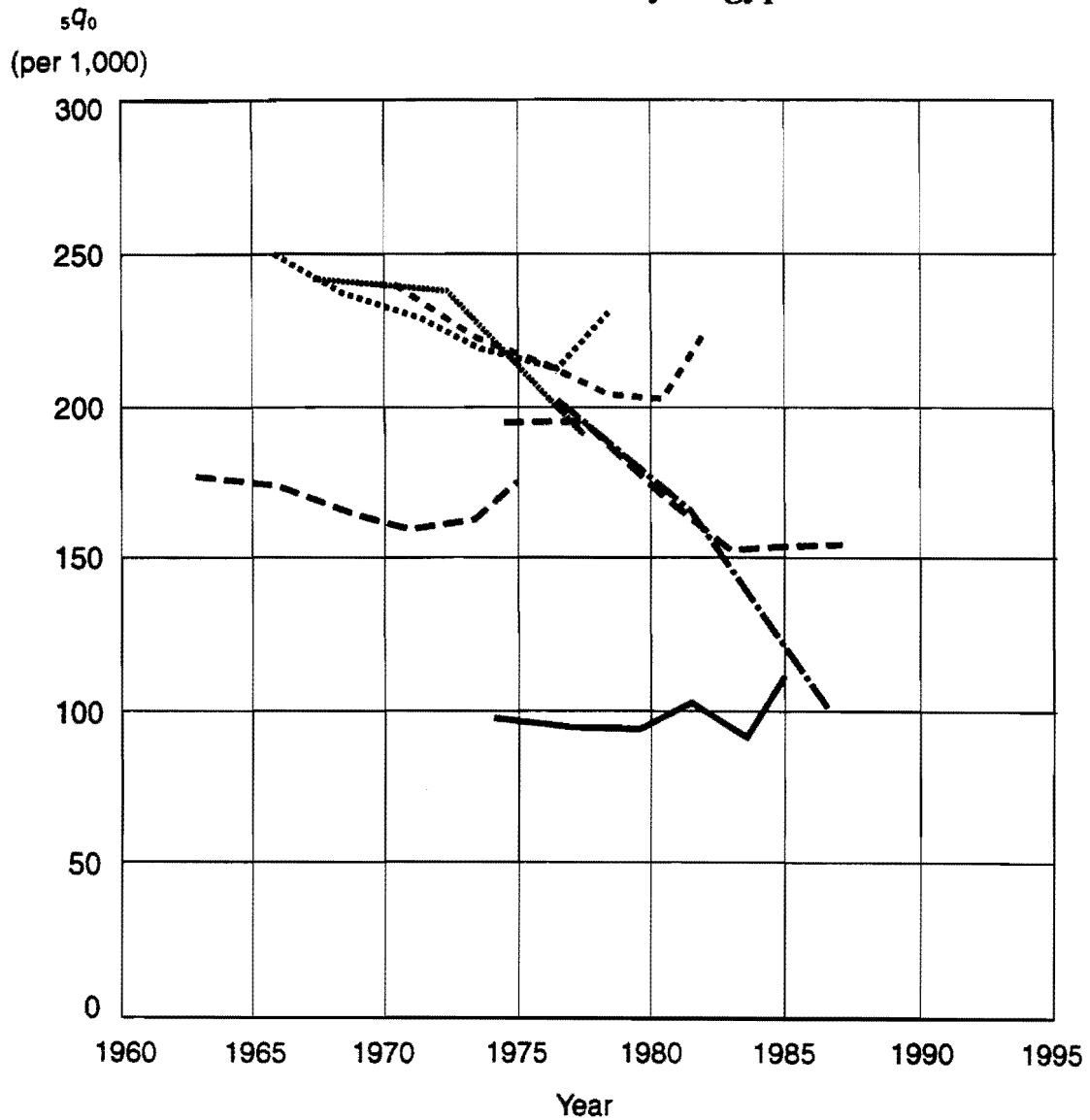
Source: Hussein Abdel-Aziz Sayed and others, *Egypt Demographic and Health Survey, 1988* (Cairo, Egypt National Population Council; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), pp. 19 and 126, tables 2.1 and 8.1.

Infant mortality: Egypt



- Vital registration
- - Census, 1976 (indirect)
- Egyptian Fertility Survey, 1980 (direct)
- Egyptian Fertility Survey, 1980 (indirect)
- - - Egypt Contraceptive Prevalence Survey, 1984 (indirect)
- Census, 1986 (indirect)
- Egypt Demographic and Health Survey, 1988 (direct)
- - - Egypt Demographic and Health Survey, 1988 (indirect)

Under-five mortality: Egypt



- Census, 1976 (indirect)
- Egyptian Fertility Survey, 1980 (direct)
- Egyptian Fertility Survey, 1980 (indirect)
- Egypt Contraceptive Prevalence Survey, 1984 (indirect)
- Census, 1986 (indirect)
- Egypt Demographic and Health Survey, 1988 (direct)
- Egypt Demographic and Health Survey, 1988 (indirect)

EL SALVADOR

Vital registration

Completeness of birth and death registration is not reported. Omission of births and particularly infant deaths appears to be substantial (Behm and Barquero, 1990).

Censuses

Brass questions were included in the 1971 census.

Sample surveys

Maternity histories were collected in 1973 by the Encuesta Nacional de Fecundidad, and in 1985 and 1988 by the Encuesta Nacional de Salud Familiar (DHS). However, direct child mortality estimates from the 1973 survey and Brass-type data from the 1988 survey are not available. Brass questions were also included in the Encuesta Nacional de Fecundidad y Planificación Familiar of 1975 and in the Encuesta Nacional de Fecundidad, Planificación Familiar y Comunicación of 1978, but no data are available from these surveys.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	76	1969	63	1978	51
1961	70	1970	67	1979	50
1962	71	1971	53	1980	42
1963	68	1972	58	1981	44
1964	65	1973	59	1982	42
1965	71	1974	53	1983	44
1966	62	1975	58	1984	35
1967	63	1976	55	1985	32
1968	59	1977	60	1986	29

Sources: El Salvador, *Indicadores económicos y sociales: enero-diciembre 1985* (San Salvador, Ministerio de Planificación, Dirección General de Coordinación, n.d.), p. 5; and Hugo Behm and Jorge Barquero, *La mortalidad en la niñez en Centroamérica, Panamá y Béisce: El Salvador, 1980-1986* (San José, Costa Rica, Instituto de Nutrición de Centro América y Panamá; UNICEF; and Centro Latinoamericano de Demografía, 1990), p. 3, table 1.

CENSUS, 28 JUNE 1971
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.242	0.128	1970.4	137	203
20-24	1.487	0.147	1969.1	123	181
25-29	3.117	0.153	1967.2	114	166
30-34	4.501	0.178	1964.9	122	179
35-39	5.651	0.206	1962.3	131	193
40-44	6.259	0.239	1959.6	141	210
45-49	6.367	0.265	1956.7	144	215

Source: *Encuesta Nacional de Fecundidad de El Salvador, 1973: aspectos metodológicos para la estimación de la fecundidad y la mortalidad infantil* (San Salvador, El Salvador, Asociación Demográfica Salvadoreña; New York, The Population Council; and Santiago, Chile, Centro Latinoamericano de Demografía, 1975), p. 15, table 5.

ENCUESTA NACIONAL DE FECUNDIDAD, MAY-JULY 1973
(Indirect estimates, West Model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.318	0.107	1972.2	101	145
20-24	1.490	0.133	1970.8	109	158
25-29	3.028	0.140	1969.0	105	151
30-34	4.581	0.150	1966.8	105	152
35-39	5.447	0.182	1964.5	118	173
40-44	6.214	0.195	1962.0	118	173
45-49	6.215	0.206	1959.1	114	166

Source: *Encuesta Nacional de Fecundidad de El Salvador, 1973: aspectos metodológicos para la estimación de la fecundidad y la mortalidad infantil* (San Salvador, El Salvador, Asociación Demográfica Salvadoreña; New York, The Population Council; and Santiago, Chile, Centro Latinoamericano de Demografía, 1975), p. 15, table 5.

ENCUESTA NACIONAL DE SALUD FAMILIAR, MAY-JULY 1985
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1981-1985	71	98

Source: El Salvador, *Encuesta Nacional de Salud Familiar, FESAL-85* (San Salvador, Asociación Demográfica Salvadoreña; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1987), p. 100.

ENCUESTA NACIONAL DE SALUD FAMILIAR, MAY-JULY 1985
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.30	0.100	1984.1	90	128
20-24	1.33	0.098	1982.8	82	115
25-29	2.75	0.105	1981.0	81	114
30-34	3.64	0.126	1979.0	90	129
35-39	4.85	0.155	1976.8	102	148
40-44	5.77	0.206	1974.3	125	184
45-49	6.50	0.200	1971.5	112	163

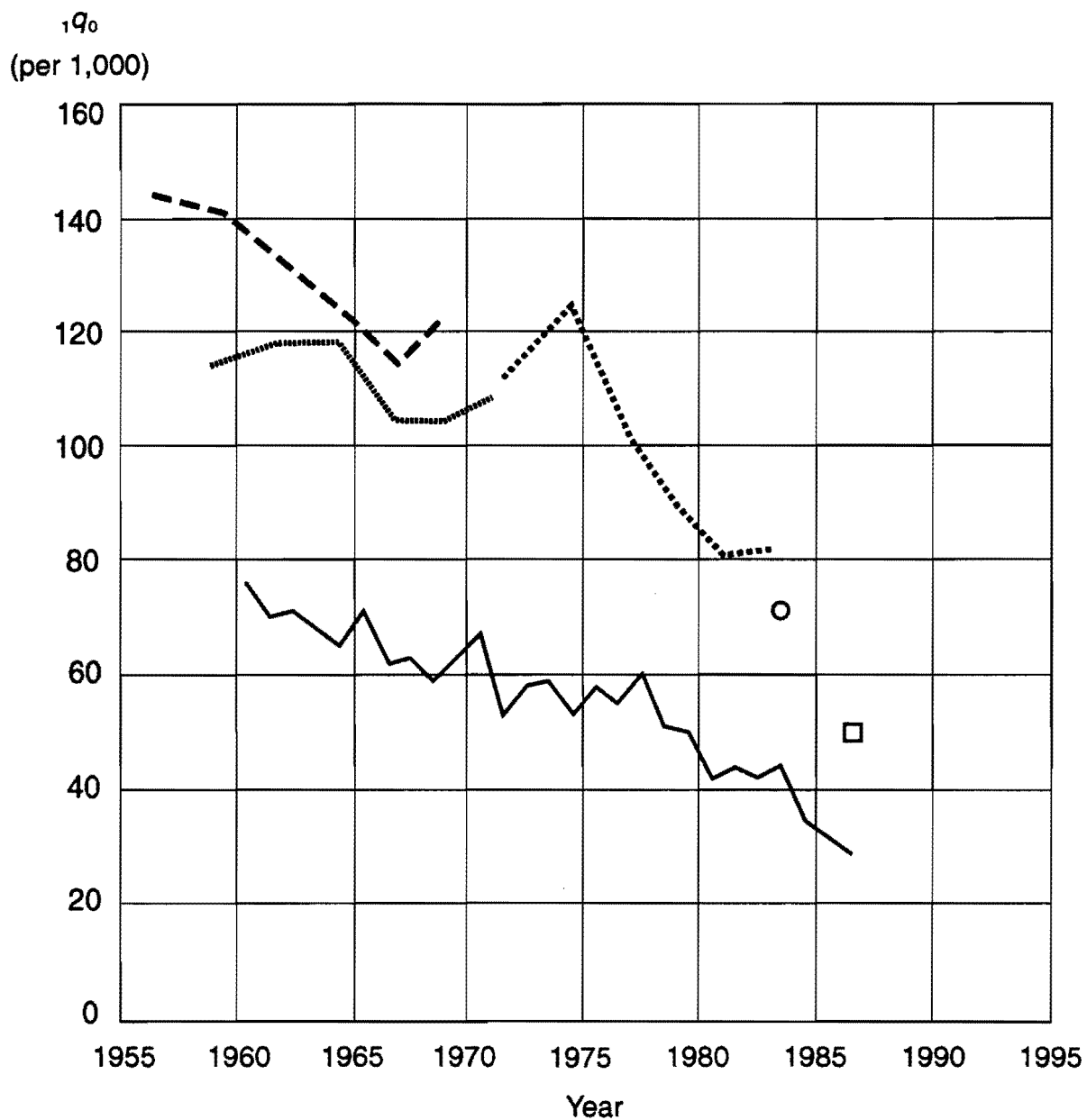
Source: El Salvador, *Encuesta Nacional de Salud Familiar, FESAL-85* (San Salvador, Asociación Demográfica Salvadoreña; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1987), p. 105, table 6.3.

ENCUESTA NACIONAL DE SALUD FAMILIAR, MAY-JULY 1988
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1980
1984-1988	50	66

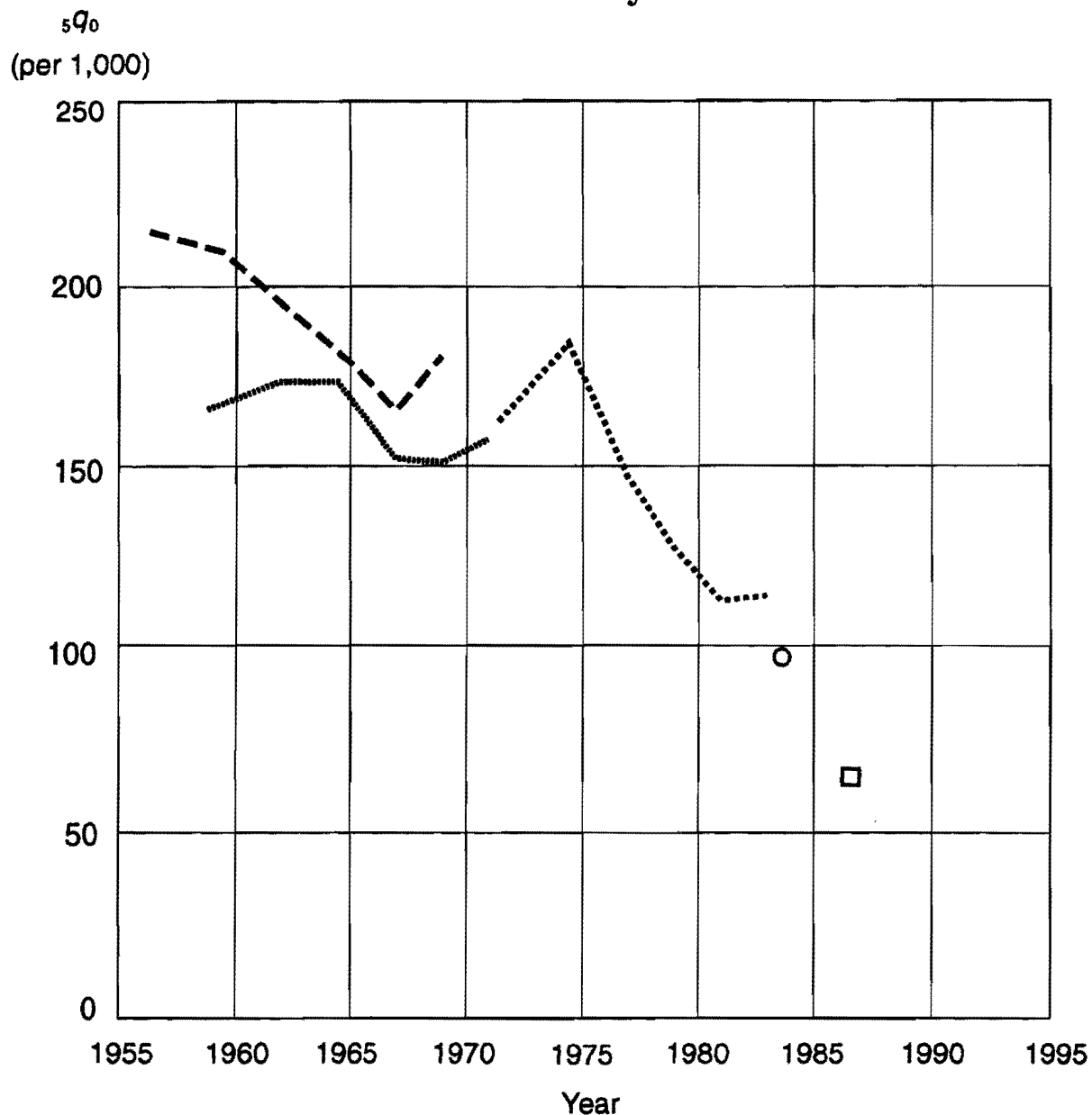
Source: El Salvador, *Encuesta Nacional de Salud Familiar, FESAL-88* (San Salvador, Asociación Demográfica Salvadoreña; and Atlanta, Georgia, United States Centers for Disease Control, 1989), p. 161, table 13.1.

Infant mortality: El Salvador



- Vital registration
- - - Census, 1971 (indirect)
- Encuesta Nacional de Fecundidad, 1973 (indirect)
- Encuesta Nacional de Salud Familiar, 1985 (direct)
- Encuesta Nacional de Salud Familiar, 1985 (indirect)
- Encuesta Nacional de Salud Familiar, 1988 (direct)

Under-five mortality: El Salvador



- — Census, 1971 (indirect)
- Encuesta Nacional de Fecundidad, 1973 (indirect)
- Encuesta Nacional de Salud Familiar, 1985 (direct)
- Encuesta Nacional de Salud Familiar, 1985 (indirect)
- Encuesta Nacional de Salud Familiar, 1988 (direct)

GHANA

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the sample post-enumeration surveys, or supplementary inquiries, that followed the main censuses of 1948, 1960 and 1970; the supplementary inquiry to the 1970 census was not held until 1971. The mortality estimates derived from the 1948 and 1960 censuses have not been included here, but in general they agree well with those from 1971 and show that mortality had been declining since the 1930s.

Sample surveys

Maternity histories were included in the Ghana Fertility Survey of 1979-1980 and the Ghana Demographic and Health Survey of 1988.

SUPPLEMENTARY INQUIRY OF GHANA, AUGUST-SEPTEMBER 1971 (Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.263	0.121	1970.6	126	212
20-24	1.536	0.149	1969.3	115	192
25-29	3.061	0.183	1967.4	118	198
30-34	4.609	0.214	1965.1	124	208
35-39	5.609	0.232	1962.6	123	207
40-44	6.285	0.259	1959.9	127	214
45-49	6.420	0.289	1957.0	130	220

Source: K. V. Ramachandran, "Fertility and mortality levels, patterns and trends in some anglophone African Countries", paper presented at the Economic Commission for Africa Expert Group Meeting on Fertility and Mortality Levels, Patterns and Trends in Africa and their Policy Implications, Monrovia, Liberia, 26 November-1 December 1979 (E/CN.14/POP/INF/239), pp. 6-7, tables 4-5.

GHANA FERTILITY SURVEY, FEBRUARY 1979-MARCH 1980 (Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1964-1969	89	160
1969-1974	75	132
1974-1979	74	127

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, rev. ed., World Fertility Survey Comparative Studies, No. 43 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 49.

GHANA FERTILITY SURVEY, FEBRUARY 1979-MARCH 1980
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.24	0.103	1978.6	106	176
20-24	1.37	0.119	1977.3	93	151
25-29	2.69	0.117	1975.3	79	125
30-34	4.04	0.132	1973.1	80	128
35-39	5.36	0.138	1970.5	78	123
40-44	6.12	0.167	1967.8	85	137
45-49	6.79	0.200	1964.9	92	149

Source: John Y. Owusu, *Evaluation of the Ghana Fertility Survey, 1979-80*, World Fertility Survey Scientific Reports, No. 69 (Voorburg, Netherlands, International Statistical Institute, 1984), pp. 24 and 30, tables 13 and 21.

GHANA DEMOGRAPHIC AND HEALTH SURVEY, FEBRUARY-MAY 1988
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1973-1977	100	187
1978-1982	86	152
1983-1987*	77	155

Source: *Ghana Demographic and Health Survey, 1988* (Accra, Ghana Statistical Service; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 63, table 6.3.

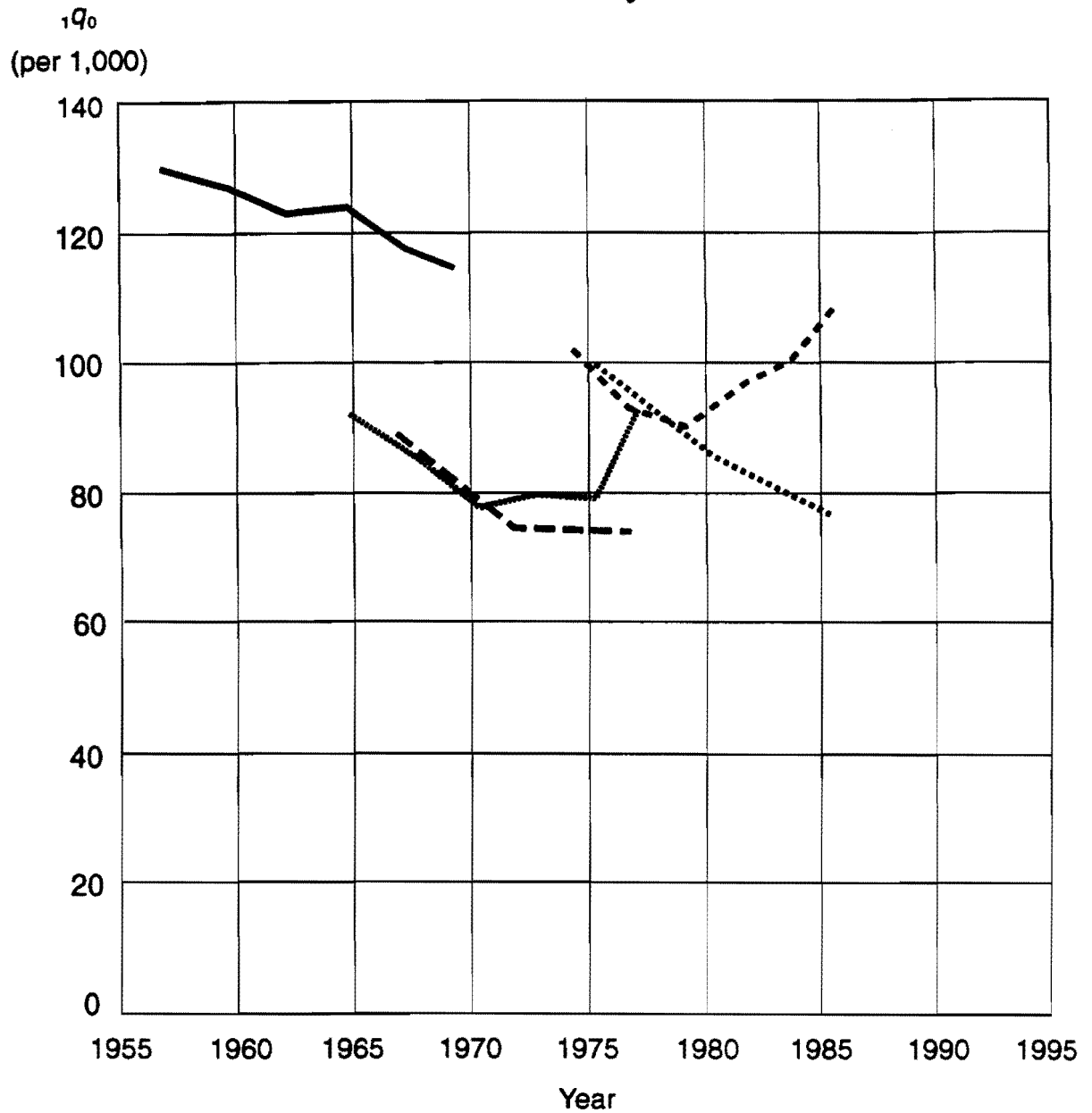
* Including events occurring in 1988 up to the month preceding the date of interview.

GHANA DEMOGRAPHIC AND HEALTH SURVEY, FEBRUARY-MAY 1988
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.22	0.07	1987.1	70	109
20-24	1.25	0.14	1985.8	109	181
25-29	2.65	0.15	1984.1	100	164
30-34	4.18	0.16	1982.0	97	159
35-39	5.47	0.16	1979.7	90	146
40-44	6.58	0.18	1977.1	93	151
45-49	7.25	0.22	1974.3	102	167

Source: *Ghana Demographic and Health Survey, 1988* (Accra, Ghana Statistical Service; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 67, table 6.6.

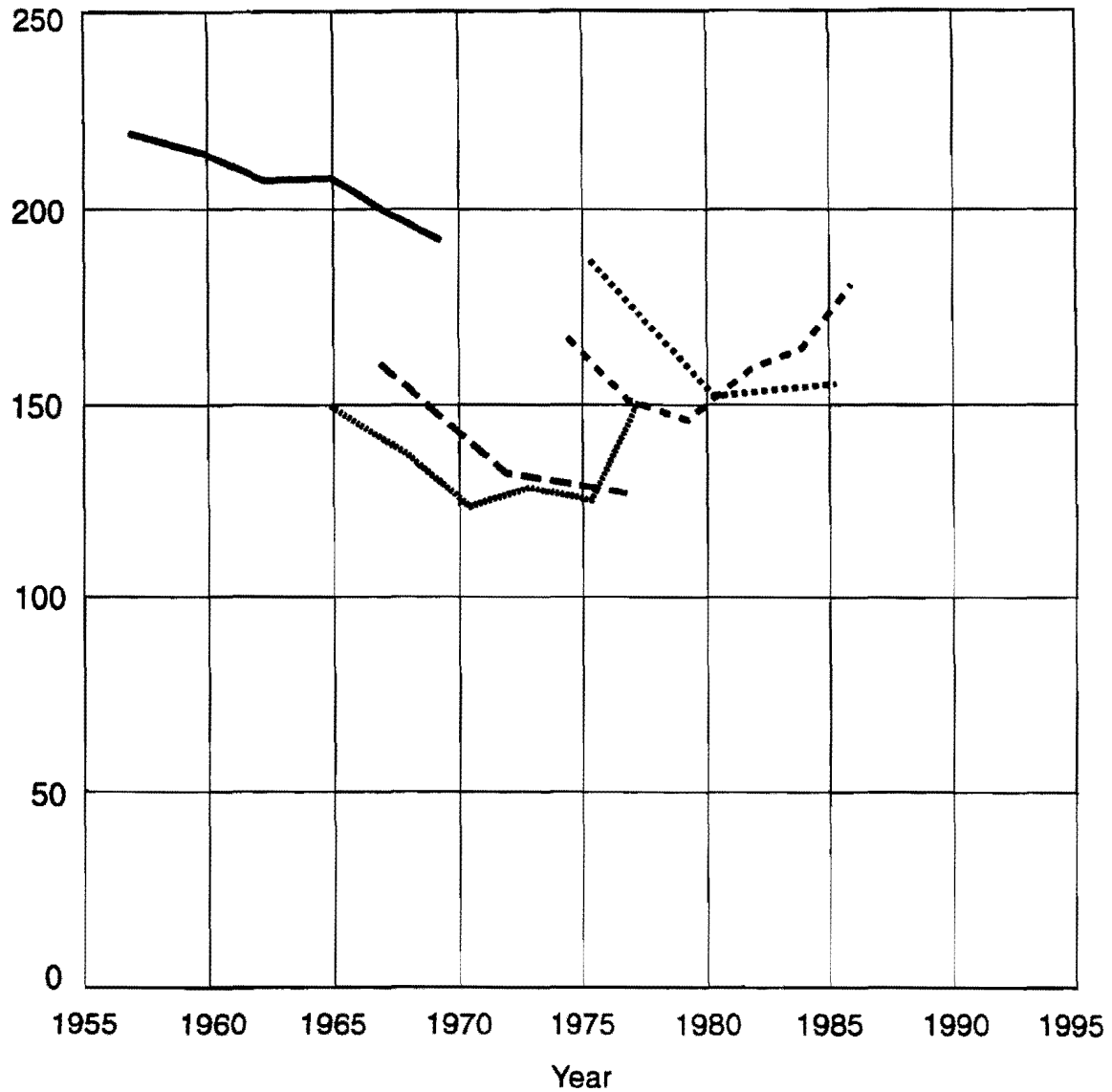
Infant mortality: Ghana



- Supplementary Inquiry of Ghana, 1971 (indirect)
- Ghana Fertility Survey, 1980 (direct)
- Ghana Fertility Survey, 1980 (indirect)
- Ghana Demographic and Health Survey, 1988 (direct)
- - - Ghana Demographic and Health Survey, 1988 (indirect)

Under-five mortality: Ghana

$5q_0$
(per 1,000)



- Supplementary Inquiry of Ghana, 1971 (indirect)
- - Ghana Fertility Survey, 1980 (direct)
- Ghana Fertility Survey, 1980 (indirect)
- Ghana Demographic and Health Survey, 1988 (direct)
- - - Ghana Demographic and Health Survey, 1988 (indirect)

GUATEMALA

Vital registration

Registration of births and deaths is reported to be complete, although the infant mortality rate appears to be biased downwards by omission (Behm and Vargas, 1978).

Censuses

Brass questions were included in the 1973 census (for a 5 per cent sample of households) and in the 1981 census.

Sample surveys

Maternity histories were collected in 1987 by the Encuesta Nacional de Salud Materno Infantil (DHS). Brass questions were included in the Encuesta Nacional de Fecundidad, Planificación Familiar y Comunicación in 1978 and in the Encuesta Nacional Socio-demográfica in 1986-1987 and 1989.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	92	1970	87	1980	66
1961	85	1971	82	1981	64
1962	91	1972	80	1982	64
1963	93	1973	80	1983	66
1964	88	1974	75	1984	55
1965	93	1975	81	1985	56
1966	89	1976	76	1986	57
1967	87	1977	70	1987	56
1968	92	1978	68	1988	51
1969	91	1979	70	1989	45

Sources: Guatemala, *Anuario Estadístico*, 1976 and 1978 (Guatemala, Ministerio de Economía, Dirección General de Estadística, 1978 and 1980), p. 98, table II-27; and p. 116, table II-28, respectively; *Demographic Yearbook*, 1982 (United Nations publication, Sales No. E/F.83.XIII.1), p. 315, table 14; and Hugo Behm and Jorge Barquero, *La mortalidad en la niñez en Centroamérica, Panamá y Belice: Guatemala, 1980-1989* (San José, Instituto de Nutrición de Centro América y Panamá; United Nations Children's Fund; and Centro Latinoamericano de Demografía, 1990), p. 4, table 1.

CENSUS, 26 MARCH-7 APRIL 1973
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.307	0.103	1972.0	102	148
20-24	1.564	0.142	1970.7	117	171
25-29	3.099	0.172	1968.7	125	185
30-34	4.494	0.187	1966.4	127	188

Sources: Guatemala, *VIII Censo de Población: República, cifras definitivas*, Series III, vol. I (Guatemala, Ministerio de Economía, Dirección General de Estadística, 1975), p. 249, table 29; and Hugo Behm and Ernesto Vargas, *La mortalidad en los primeros años de vida en países de América Latina: Guatemala, 1968-1969* (San José, Centro Latinoamericano de Demografía, 1978), p. 50, table 1A.

ENCUESTA NACIONAL DE FECUNDIDAD, PLANIFICACIÓN FAMILIAR Y
COMUNICACIÓN, SEPTEMBER 1977-AUGUST 1978
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.380	0.110	1976.8	102	147
20-24	1.660	0.110	1975.4	90	128
25-29	3.160	0.150	1973.4	110	160
30-34	4.480	0.150	1971.2	104	150
35-39	5.640	0.190	1968.8	121	178
40-44	6.250	0.220	1966.2	130	193
45-49	6.430	0.230	1963.3	126	185

Source: *Encuesta Nacional de Fecundidad, Planificación Familiar y Comunicación de Guatemala, 1978: Primera parte, fecundidad y planificación familiar* (Guatemala, Asociación Pro-Bienestar de la Familia, 1979), pp. 39-40, tables 7-8.

CENSUS, 26 MARCH 1981
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.276	0.114	1980.1	117	171
20-24	1.481	0.114	1978.7	96	137
25-29	2.883	0.129	1976.7	96	138
30-34	4.120	0.148	1974.3	102	147
35-39	5.200	0.168	1971.7	108	157
40-44	5.872	0.191	1969.0	114	166
45-49	6.160	0.214	1966.0	117	171

Source: Guatemala, *Censos Nacionales de 1981: IX Censo de Población*, (Guatemala, Instituto Nacional de Estadística, 1984), pp. 219-222 and 246-249, tables 27 and 30.

ENCUESTA NACIONAL SOCIO-DEMOGRÁFICA, OCTOBER 1986-AUGUST 1987
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.242	0.097	1986.1	100	144
20-24	1.398	0.085	1984.8	74	103
25-29	3.009	0.114	1983.0	88	124
30-34	4.256	0.133	1980.8	94	135
35-39	5.412	0.170	1978.4	111	162
40-44	6.239	0.199	1975.8	120	176
45-49	6.586	0.228	1972.8	125	185

Source: Guatemala, *Encuesta Nacional Socio-Demográfica, 1986-1987*, vol. I, *Demografía: total república* (Guatemala, Instituto Nacional de Estadística, 1987), p. 56, table 16.

ENCUESTA NACIONAL DE SALUD MATERNO INFANTIL, SEPTEMBER-DECEMBER 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1980	1990
1972-1976	92	150
1977-1981	86	136
1982-1987	73	110

Source: *Encuesta Nacional de Salud Materno Infantil, 1987* (Guatemala, Ministerio de Salud Pública y Asistencia Social, Instituto de Nutrición de Centro América y Panamá; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1989), p. 7, table 2.1.

ENCUESTA NACIONAL DE SALUD MATERNO INFANTIL, SEPTEMBER-DECEMBER 1987
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.260	0.077	1986.8	80	113
20-24	1.480	0.095	1985.4	81	114
25-29	3.000	0.127	1983.5	95	136
30-34	4.320	0.132	1981.2	93	132
35-39	5.210	0.148	1978.6	96	138
40-44	5.860	0.155	1975.9	95	135

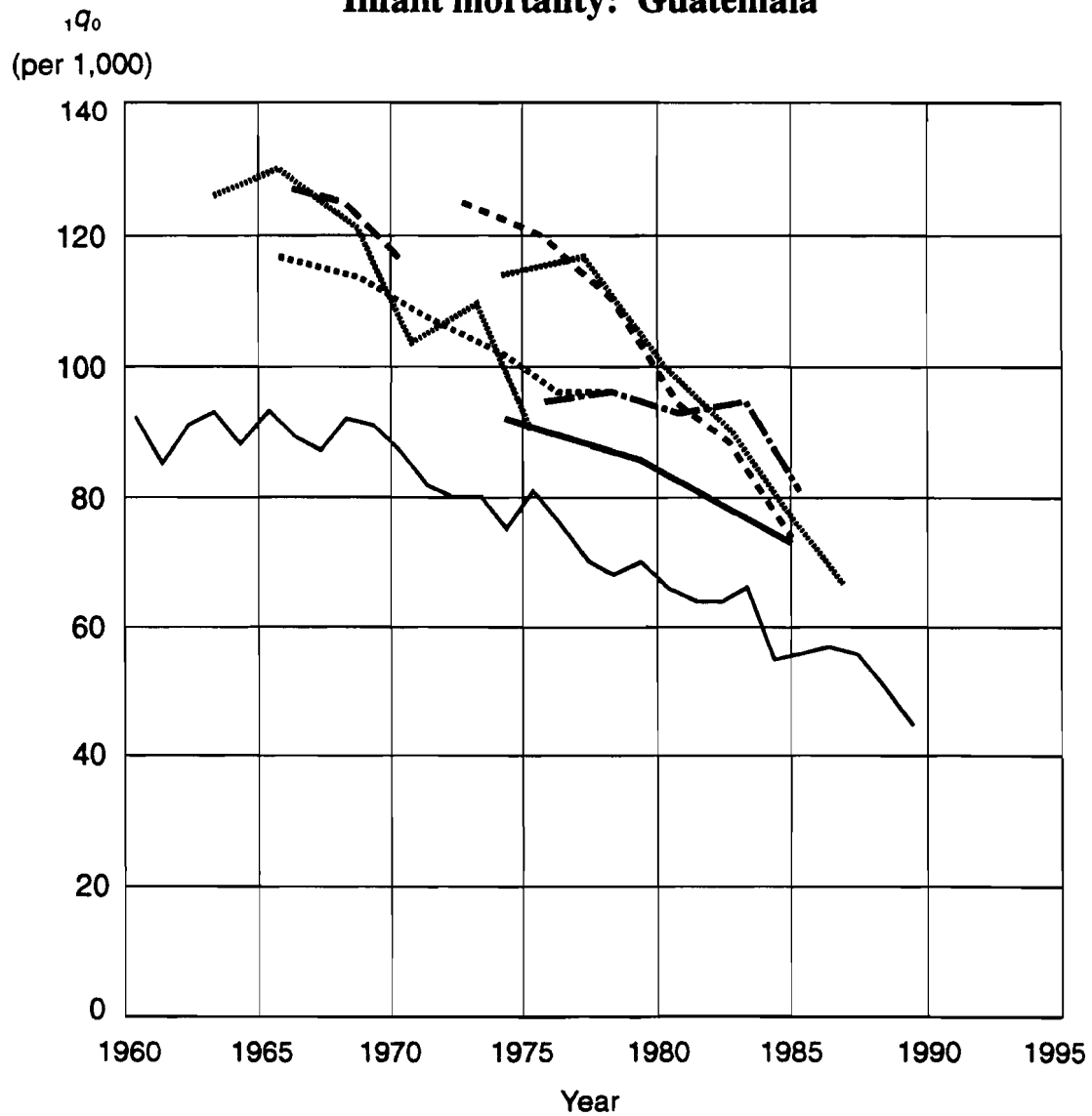
Source: *Encuesta Nacional de Salud Materno Infantil, 1987* (Guatemala, Ministerio de Salud Pública y Asistencia Social, Instituto de Nutrición de Centro América y Panamá; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1989), p. 11, table 2.4.

ENCUESTA NACIONAL SOCIO-DEMOGRÁFICA, APRIL-JULY 1989
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.219	0.075	1988.4	81	114
20-24	1.383	0.075	1987.1	67	91
25-29	2.930	0.099	1985.2	77	107
30-34	4.168	0.127	1982.9	90	128
35-39	5.469	0.153	1980.4	100	144
40-44	6.109	0.195	1977.7	117	171
45-49	6.543	0.208	1974.7	114	167

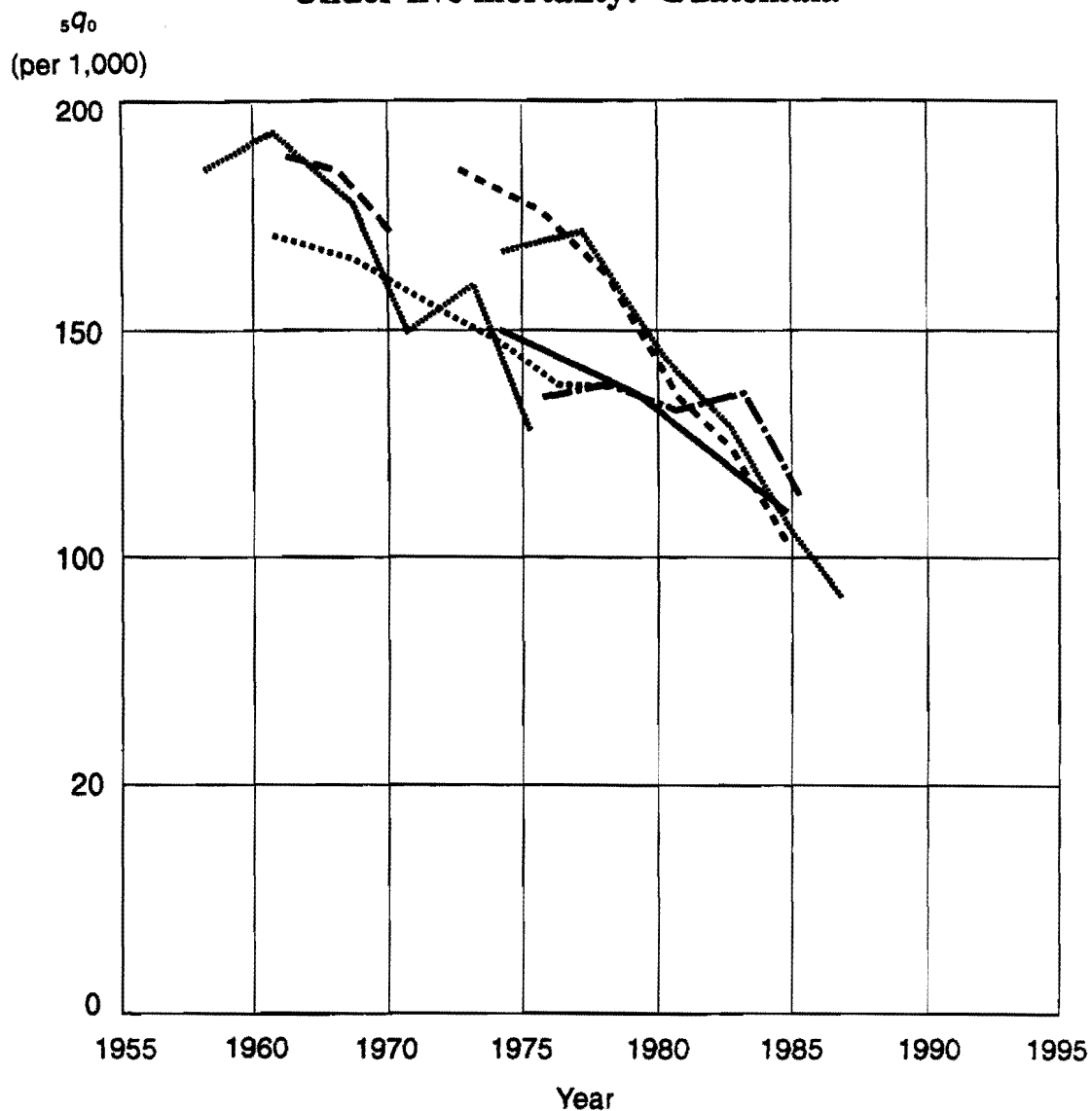
Source: Guatemala, *Encuesta Nacional Socio-demográfica, 1989*, vol. I, *Demografía: total república* (Guatemala, Instituto Nacional de Estadística, 1990), p. 65, table 1.

Infant mortality: Guatemala



- Vital registration
- - Census, 1973 (indirect)
- Encuesta Nacional de Fecundidad, 1978 (indirect)
- Census, 1981 (indirect)
- - - Encuesta Nacional Socio-demográfica, 1987 (indirect)
- Encuesta Nacional de Salud Materno Infantil, 1987 (direct)
- ..— Encuesta Nacional de Salud Materno Infantil, 1987 (indirect)
- Encuesta Nacional Socio-demográfica, 1989 (indirect)

Under-five mortality: Guatemala



- Census, 1973 (Indirect)
- Encuesta Nacional de Fecundidad, 1978 (indirect)
- Census, 1981 (Indirect)
- Encuesta Nacional Socio-demográfica, 1987 (indirect)
- Encuesta Nacional de Salud Materno Infantil, 1987 (direct)
- Encuesta Nacional de Salud Materno Infantil, 1987 (indirect)
- Encuesta Nacional Socio-demográfica, 1989 (indirect)

HAITI

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1982 census. The 1971 census recorded births and deaths by sex and age in the prior year, but the resulting mortality estimates are implausibly low (Mellon, Torres and Chackiel, 1976; Hobcraft, 1978).

Sample surveys

Maternity histories were collected in 1977 by the Enquête haïtienne sur la fécondité (WFS), and truncated maternity histories covering the preceding five years were collected in 1987 by the Enquête mortalité, morbidité et utilisation des services. Brass questions were included in the Enquête haïtienne sur la prévalence de la contraception of 1983. A multi-round survey using the 1971 census as the first round was conducted from 1971 to 1975, the second round was held some 18 months after the census and the third some six months later (a fourth round was held in 1975, but no data are available from it). Only measures of infant mortality are available from the multi-round survey.

CENSUS, 31 AUGUST 1971
(Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>190</i>	<i>190</i>
1970-1971	65	104

Source: Roger Mellon, Luis Torres and Juan Chackiel, "Informe de la Misión conjunta CEPAL/CELADE a Haití del 3 al 12 de marzo de 1976", Santiago, Chile, Centro Latinoamericano de Demografía, p. 10, unpublished.

ENQUÊTE DÉMOGRAPHIQUE À PASSAGES RÉPÉTÉS, AUGUST 1971-NOVEMBER 1973
(Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>
	<i>190</i>
1972	59
1973	83

Source: Roger Mellon, Luis Torres and Juan Chackiel, "Informe de la Misión conjunta CEPAL/CELADE a Haití del 3 al 12 de marzo de 1976", Santiago, Chile, Centro Latinoamericano de Demografía, p. 10, unpublished.

ENQUÊTE HAÏTIENNE SUR LA FÉCONDITÉ, JULY-SEPTEMBER 1977
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1962-1966	150	243
1967-1971	147	221
1972-1976	123	191

Source: J. A. Rousseau, *La mortalité infantile et juvénile en Haïti*, World Fertility Survey Scientific Reports, No. 82 (Voorburg, Netherlands, International Statistical Institute, 1985), p. 9, table 2.

ENQUÊTE HAÏTIENNE SUR LA FÉCONDITÉ, JULY-SEPTEMBER 1977
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.13	0.231	1976.4	228	338
20-24	0.78	0.179	1975.3	152	228
25-29	2.02	0.198	1973.8	150	224
30-34	3.39	0.186	1972.0	131	194
35-39	4.51	0.246	1970.0	162	242
40-44	5.52	0.236	1967.7	144	216
45-49	5.87	0.249	1964.7	141	210

Source: George Bicego and others, "Trends, age patterns and differentials in childhood mortality in Haiti (1960-1987)", *Population Studies* (London), vol. 45, No. 2 (July 1991), p. 242, table 3.

CENSUS, 30 AUGUST 1982
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.108	0.166	1981.6	180	270
20-24	0.842	0.151	1980.5	132	195
25-29	2.175	0.184	1978.9	140	208
30-34	3.491	0.197	1976.9	137	204
35-39	4.539	0.237	1974.7	153	230
40-44	5.348	0.258	1972.2	157	234
45-49	5.562	0.280	1969.2	157	234

Source: Haïti, *Résultats anticipés du recensement général (échantillon 2.5% extrapolé)* (Port-au-Prince, Ministère du plan, Institut haïtien de statistiques et d'information, n.d.), pp. 9, 175 and 181, tables 1.2, 4.1A and 4.2.

ENQUÊTE HAÏTIENNE SUR LA PRÉVALENCE DE LA CONTRACEPTION, 1983
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.14	0.143	1982.3	149	223
20-24	0.92	0.130	1981.2	113	164
25-29	2.25	0.240	1979.5	180	269
30-34	3.62	0.180	1977.6	126	185
35-39	4.78	0.205	1975.4	133	198
40-44	5.43	0.249	1972.9	150	225
45-49	6.17	0.266	1969.9	148	222

Source: George Bicego and others, "Trends, age patterns and differentials in childhood mortality in Haiti (1960-1987)", *Population Studies* (London), vol. 45, No. 2 (July 1991), p. 242, table 3.

ENQUÊTE MORTALITÉ, MORBIDITÉ ET UTILISATION DES SERVICES, MAY-SEPTEMBER 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1980
1982	115	..
1983	112	..
1984	106	..
1985	98	..
1986	82	..
1982-1987	101	151

Source: Michel Cayemittes, Anouch Chahnazarian and others, *Survie et santé de l'enfant en Haïti: résultats de l'enquête mortalité, morbidité et utilisation des services, 1987* (Port-au-Prince, Ministère de la santé publique et de la population, Institut haïtien de l'enfance; and The Johns Hopkins University, 1989), pp. 55 and 59, tables 6.4 and 6.6.

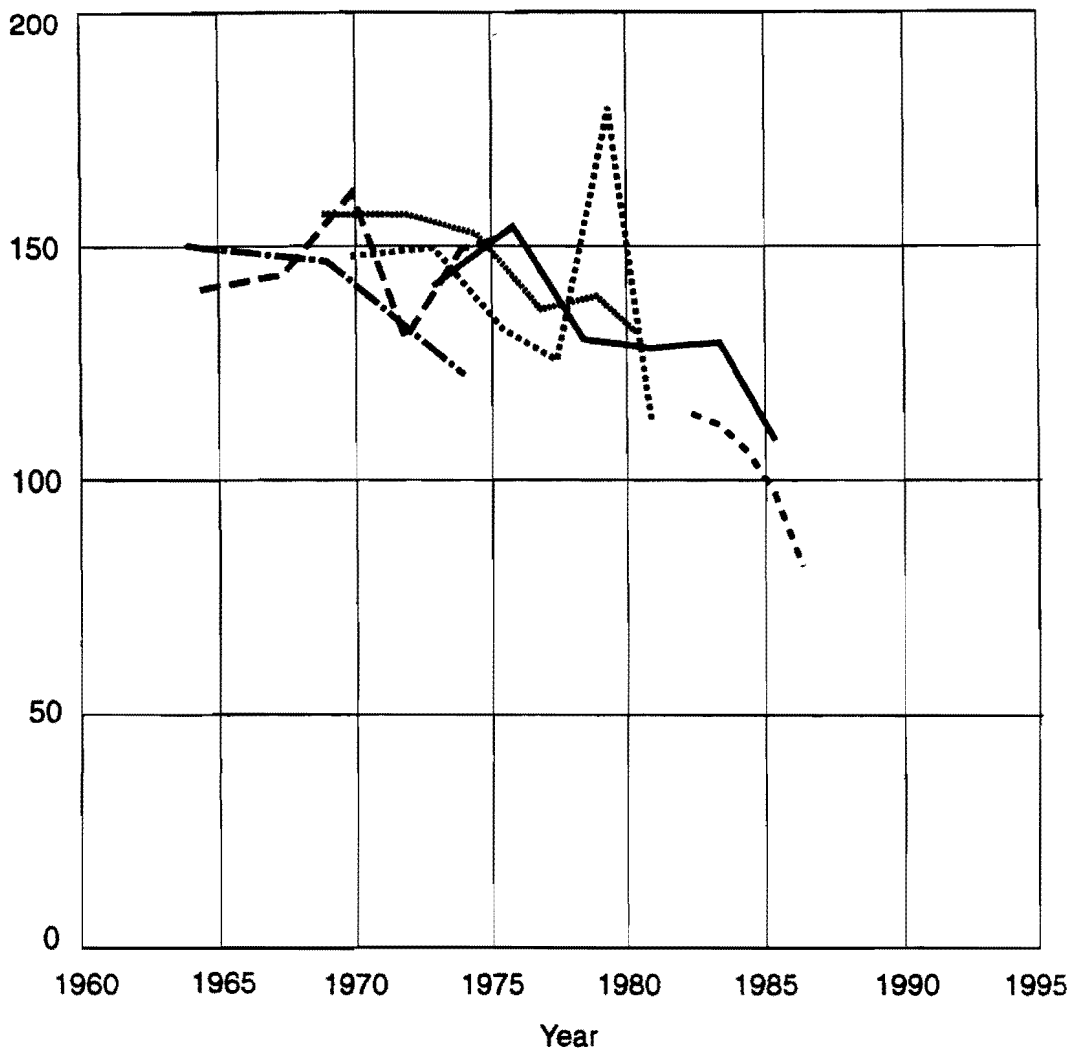
ENQUÊTE MORTALITÉ, MORBIDITÉ ET UTILISATION DES SERVICES, MAY-SEPTEMBER 1987
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.145	0.125	1986.6	142	212
20-24	1.131	0.126	1985.4	109	158
25-29	2.522	0.176	1983.5	130	193
30-34	3.716	0.189	1981.2	129	191
35-39	5.007	0.207	1978.6	131	195
40-44	5.750	0.263	1975.8	155	232
45-49	6.176	0.262	1972.9	142	213

Source: Michel Cayemittes, Anouch Chahnazarian and others, *Survie et santé de l'enfant en Haïti: résultats de l'enquête mortalité, morbidité et utilisation des services* (Port-au-Prince, Ministère de la santé publique et de la population, Institut haïtien de l'enfance; and The Johns Hopkins University, 1989), p. 145, table A.18.

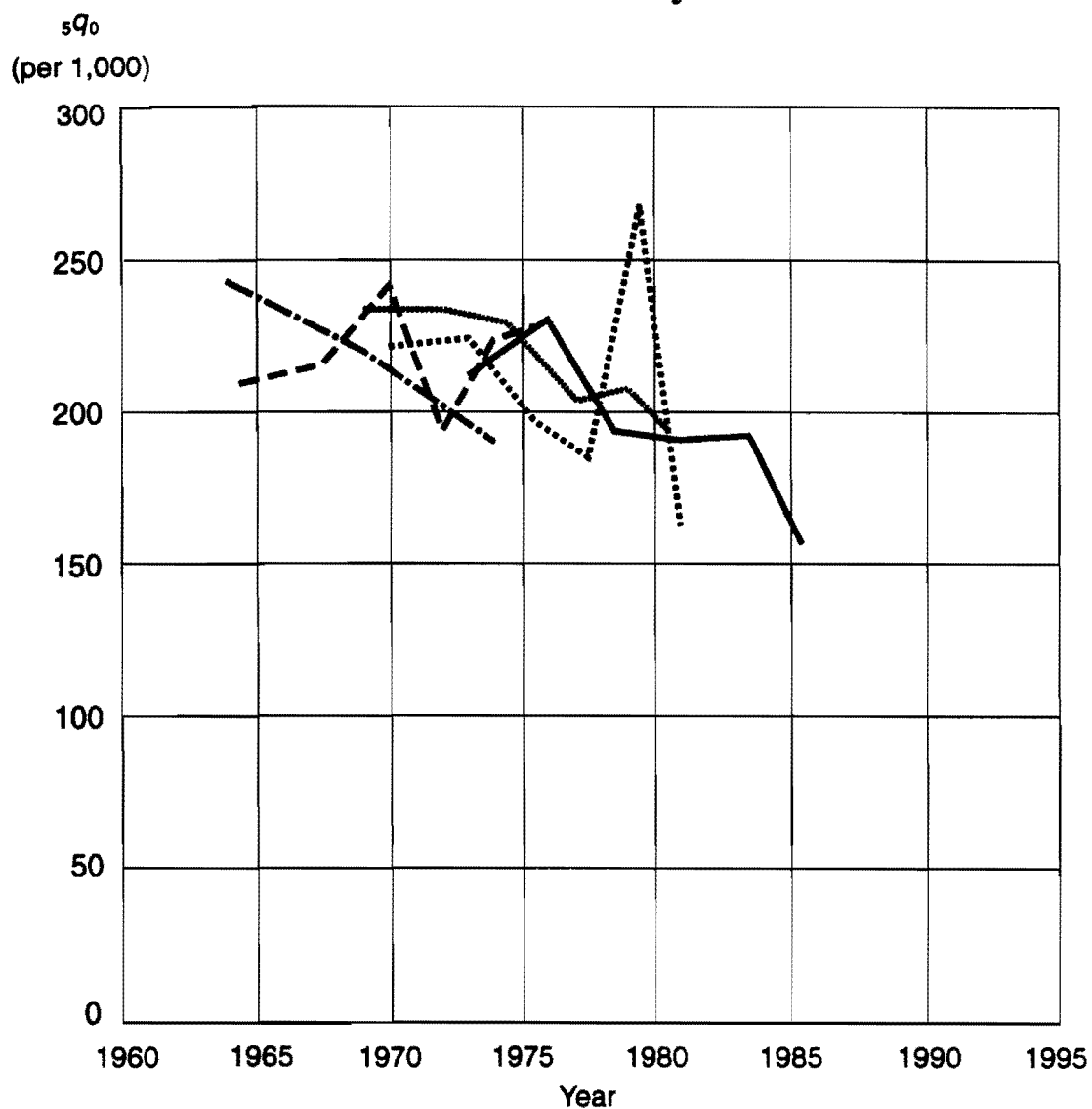
Infant mortality: Haiti

‰
(per 1,000)



- Enquête haïtienne sur la fécondité, 1977 (direct)
- - - Enquête haïtienne sur la fécondité, 1977 (indirect)
- Census, 1982 (indirect)
- Enquête haïtienne sur la prevalence de la contraception, 1983 (indirect)
- - - Enquête mortalité, morbidité et utilisation des services, 1987 (direct)
- Enquête mortalité, morbidité et utilisation des services, 1987 (indirect)

Under-five mortality: Haiti



- Enquête haïtienne sur la fécondité, 1977 (direct)
- Enquête haïtienne sur la fécondité, 1977 (indirect)
- Census, 1982 (indirect)
- Enquête haïtienne sur la prevalence de la contraception, 1983 (indirect)
- Enquête mortalité, morbidité et utilisation des services, 1987 (indirect)

HONDURAS

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1974 census (10 per cent sample) and the 1988 census.

Sample surveys

Maternity histories were collected in 1987 by the Encuesta Nacional de Epidemiología y Salud Familiar. Brass questions were included in the 1972 round of the multi-round Encuesta Demográfica Nacional, the second Encuesta Demográfica Nacional in 1983 and the Encuesta de Salud Materno Infantil in 1984. Brass questions were also included in the Encuesta Nacional del Uso de Métodos Anticonceptivos of 1981 (CPS), but the data are not available. A multi-round survey, the Encuesta Demográfica Nacional, was held from 1971 to 1972.

ENCUESTA DEMOGRÁFICA NACIONAL DE HONDURAS, DECEMBER 1970-OCTOBER 1972 (Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1971-1972	117	184

Source: Antonio Ortega and Manuel Rincón, *Encuesta Demográfica Nacional de Honduras*, fasc. IV, *Mortalidad*, CELADE Series A, No. 129d (Santiago, Chile, Honduras Dirección General de Estadística and Centro Latinoamericano de Demografía, 1975), p. 46, table 1.4.

ENCUESTA DEMOGRÁFICA NACIONAL RETROSPECTIVA, JULY-OCTOBER 1972 (Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.287	0.125	1971.6	132	196
20-24	1.666	0.160	1970.3	133	197
25-29	3.373	0.191	1968.3	139	207
30-34	4.957	0.196	1966.0	132	196
35-39	6.225	0.219	1963.4	138	206
40-44	7.181	0.241	1960.7	141	211
45-49	7.275	0.264	1957.7	143	213

Source: Antonio Ortega and Manuel Rincón, *Encuesta Demográfica Nacional de Honduras (EDENH)*, fasc. IV, *Mortalidad*, CELADE Series A, No. 129d (Santiago, Chile, Honduras Dirección General de Estadística y Censos and Centro Latinoamericano de Demografía, 1975), p. 55, table 2.1.

CENSUS, 6 MARCH 1974
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1965
15-19	0.295	0.113	1973.1	116	170
20-24	1.622	0.142	1971.7	118	173
25-29	3.268	0.147	1969.8	109	158
30-34	4.948	0.175	1967.5	119	175
35-39	6.219	0.191	1964.9	122	179
40-44	7.024	0.221	1962.2	130	193
45-49	7.294	0.243	1959.3	132	196

Source: Centro Latinoamericano de Demografía and United Nations Children's Fund, *La mortalidad infantil en Honduras*, CELADE Series OI, No. 39 (Santiago, Chile, 1985), p. 56, table 1.1.

ENCUESTA DEMOGRÁFICA NACIONAL DE HONDURAS, JULY 1983-JANUARY 1984
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1965
15-19	0.233	0.079	1982.7	83	117
20-24	1.392	0.096	1981.4	83	116
25-29	2.910	0.110	1979.5	84	119
30-34	4.233	0.117	1977.2	84	118
35-39	5.700	0.150	1974.7	98	141
40-44	6.487	0.183	1972.0	110	160
45-49	7.083	0.188	1969.1	104	150

Source: *Encuesta Demográfica Nacional de Honduras* (EDENH II 1983), vol. II, *Informe general*, CELADE Series A, No. 1047/II (San José, Costa Rica, Honduras Dirección General de Estadística y Censos, Consejo Superior de Planificación Económico; Centro Latinoamericano de Demografía and Agencia Canadiense para el Desarrollo Internacional, 1985), p. 46, table 13.

ENCUESTA NACIONAL DE SALUD MATERNO INFANTIL, FEBRUARY 1984-FEBRUARY 1985
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1965
15-19	0.246	0.073	1983.5	76	107
20-24	1.440	0.078	1982.2	69	95
25-29	3.018	0.093	1980.3	73	101
30-34	4.358	0.100	1978.1	73	101
35-39	5.638	0.131	1975.6	87	123
40-44	6.610	0.151	1972.9	92	132

Source: *Encuesta Nacional de Salud Materno Infantil de Honduras, 1984* (Tegucigalpa, Honduras, Ministerio de Salud Pública and Asociación Hondureña de Planificación de Familia; and Washington, D.C., Family Health International and Management Sciences for Health, 1986), p. 30, table II.7.

ENCUESTA NACIONAL DE EPIDEMIOLOGÍA Y SALUD FAMILIAR, JUNE-NOVEMBER 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1970-1974	74	112
1975-1979	59	91
1980-1984	54	86

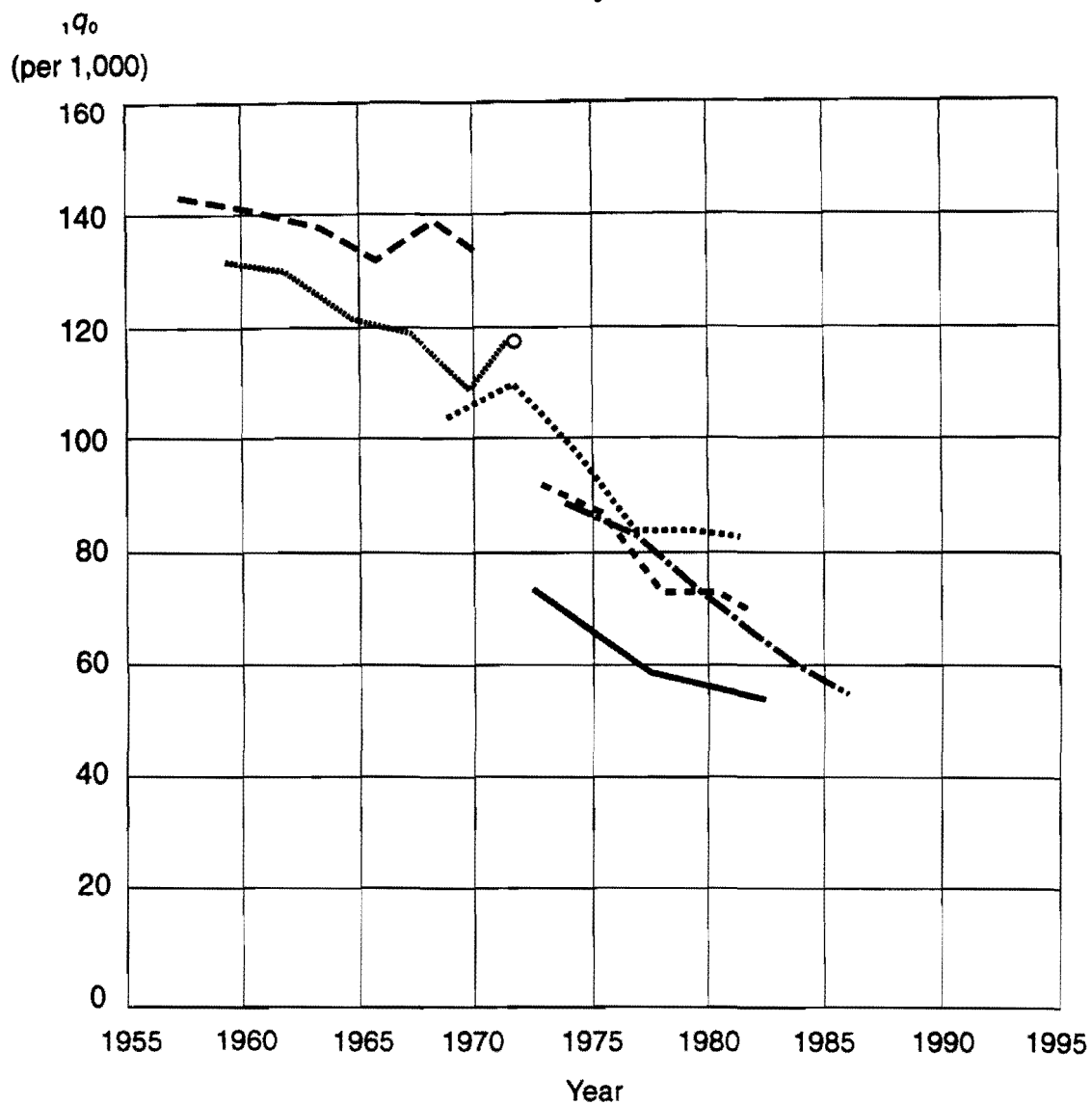
Source: *Encuesta Nacional de Epidemiología y Salud Familiar Honduras, 1987* (Tegucigalpa, Honduras, Ministerio de Salud Pública and Asociación Hondureña de Planificación de Familia; and Washington, D.C., Family Health International and Management Sciences for Health, 1989), p. 73-74, tables IV C7-IV C8.

CENSUS, 29 MAY 1988
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.249	0.057	1987.1	55	74
20-24	1.220	0.063	1985.8	55	74
25-29	2.483	0.075	1983.9	60	81
30-34	3.738	0.090	1981.8	66	90
35-39	4.759	0.108	1979.4	74	102
40-44	5.586	0.133	1976.8	83	117
45-49	5.984	0.157	1973.9	89	126

Source: Honduras, *Censo Nacional de Población, 1988*, vol III, *Características demográficas y sociales por departamento* (Tegucigalpa, Secretaría de Planificación, Coordinación y Presupuesto, Dirección General de Estadística y Censos, 1990), pp. 2-3, table 1.

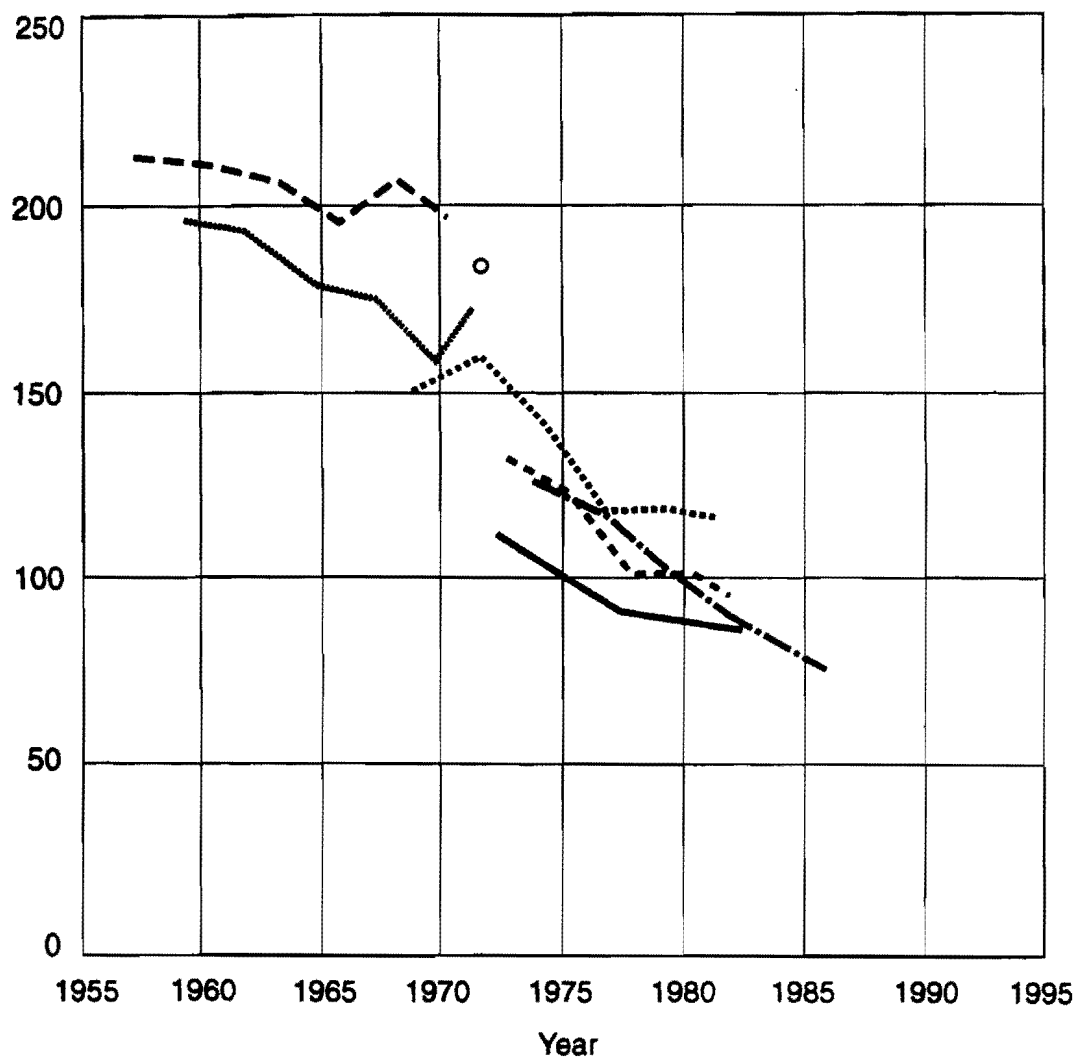
Infant mortality: Honduras



- Encuesta Demográfica Nacional de Honduras, 1972 (direct)
- — Encuesta Demográfica Nacional Retrospectiva, 1972 (indirect)
- Census, 1974 (indirect)
- Encuesta Demográfica Nacional de Honduras, 1983 (indirect)
- - - Encuesta Nacional de Salud Materno Infantil, 1987 (indirect)
- Encuesta Nacional de Epidemiología y Salud Familiar, 1987 (direct)
- — Census, 1988 (indirect)

Under-five mortality: Honduras

$s q_0$
(per 1,000)



- Encuesta Demográfica Nacional de Honduras, 1972 (direct)
- Encuesta Demográfica Nacional Retrospectiva, 1972 (Indirect)
- Census, 1974 (Indirect)
- Encuesta Demográfica Nacional de Honduras, 1983 (Indirect)
- - - Encuesta Nacional de Salud Materno Infantil, 1987 (Indirect)
- Encuesta Nacional de Epidemiología y Salud Familiar, 1987 (direct)
- Census, 1988 (Indirect)

HONG KONG

Vital registration

Registration of births and deaths is reported to be complete.

Censuses

Maternity histories of all ever-married women aged 15-49 were collected by the 1976 by-census, but only cumulative information on children ever born and children surviving are available. Brass questions were included in the 1971 census but the data were not available for this report (Domschke and Doyer, 1986). The indirect mortality estimates are low and have not been included on the graphs.

Sample surveys

No relevant data are available.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	42	1970	19	1980	11
1961	38	1971	18	1981	10
1962	37	1972	17	1982	10
1963	33	1973	16	1983	10
1964	26	1974	17	1984	9
1965	24	1975	15	1985	8
1966	25	1976	14	1986	8
1967	26	1977	14	1987	7
1968	23	1978	12	1988	7
1969	21	1979	12	1989	7

Sources: *Hong Kong Statistics, 1947-1967* (Hong Kong, Census and Statistics Department, 1969), p. 39, table 3.2; *Hong Kong Economic and Social Trends, 1970-1980* (Hong Kong, Census and Statistics Department, 1981), p. 9, table 1.5; *Hong Kong Annual Digest of Statistics, 1990* (Hong Kong, Census and Statistics Department, 1990), p. 16, table 2.9; and data provided to the United Nations Statistical Office.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

Period	Mortality rate (per 1,000)	
	190	590
1960-1962	38	54
1970-1972	20	32
1976	14	17
1981	10	12
1986	8	9

Sources: *Model Life Tables for Developing Countries*, Population Studies, No. 77 (United Nations publication, Sales No. E.81.XIII.7), pp. 309-311; United Nations, *Age Structure of Mortality in Developing Countries: A Data Base for Cross-sectional and Time Series Research*, ST/ESA/SER.R/66 (New York, 1986), p. 173; and data provided to the United Nations Statistical Office.

HONG KONG BY-CENSUS, 30 JULY-8 AUGUST 1976
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	590
15-19	0.027	0.037	1975.6	40	57
20-24	0.330	0.012	1974.8	13	15
25-29	1.317	0.005	1973.7	*	*
30-34	2.548	0.011	1972.3	10	19
35-39	3.385	0.014	1970.7	13	15
40-44	4.047	0.019	1968.7	16	18
45-49	4.220	0.041	1965.8	26	33

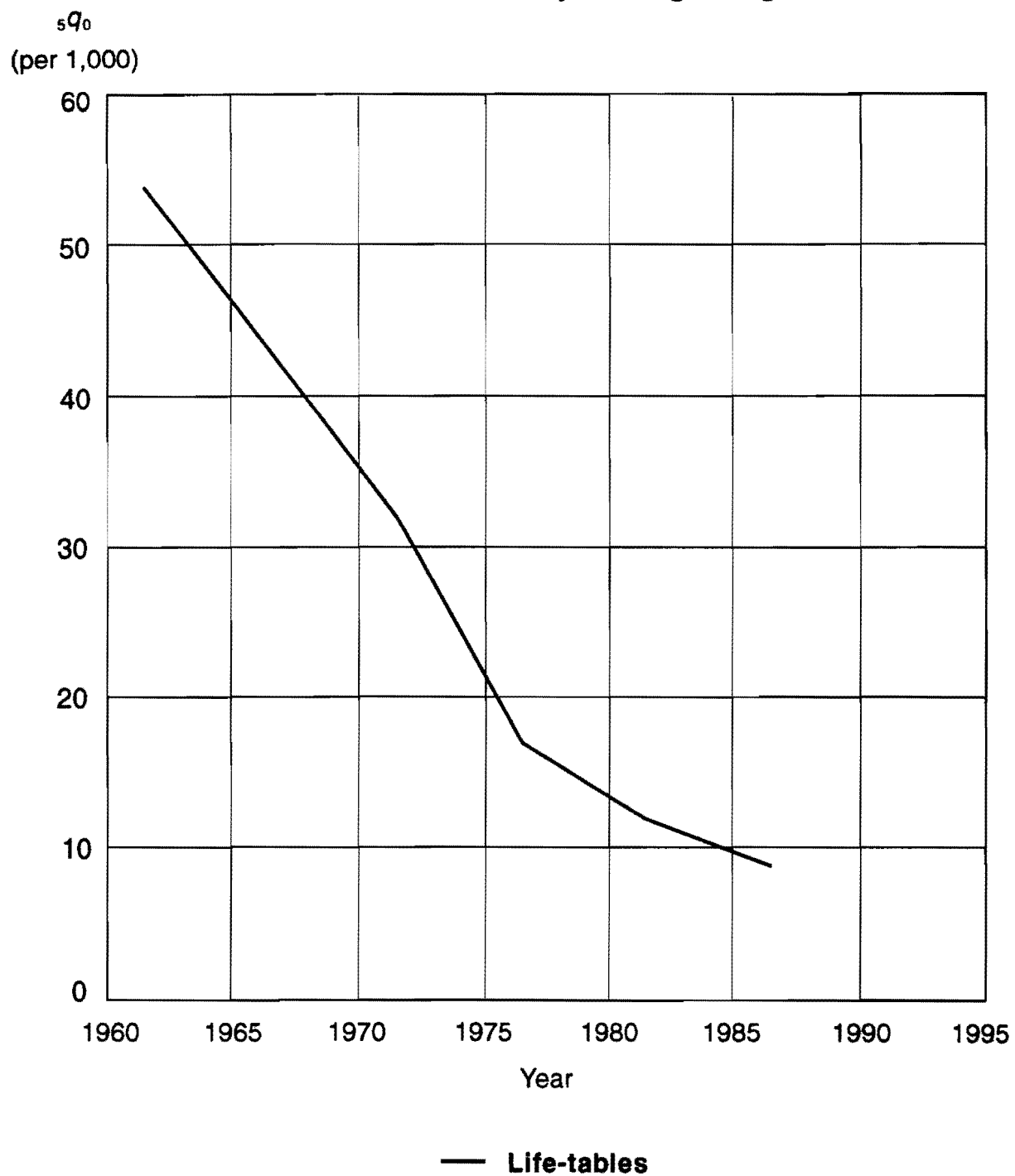
Source: *Hong Kong By-Census, 1976: Contribution to the WFS* (Hong Kong, Census and Statistics Department, 1979), pp. 26 and 38, tables 2.1 and 5.3.1.

* Denotes value above a level-25 model life-table.

Infant mortality: Hong Kong



Under-five mortality: Hong Kong



INDIA

Vital registration

Completeness of registration of deaths is not reported. However, estimates are available from the dual-record sample registration system, which was introduced in the mid-1960s and was providing national coverage by the late 1970s.

Censuses

Brass questions were included in the 1981 census. The sex ratios among reported children ever born are high, indicating selective omission of female children.

Sample surveys

Brass questions were included in the National Family Planning Survey of 1970-1971, the Survey on Infant and Child Mortality in 1979 and the Second All-India Family Planning Survey in 1980-1981. Data from the National Sample Survey of 1965-1966 are not included here because the estimates refer mainly to a period prior to 1960. Data from the Fertility Survey (1972) were only available for urban and rural areas separately and have not been included here.

SAMPLE REGISTRATION SYSTEM

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1971	129	1978	127	1985	97
1972	139	1979	120	1986	96
1973	134	1980	114	1987	95
1974	126	1981	110	1988	94
1975	140	1982	105	1989	..
1976	129	1983	105	1990	..
1977	130	1984	104		

Source: India, Ministry of Home Affairs, Registrar General, *Sample Registration Bulletin* (New Delhi), vol. XXIV, No. 1 (June 1990), p. 3.

NOTE: Data for 1971-1978 excluding Bihar and West Bengal.

NATIONAL FAMILY PLANNING SURVEY, JULY 1970-JANUARY 1971 (Indirect estimates, South Asian pattern)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>40</i>	<i>40</i>
15-19	0.222	0.173	1969.7	175	295
20-24	1.344	0.205	1968.4	162	271
25-29	2.765	0.212	1966.7	146	239
30-34	3.846	0.230	1964.5	144	236
35-39	4.558	0.235	1961.9	139	226
40-44	4.784	0.264	1958.9	147	242
45-49	..	..	..	..	..

Source: Operations Research Group, *Family Planning Practices in India: The First All-India Survey Report* (Baroda, 1971).

SURVEY ON INFANT AND CHILD MORTALITY, 1979
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.122	0.142	1977.9	147	240
20-24	1.002	0.132	1976.8	113	176
25-29	2.427	0.132	1975.3	99	149
30-34	3.628	0.140	1973.2	95	144
35-39	4.482	0.153	1970.8	97	147
40-44	4.890	0.166	1967.9	101	153
45-49	5.014	0.180	1964.2	103	158

Source: India, Ministry of Home Affairs, Registrar General, *Sample Registration Bulletin* (New Delhi), vol. XIV, No. 2 (December 1980), p. 14, table 1.

SECOND ALL-INDIA FAMILY PLANNING SURVEY, 1980-1981^a
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.139	0.119	1979.7	127	201
20-24	1.134	0.145	1978.6	122	192
25-29	2.497	0.136	1976.9	101	153
30-34	3.574	0.160	1974.7	107	164
35-39	4.351	0.183	1972.0	114	177
40-44	..	..	..	..	..
45-49	..	..	..	..	..

Source: M. E. Khan and C. V. S. Prasad, *Family Planning Practices in India* (Baroda, Operations Research Group, 1983), pp. 18 and 191, tables 2.7 and A3.4.

^a Excluding Assam.

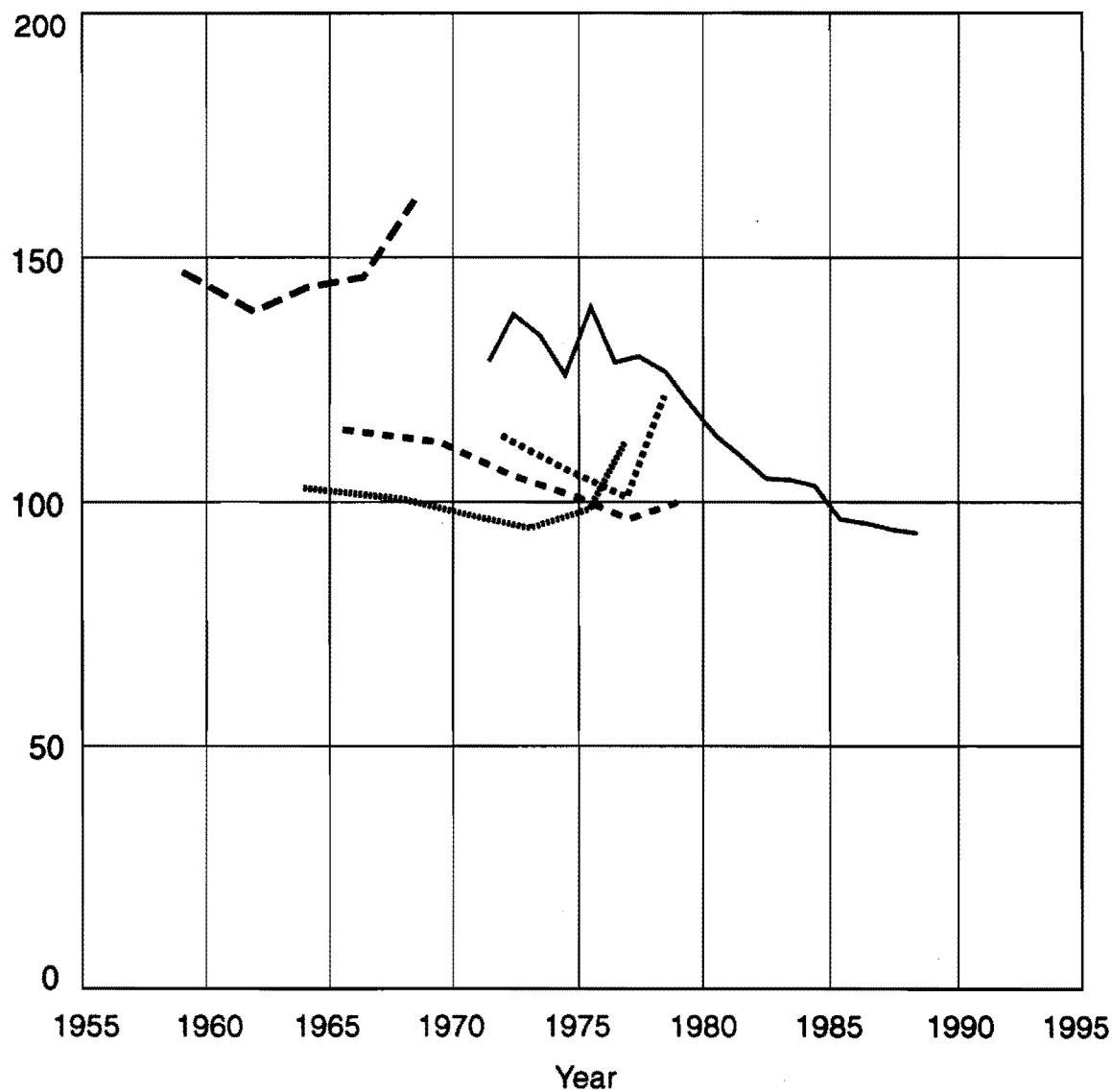
CENSUS, 1 MARCH 1981
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.173	0.115	1980.1	117	184
20-24	1.133	0.118	1978.9	100	151
25-29	2.413	0.131	1977.2	97	146
30-34	3.455	0.149	1975.0	101	153
35-39	4.264	0.167	1972.5	105	161
40-44	4.712	0.189	1969.5	112	174
45-49	4.989	0.206	1965.7	115	180

Source: *Census of India, 1981, Series-1 India, Part-II, Special, Report and Tables Based on 5 Per Cent Sample Data* (New Delhi, Registrar General and Census Commissioner for India, 1983), pp. 190, 411, 417, 423 and 429.

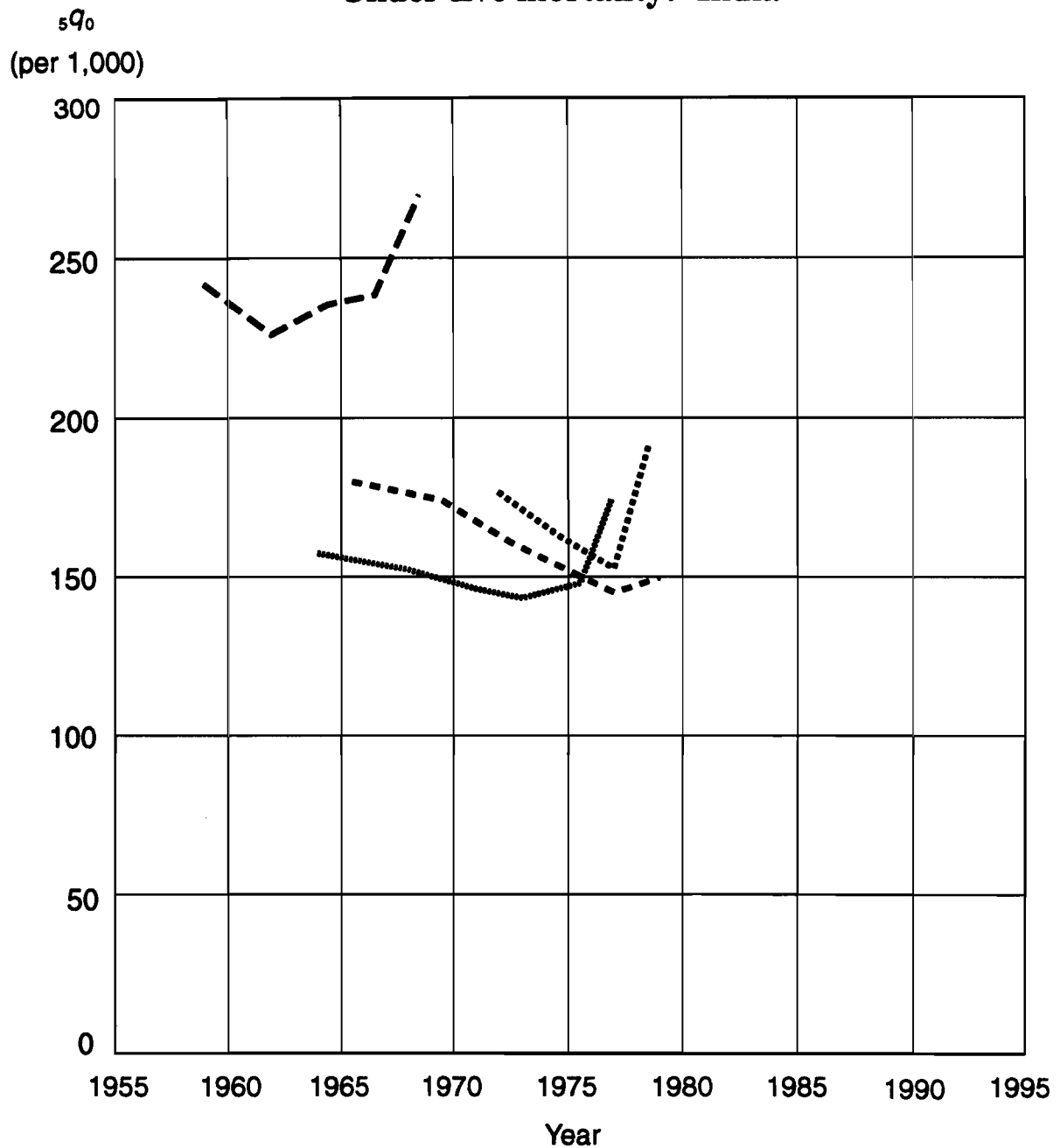
Infant mortality: India

${}_1q_0$
(per 1,000)



- Sample Registration System
- National Family Planning Survey, 1970 (indirect)
- Survey on Infant and Child Mortality, 1979 (indirect)
- Second All-India Family Planning Survey, 1980 (indirect)
- - - Census, 1981 (indirect)

Under-five mortality: India



- — National Family Planning Survey, 1970 (indirect)
- Survey on Infant and Child Mortality, 1979 (indirect)
- Second All-India Family Planning Survey, 1980 (indirect)
- - - Census, 1981 (indirect)

INDONESIA

Vital registration

Completeness of registration of deaths is not reported.

Censuses

Brass questions were included in the 1971 and 1980 censuses.

Sample surveys

Maternity histories were collected in 1976 by the Indonesia Fertility Survey (WFS), which covered only Java and Bali, about two thirds of the national population (Indonesia, 1978); and in 1987 by the National Indonesia Contraceptive Prevalence Survey (DHS), carried out in 20 of the 27 provinces of the country, representing 93 per cent of the total population (Indonesia, 1989). Brass questions were included in the Intercensal Survey of 1985.

CENSUS, 24 SEPTEMBER 1971
(Indirect estimates, North model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>190</i>	<i>190</i>
15-19	0.215	0.150	1970.7	159	268
20-24	1.379	0.172	1969.4	134	226
25-29	2.900	0.196	1967.6	128	213
30-34	4.114	0.217	1965.4	126	213
35-39	4.844	0.236	1963.0	126	213
40-44	4.929	0.262	1960.3	129	219
45-49	4.894	0.286	1957.4	129	218

Source: *Demographic Yearbook—Special Issue: Historical Supplement* (United Nations publication, Sales No. E/F.79.XIII.8), pp. 248-249 and 513, tables 3 and 7.

INDONESIA FERTILITY SURVEY, APRIL-MAY 1976
(Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>190</i>	<i>190</i>
1961-1966	121	208
1966-1971	99	171
1971-1976	95	159

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 74.

INDONESIA FERTILITY SURVEY, APRIL-MAY 1976^a
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.169	0.136	1975.6	149	252
20-24	1.205	0.152	1974.4	120	202
25-29	2.594	0.150	1972.5	100	165
30-34	3.897	0.195	1970.3	115	192
35-39	4.736	0.197	1967.9	107	178
40-44	5.252	0.221	1965.2	110	184
45-49	5.137	0.272	1962.3	123	207

Source: World Fertility Survey standard recode tapes.

^a Survey confined to the islands of Java and Bali, accounting for two thirds of the national population.

CENSUS, 31 OCTOBER 1980
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.178	0.130	1979.8	139	235
20-24	1.189	0.126	1978.6	101	165
25-29	2.536	0.140	1976.8	95	154
30-34	3.806	0.159	1974.6	96	157
35-39	4.760	0.177	1972.1	98	159
40-44	5.083	0.198	1969.5	100	164
45-49	5.176	0.214	1966.5	98	161

Source: *Demographic Yearbook, 1986* (United Nations publication, Sales No. E/F.87.XIII.1), pp. 242-243, 1064-1065 and 1138-1139, tables 7, 50 and 51.

NATIONAL INDONESIA CONTRACEPTIVE PREVALENCE SURVEY, SEPTEMBER-DECEMBER 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1972-1976	81	134
1977-1981	80	123
1982-1987 ^a	70	101

Source: *National Indonesia Contraceptive Prevalence Survey, 1987* (Jakarta, Indonesia, Central Bureau of Statistics and National Family Planning Coordinating Board; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1989), p. 69, table 8.1.

^a Including events occurring in 1987 up to the month preceding the date of interview.

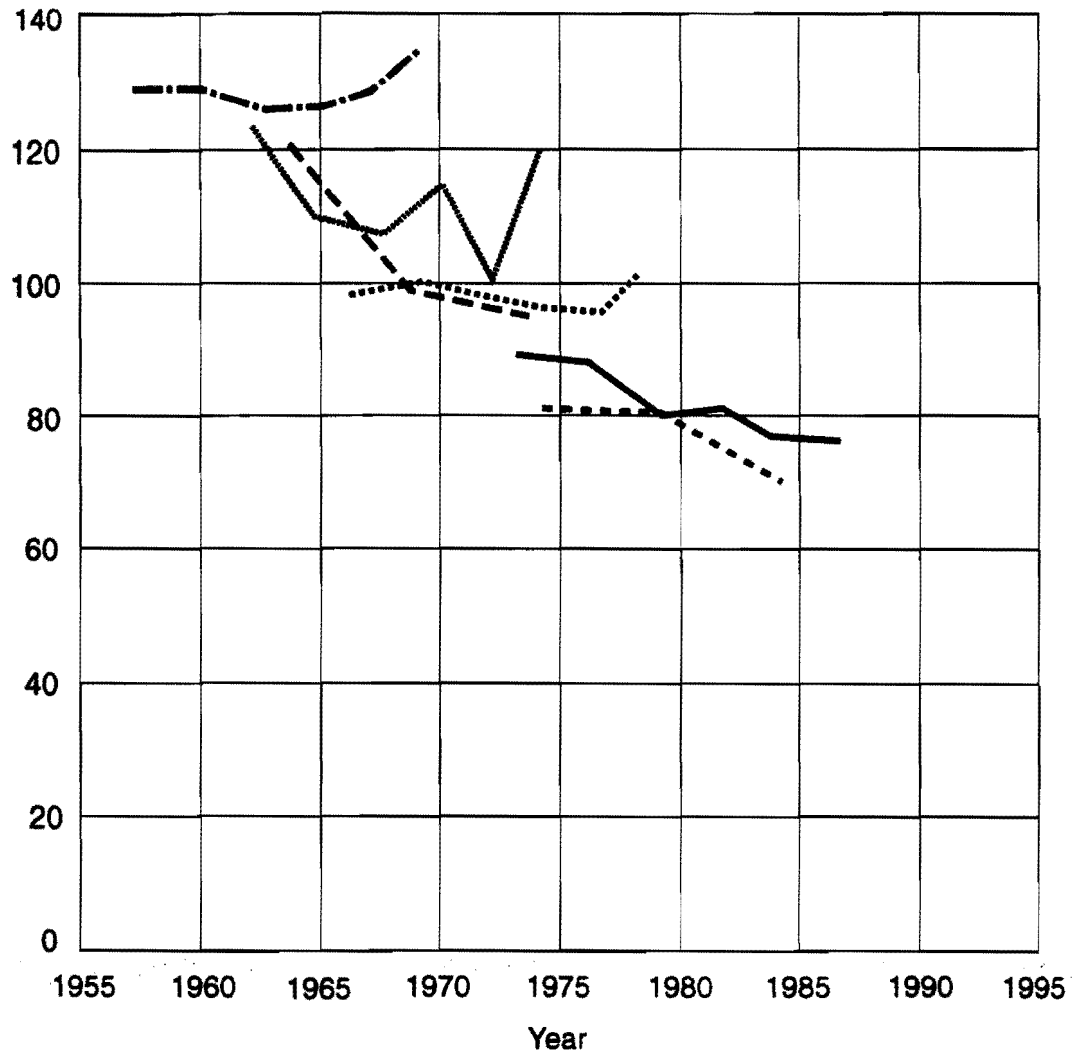
NATIONAL INDONESIA CONTRACEPTIVE PREVALENCE SURVEY, SEPTEMBER-DECEMBER 1987
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.110	0.110	1986.9	126	213
20-24	0.960	0.090	1985.8	76	121
25-29	2.200	0.110	1984.0	77	122
30-34	3.370	0.130	1981.8	81	129
35-39	4.270	0.140	1979.3	80	127
40-44	5.190	0.170	1976.6	88	141
45-49	5.610	0.190	1973.7	89	143

Source: *National Indonesia Contraceptive Prevalence Survey, 1987* (Jakarta, Indonesia, Central Bureau of Statistics and National Family Planning Coordinating Board; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1989), table 8.4.

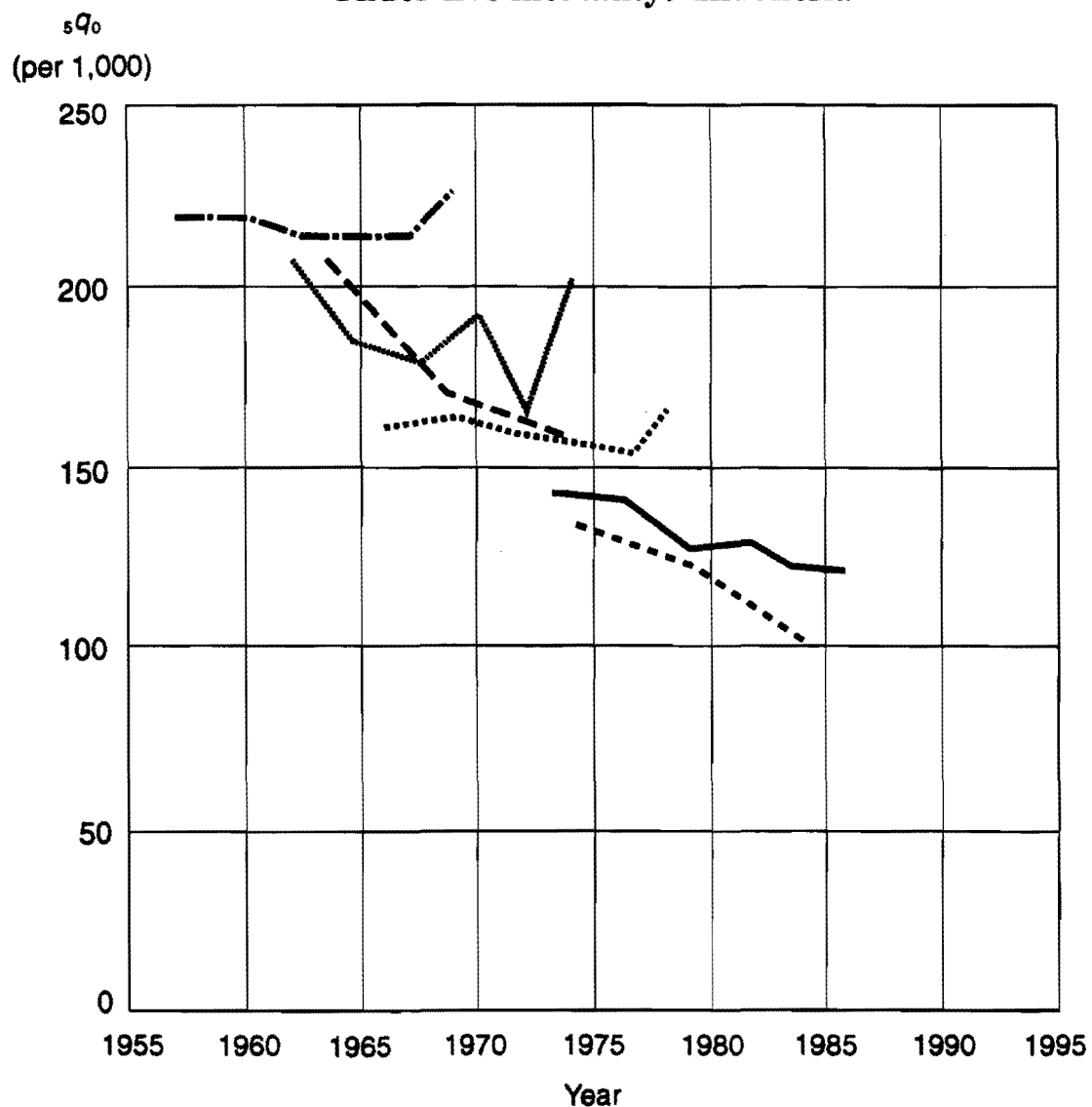
Infant mortality: Indonesia

$1q_0$
(per 1,000)



- Census, 1971 (indirect)
- - - Indonesia Fertility Survey, 1976 (direct)
- Indonesia Fertility Survey, 1976 (indirect)
- Census, 1980 (indirect)
- - - National Indonesia Contraceptive Prevalence Survey, 1987 (direct)
- National Indonesia Contraceptive Prevalence Survey, 1987 (indirect)

Under-five mortality: Indonesia



- Census, 1971 (indirect)
- — Indonesia Fertility Survey, 1976 (direct)
- Indonesia Fertility Survey, 1976 (indirect)
- Census, 1980 (indirect)
- - - National Indonesia Contraceptive Prevalence Survey, 1987 (direct)
- National Indonesia Contraceptive Prevalence Survey, 1987 (indirect)

IRAN (ISLAMIC REPUBLIC OF)

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1986 census.

Sample surveys

Brass questions were included in the 1973 baseline enumeration for the Population Growth Survey of 1973-1976, a multi-round follow-up survey with rounds at six-month intervals. Retrospective surveys were also carried out in 1985, 1987 and 1989, but data from these surveys were not available for this report.

BASELINE POPULATION GROWTH SURVEY, OCTOBER 1973
(Indirect estimates, general pattern)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1970</i>
15-19	0.246	0.162	1972.7	165	271
20-24	1.584	0.164	1971.5	136	215
25-29	3.387	0.204	1969.9	144	230
30-34	5.066	0.226	1967.7	143	228
35-39	6.152	0.244	1965.3	142	227
40-44	6.679	0.266	1962.4	141	226
45-49	6.938	0.301	1959.0	148	239

Source: K. L. Kohli, *An Estimation of Infant and Child Mortality in Iran from Survey Data*, Analytical and Technical Population Studies Series, Report No. 3 (Teheran, Statistical Centre of Iran, Plan and Budget Organization, 1978), p. 8, table 1.

POPULATION GROWTH SURVEY OF IRAN, 1973-1976
(Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1970</i>
1973-1976	112	170

Sources: *Population Growth Survey of Iran: Final Report, 1973-1976*, Serial No. 777 (Teheran, Statistical Centre of Iran, Plan and Budget Organization, 1978), p. 95; and *Abridged Life Tables for Iran and in Rural [and] Urban Areas, 1973-1976*, Analytical and Technical Population Studies Series, Report No. 2 (Teheran, Statistical Centre of Iran, Plan and Budget Organization, 1977).

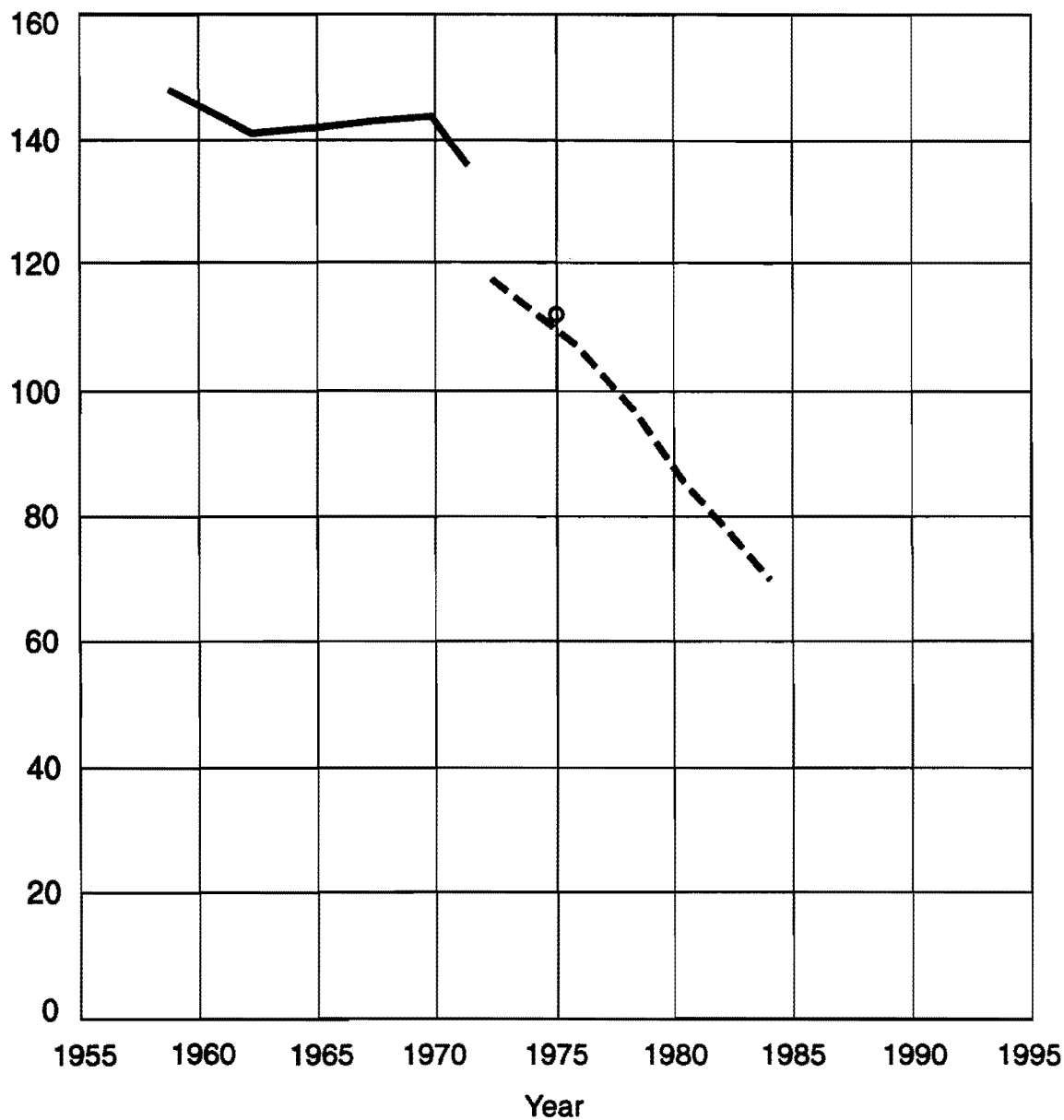
CENSUS, 22 SEPTEMBER 1986
(Indirect estimates, general pattern)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1980</i>
15-19	0.334	0.073	1985.5	68	96
20-24	1.516	0.082	1984.2	70	99
25-29	3.068	0.100	1982.5	77	110
30-34	4.486	0.124	1980.6	86	125
35-39	5.620	0.153	1978.4	97	144
40-44	6.368	0.189	1975.9	107	162
45-49	6.757	0.227	1972.5	118	181

Source: Data provided to the United Nations Statistical Office.

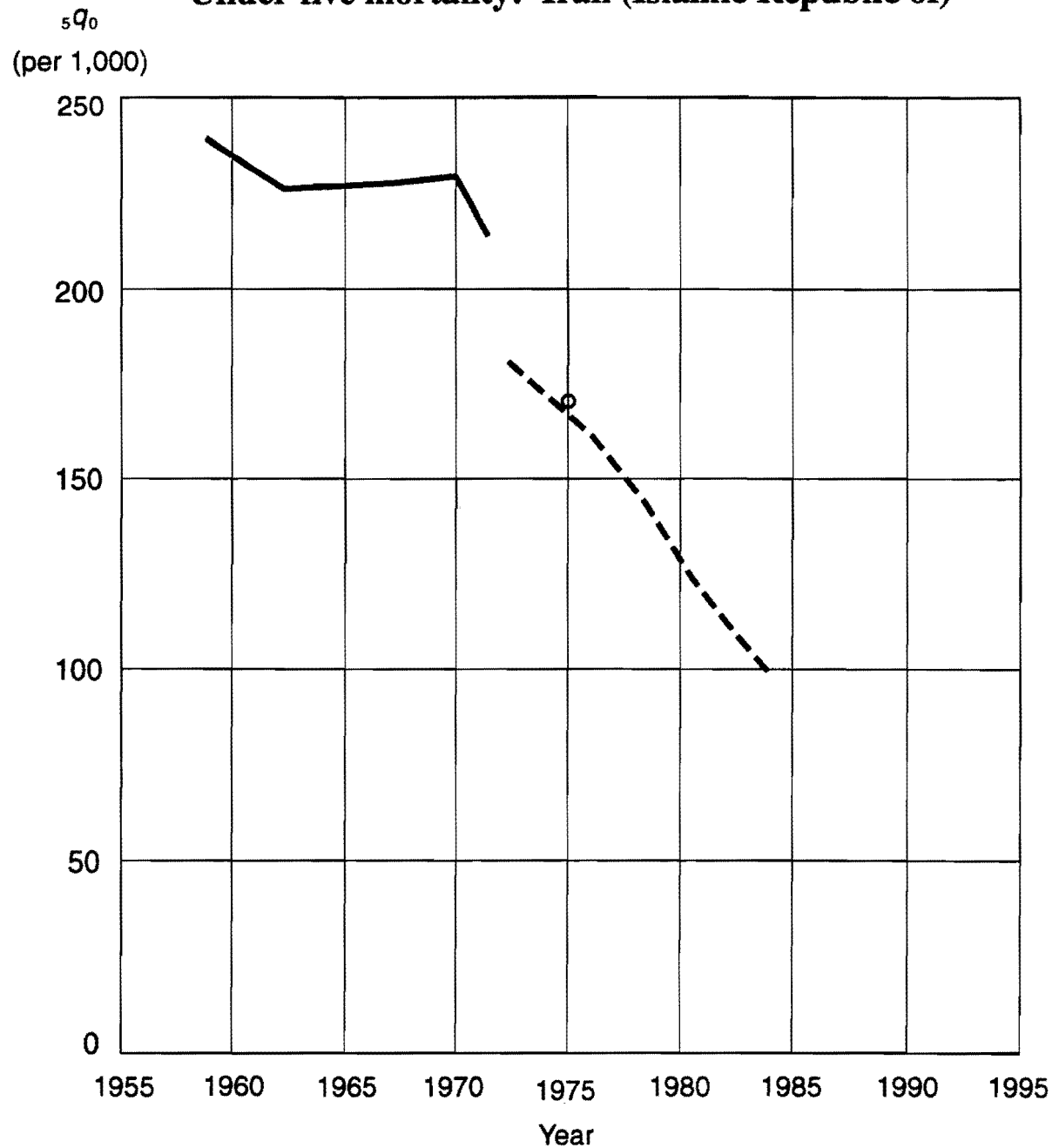
Infant mortality: Iran (Islamic Republic of)

${}_1q_0$
(per 1,000)



- Baseline Population Growth Survey, 1973 (indirect)
- Population Growth Survey of Iran, 1973-1976 (direct)
- Census, 1986 (indirect)

Under-five mortality: Iran (Islamic Republic of)



- Baseline Population Growth Survey, 1973 (indirect)
- Population Growth Survey of Iran, 1973-1976 (direct)
- Census, 1986 (indirect)

IRAQ

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1987 census.

Sample surveys

Brass questions were included in the Fertility Survey of 1974 and the Iraq Immunization, Diarrhoeal Disease, Maternal and Childhood Mortality Survey of 1990. A multi-round survey, the Demographic Sample Survey and Sample Registration System, was conducted in 1973-1975, but estimates are only available for the first year (1973-1974).

DEMOGRAPHIC SAMPLE SURVEY AND SAMPLE REGISTRATION SYSTEM, 1973-1974
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1973	1974
1973-1974	92	127

Source: K. L. Kohli, "Current life tables for Iraq and its rural [and] urban areas, 1973-1974", *The Egyptian Population and Family Planning Review* (Cairo), vol. 9, No. 1 (June 1976), pp. 20-21.

FERTILITY SURVEY, 1974
(Indirect estimates, West model)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1973	1974
15-19	0.266	0.109	1973.2	106	154
20-24	1.402	0.101	1972.0	86	122
25-29	3.083	0.109	1970.2	84	119
30-34	4.707	0.123	1968.2	89	126
35-39	6.084	0.148	1965.9	99	142
40-44	6.768	0.174	1963.4	107	155
45-49	7.049	0.196	1960.5	110	160

Source: *The Population Situation in the ECWA Region: Iraq* (Beirut, United Nations, Economic Commission for Western Asia, 1980), pp. 5-11, table 5.5.

^a Average parity for ever-married women adjusted by applying the proportion ever married from the 1977 census.

CENSUS, 17 OCTOBER 1987
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.155	0.116	1986.7	122	180
20-24	1.035	0.098	1985.5	86	122
25-29	2.489	0.086	1983.8	69	96
30-34	4.151	0.089	1981.8	67	92
35-39	5.643	0.097	1979.6	68	93
40-44	6.309	0.111	1977.0	72	99
45-49	6.553	0.134	1974.1	78	109

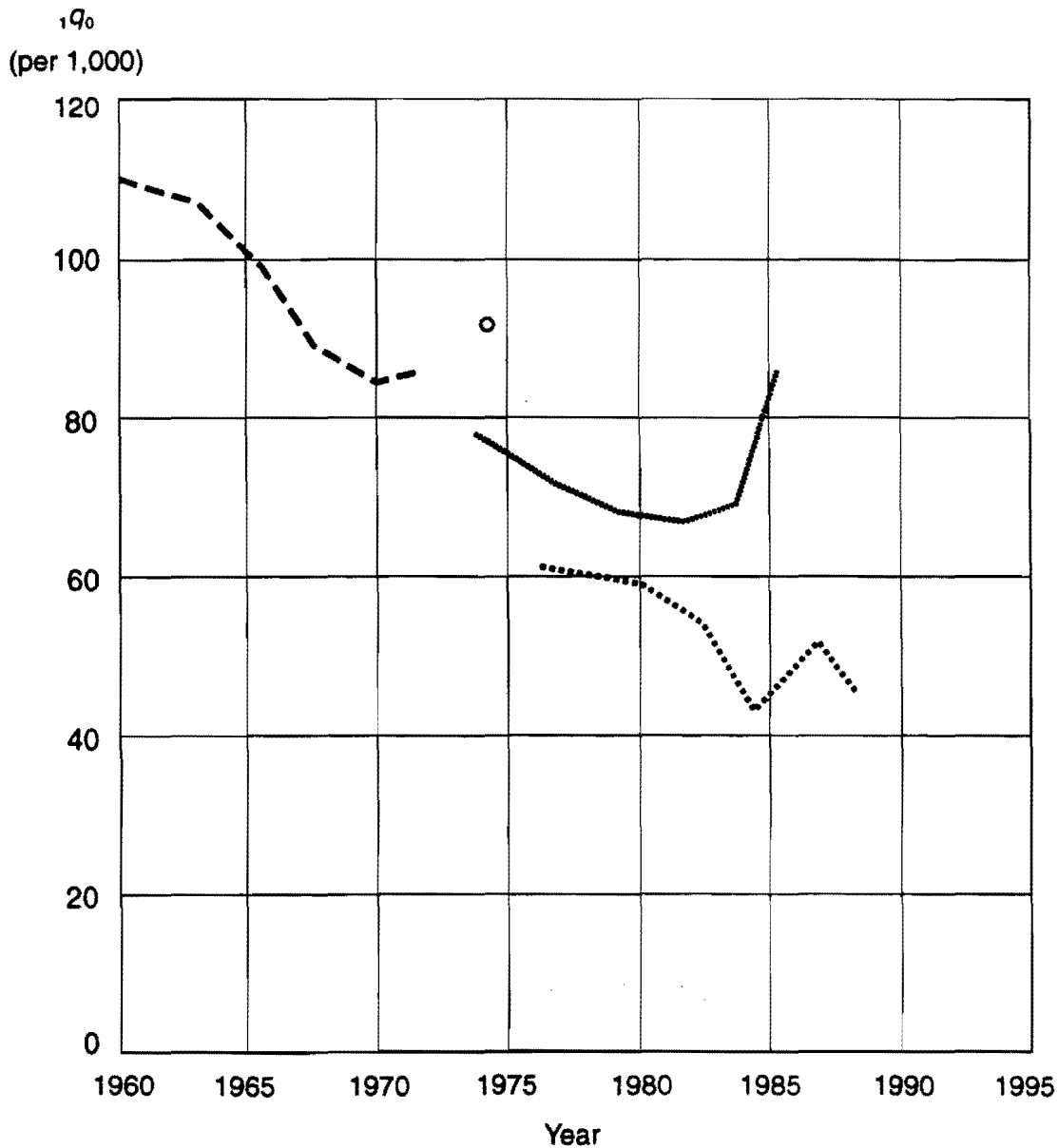
Source: Iraq Immunization, Diarrhoeal Disease, Maternal and Childhood Mortality Survey, 1990, Evaluation Series, No. 9, Report on the EPI/CDD/Mortality Survey Iraq, May-June 1990 (Baghdad, Ministry of Health, in collaboration with World Health Organization; United Nations, Economic and Social Commission for Western Asia; and United Nations Children's Fund, 1991), p. 33, table 9.

IRAQ IMMUNIZATION, DIARRHOEAL DISEASE, MATERNAL AND CHILD
MORTALITY SURVEY, MAY-JUNE 1990
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.093	0.053	1989.5	63	86
20-24	1.087	0.046	1988.5	45	58
25-29	2.935	0.061	1986.8	52	68
30-34	..	0.053	1984.6	43	55
35-39	..	0.075	1982.2	54	72
40-44	..	0.089	1979.7	59	79
45-49	..	0.102	1976.7	61	82

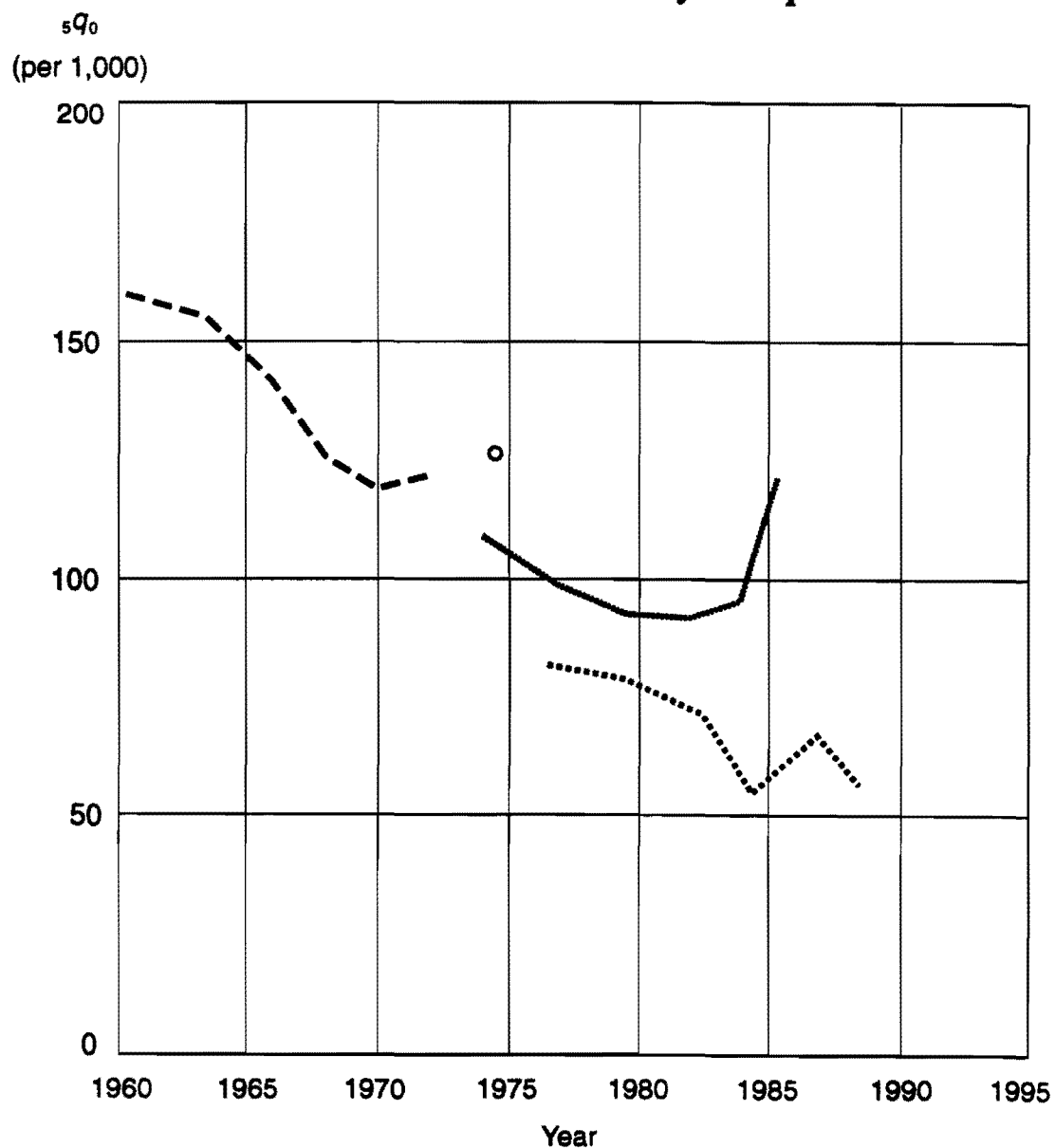
Source: Iraq Immunization, Diarrhoeal Disease, Maternal and Childhood Mortality Survey, 1990, Evaluation Series, No. 9, Report on the EPI/CDD/Mortality Survey Iraq, May-June 1990 (Baghdad, Ministry of Health, in collaboration with World Health Organization; United Nations, Economic and Social Commission for Western Asia; and United Nations Children's Fund, 1991), pp. 31 and 33, tables 7A, 7B and 9.

Infant mortality: Iraq



- Demographic Sample Survey/Sample Registration, 1974 (direct)
- Fertility Survey, 1974 (indirect)
- Census, 1987 (indirect)
- Iraq Immunization, Diarrhoeal Disease, Maternal and Child Mortality Survey, 1990 (indirect)

Under-five mortality: Iraq



- Demographic Sample Survey/Sample Registration, 1974 (direct)
- - Fertility Survey, 1974 (indirect)
- Census, 1987 (indirect)
- Iraq Immunization, Diarrhoeal Disease, Maternal and Child Mortality Survey, 1990 (indirect)

ISRAEL

Vital registration

Registration of births and deaths is reported to be complete. As of 1970, the data include East Jerusalem.

Censuses

Brass questions have not been included in the Israeli censuses.

Sample surveys

No relevant data are available.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	31	1970	24	1980	16
1961	29	1971	23	1981	16
1962	33	1972	24	1982	14
1963	28	1973	23	1983	14
1964	28	1974	24	1984	13
1965	27	1975	23	1985	12
1966	26	1976	20	1986	11
1967	26	1977	18	1987	11
1968	25	1978	17	1988	10
1969	24	1979	17		

Sources: Israel, *Vital Statistics, 1973-1976* (Jerusalem, Central Bureau of Statistics, 1978); and *Statistical Abstract of Israel, 1989*, No. 40 (Jerusalem, Central Bureau of Statistics, 1989).

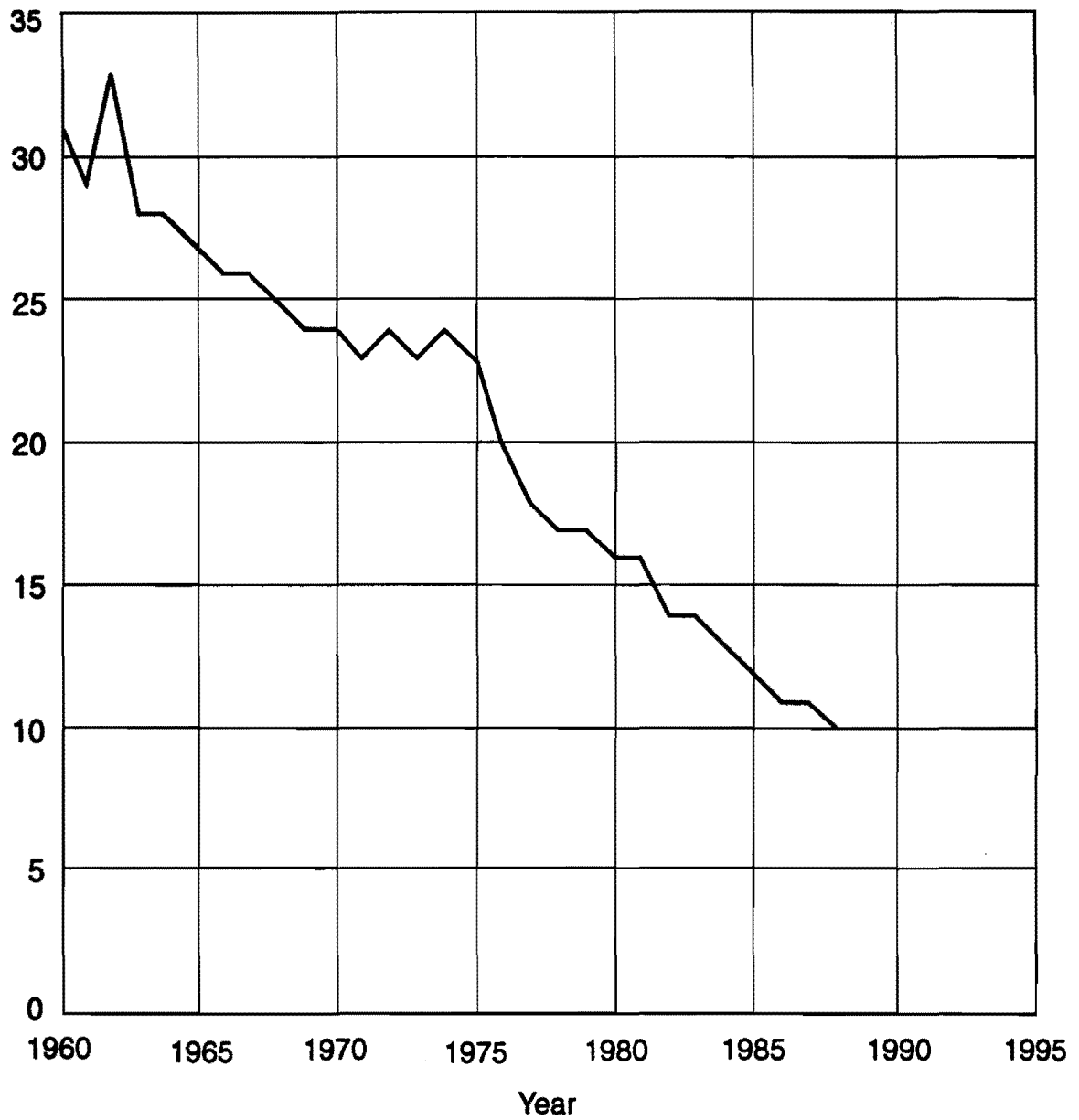
INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>		<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>190</i>	<i>190</i>		<i>190</i>	<i>190</i>
1969	24	28	1979	..	..
1970	24	27	1980	15	18
1971	22	26	1981	16	18
1972	22	26	1982	14	17
1973	23	27	1983	15	17
1974	..	..	1984	13	16
1975	23	27	1985	12	14
1976	21	24	1986	11	14
1977	18	21	1987	12	14
1978	17	20	1988	10	12

Source: Data provided to the United Nations Statistical Office.

Infant mortality: Israel

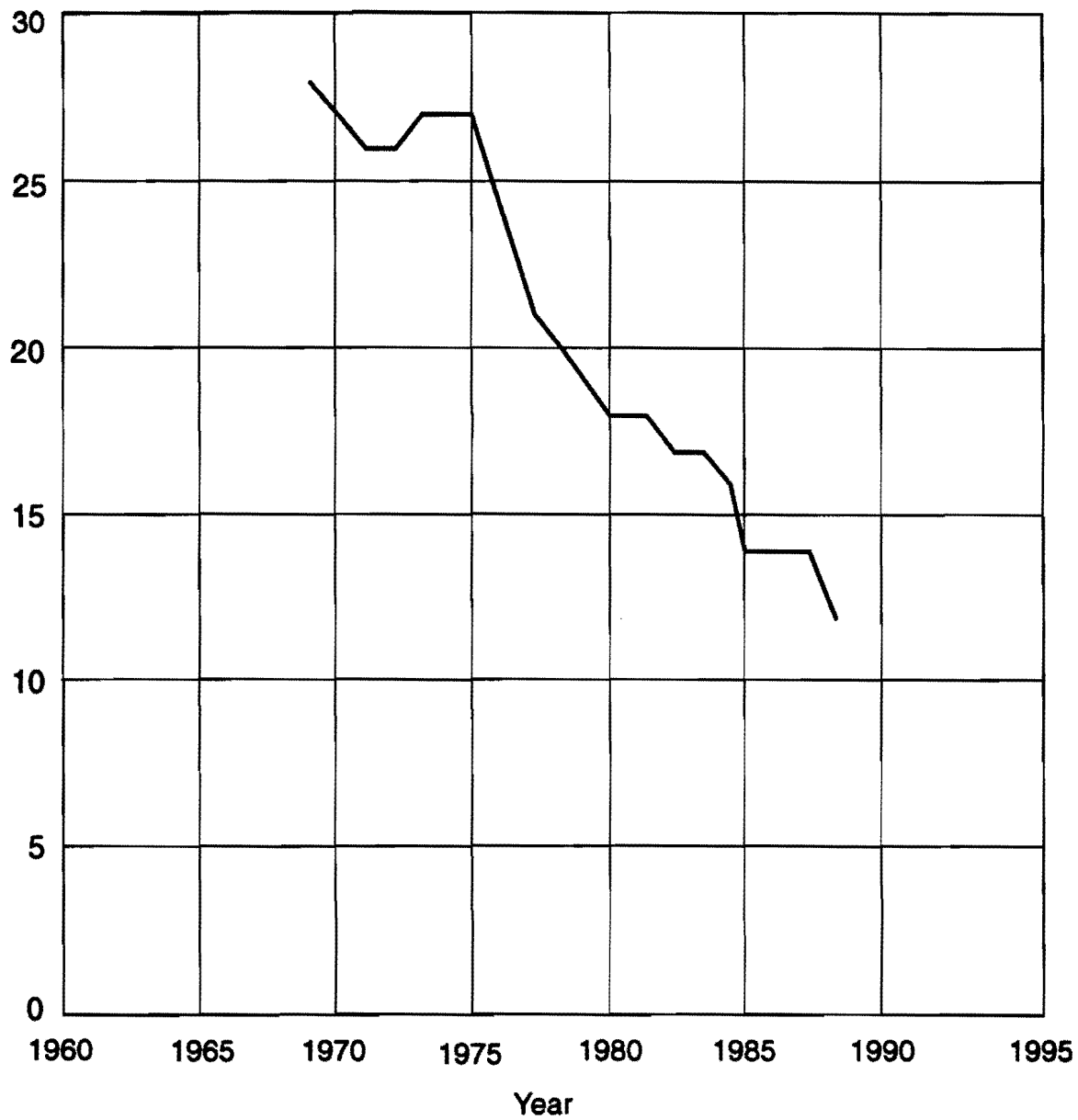
‰
(per 1,000)



— Vital registration

Under-five mortality: Israel

sQ_0
(per 1,000)



— Life-tables

JAMAICA

Vital registration

Registration of births and deaths is reported to be complete, although some omission of infant deaths appears likely.

Censuses

Brass questions were included in the 1982 census. Published data on women by number of children born alive and children living exclude women that were attending primary and secondary school full time.

Sample surveys

Maternity histories were collected in 1975-1976 by the Jamaica Fertility Survey (WFS), and truncated maternity histories were collected by the Jamaica Contraceptive Prevalence Survey (CPS) of 1989.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	51	1969	33	1978	16
1961	49	1970	32	1979	15
1962	..	1971	27	1980	12
1963	51	1972	31	1981	11
1964	38	1973	26	1982	10
1965	39	1974	26	1983	12
1966	35	1975	23	1984	13
1967	31	1976	20		
1968	35	1977	15		

Sources: Jamaica, *Demographic Statistics, 1983 and 1989* (Kingston, The Statistical Institute of Jamaica, 1984, 1990); and data provided to the United Nations Statistical Office.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1980</i>
1959-1961	56	74

Source: *Demographic Yearbook, 1974* (United Nations publication, Sales No. E/F.75.XIII.1), pp. 1068-1069, table 35.

JAMAICA FERTILITY SURVEY, NOVEMBER 1975-JANUARY 1976
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1961-1965	49	64
1966-1970	40	55
1971-1975	43	56

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands International Statistical Institute, 1983), p. 119.

JAMAICA FERTILITY SURVEY, NOVEMBER 1975-JANUARY 1976
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.270	0.044	1975.1	50	65
20-24	1.610	0.050	1973.6	45	57
25-29	2.840	0.052	1971.2	42	54
30-34	4.110	0.057	1968.5	44	55
35-39	5.080	0.079	1965.4	54	72
40-44	5.400	0.095	1962.4	59	80
45-49	5.531	0.102	1959.5	58	77

Source: World Fertility Survey standard recode tapes.

CENSUS, 8 JUNE 1982
(Indirect estimates, West model)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.216	0.055	1981.2	53	70
20-24	1.012	0.044	1979.8	39	49
25-29	1.914	0.043	1977.8	36	45
30-34	2.912	0.051	1975.5	40	51
35-39	3.817	0.065	1972.9	47	61
40-44	4.439	0.095	1970.3	61	82
45-49	4.673	0.120	1967.4	69	94

Source: *Demographic Yearbook, 1986* (United Nations publication, Sales No. E/F.87.XIII.1), pp. 200-201, 1050-1051 and 1130-1131, tables 7, 50 and 51.

^a Assuming women attending primary or secondary school full time have zero parity.

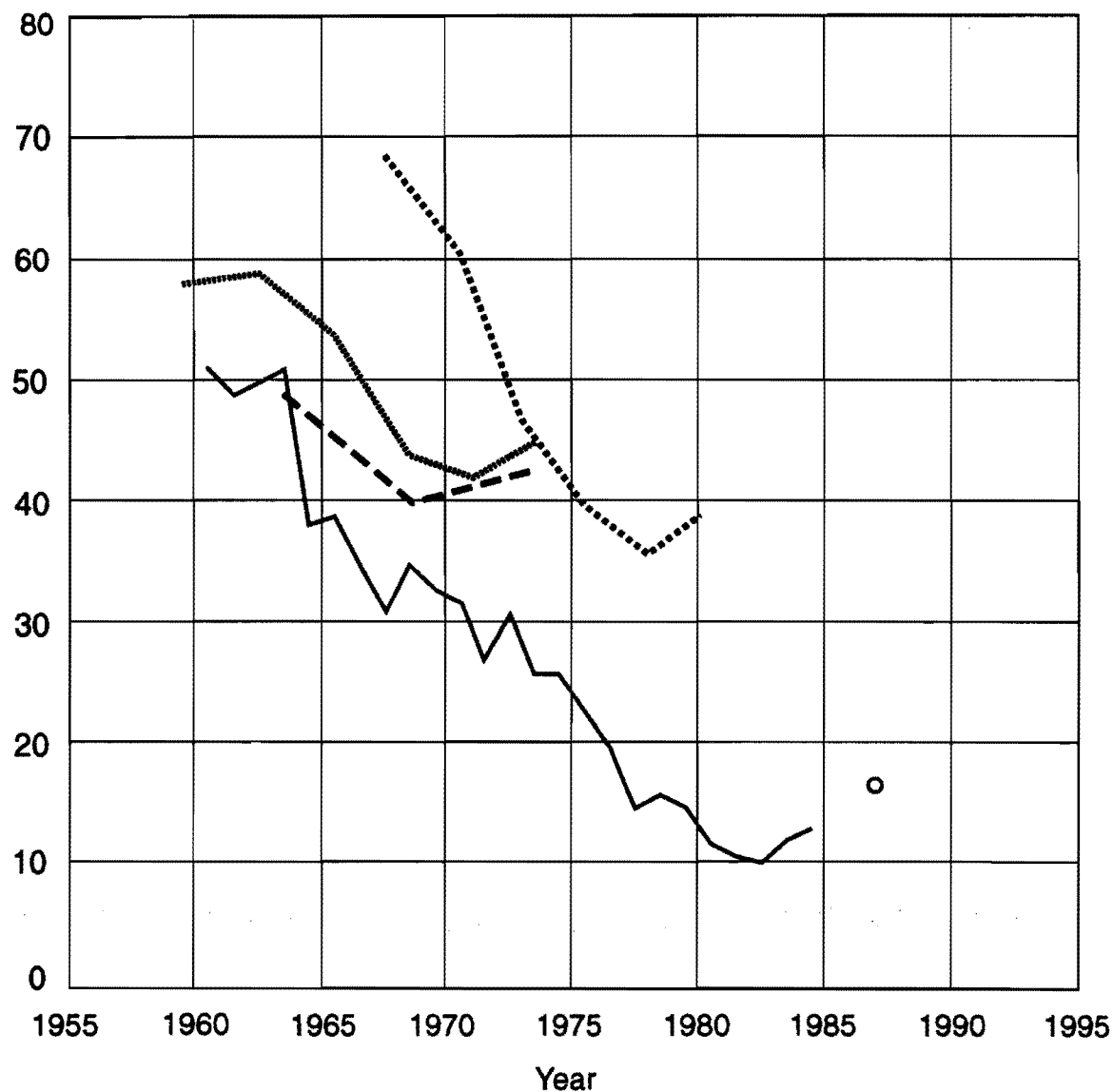
CONTRACEPTIVE PREVALENCE SURVEY, JAMAICA, 1989
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1984-1989	17	20

Source: *Contraceptive Prevalence Survey, Jamaica, 1989, Final Report* (Kingston, National Family Planning Board, 1990), pp. 68-69.

Infant mortality: Jamaica

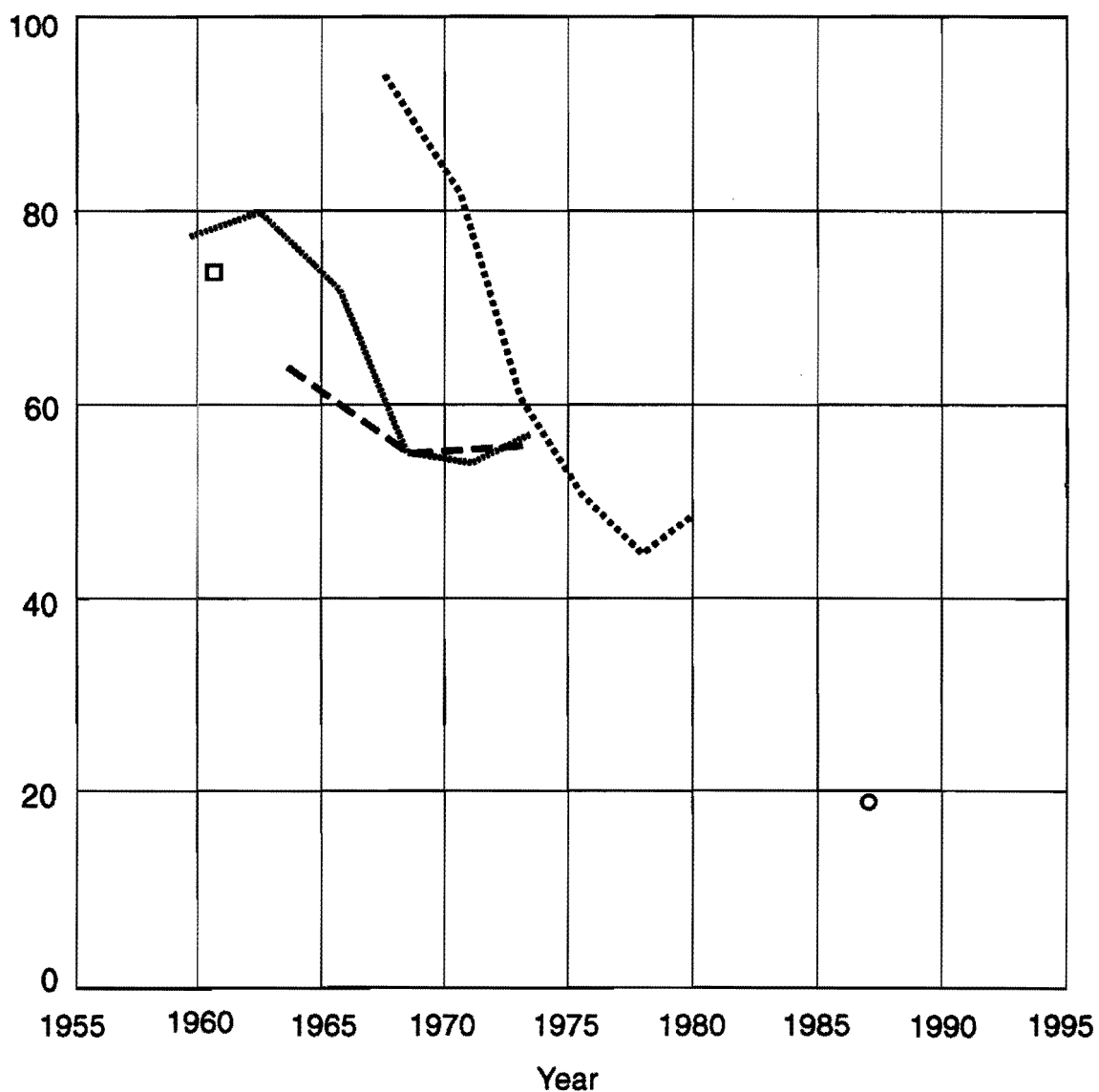
${}_1q_0$
(per 1,000)



- Vital registration
- - Jamaica Fertility Survey, 1975/76 (direct)
- Jamaica Fertility Survey, 1975/76 (indirect)
- Census, 1982 (indirect)
- o Contraceptive Prevalence Survey, Jamaica, 1989 (direct)

Under-five mortality: Jamaica

${}_5q_0$
(per 1,000)



- Life-tables
- — Jamaica Fertility Survey, 1975/76 (direct)
- Jamaica Fertility Survey, 1975/76 (indirect)
- Census, 1982 (indirect)
- Contraceptive Prevalence Survey, Jamaica, 1989 (direct)

JORDAN

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1979 census.

Sample surveys

Maternity histories were collected in 1976 by the Jordan Fertility Survey (WFS). Brass questions were included in the National Fertility Survey in Jordan in 1972, the household questionnaire of the Jordan Fertility Survey (WFS) in 1976, the Jordan Demographic Survey in 1981 and the Jordan EPI/CDD and Child Mortality Survey in 1988 and 1990.

NATIONAL FERTILITY SURVEY IN JORDAN, JANUARY 1972
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.234	0.071	1971.1	79	111
20-24	1.756	0.074	1969.9	67	92
25-29	4.051	0.112	1968.0	87	123
30-34	5.860	0.116	1965.8	84	118
35-39	7.265	0.126	1963.4	85	119
40-44	8.140	0.162	1960.7	99	143
45-49	7.782	..	..	..	..

Source: Kamel Abu Jaber and others, "Levels and trends of fertility and mortality in Jordan", in *Levels and Trends of Fertility and Mortality in Selected Arab Countries of West Asia*, Kamel Abu Jaber, ed., papers presented at a symposium, Amman, 31 March-1 April 1979 (Amman, University of Jordan, 1980), p. 20, table 11.

JORDAN FERTILITY SURVEY, JULY-SEPTEMBER 1976
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1961-1966	82	124
1966-1971	69	93
1971-1976	66	80

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 50.

JORDAN FERTILITY SURVEY, HOUSEHOLD SURVEY, JULY-SEPTEMBER 1976
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.17	0.087	1975.8	102	146
20-24	1.52	0.091	1974.6	82	115
25-29	3.55	0.094	1972.7	74	103
30-34	5.62	0.114	1970.4	82	116
35-39	7.22	0.140	1967.9	93	132
40-44	8.09	0.174	1965.1	106	153
45-49	8.42	0.208	1962.1	115	168

Source: Abdallah Abdel-Aziz, *Evaluation of the Jordan Fertility Survey, 1976*, World Fertility Survey Scientific Reports, No. 42 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 17 and 24, tables 11 and 20.

CENSUS, 10 NOVEMBER 1979
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.150	0.064	1979.0	74	102
20-24	1.339	0.070	1977.8	65	88
25-29	3.332	0.075	1976.1	62	84
30-34	5.253	0.088	1974.0	66	91
35-39	6.843	0.106	1971.6	73	101
40-44	7.748	0.135	1968.9	85	120
45-49	8.010	0.174	1965.9	98	141

Source: Jordan, *Results of Housing and Population Census, 1979*, vol. 2, part two, *East Bank: Population Characteristics* (Amman, Department of Statistics, 1983), pp. 29, 694-698 and 761-763, tables 21, P5.01 and P5.05.

JORDAN DEMOGRAPHIC SURVEY, DECEMBER 1981
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.102	0.060	1981.1	71	98
20-24	1.179	0.066	1980.1	63	85
25-29	3.326	0.074	1978.5	62	83
30-34	5.384	0.081	1976.5	62	84
35-39	7.036	0.098	1974.2	69	95
40-44	8.090	0.125	1971.6	80	112
45-49	8.400	0.146	1968.6	85	120

Source: Abdallah Abdel-Aziz and others, *Jordan Demographic Survey, 1981: Principal Report* (Amman, Department of Statistics, 1983), p. 129, table XVI.

JORDAN EPI/CDD AND CHILD MORTALITY SURVEY, MAY-JUNE 1988
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.101	0.028	1987.5	33	40
20-24	1.153	0.034	1986.5	35	43
25-29	3.218	0.054	1984.9	47	61
30-34	5.231	0.050	1982.9	41	52
35-39	6.984	0.062	1980.6	47	60
40-44	8.303	0.083	1978.0	56	74
45-49	8.968	0.099	1974.9	60	80

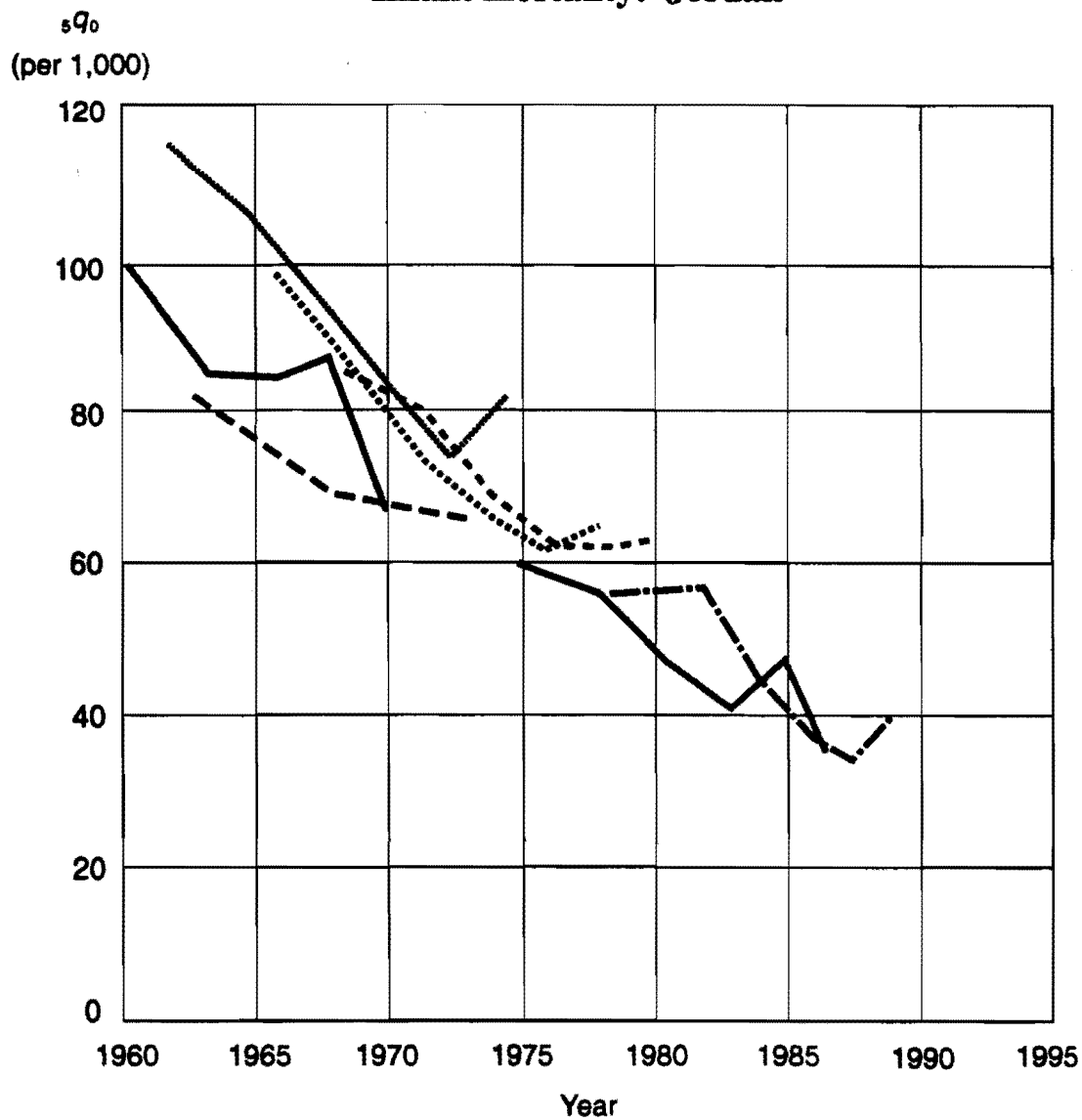
Source: Patricia H. David, "Jordan childhood mortality survey, 1988 EPI/CDD review, final report", London, London School of Hygiene and Tropical Medicine, Department of Epidemiology and Population Studies, 1988, p. 18, table 4.

JORDAN EPI/CDD AND CHILD MORTALITY SURVEY, OCTOBER 1990
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.077	0.063	1989.7	68	93
20-24	0.716	0.040	1988.8	40	50
25-29	2.363	0.037	1987.5	34	42
30-34	4.802	0.044	1985.9	37	46
35-39	6.155	0.058	1984.0	45	58
40-44	7.723	0.082	1981.8	57	75
45-49	8.253	0.088	1978.7	56	74

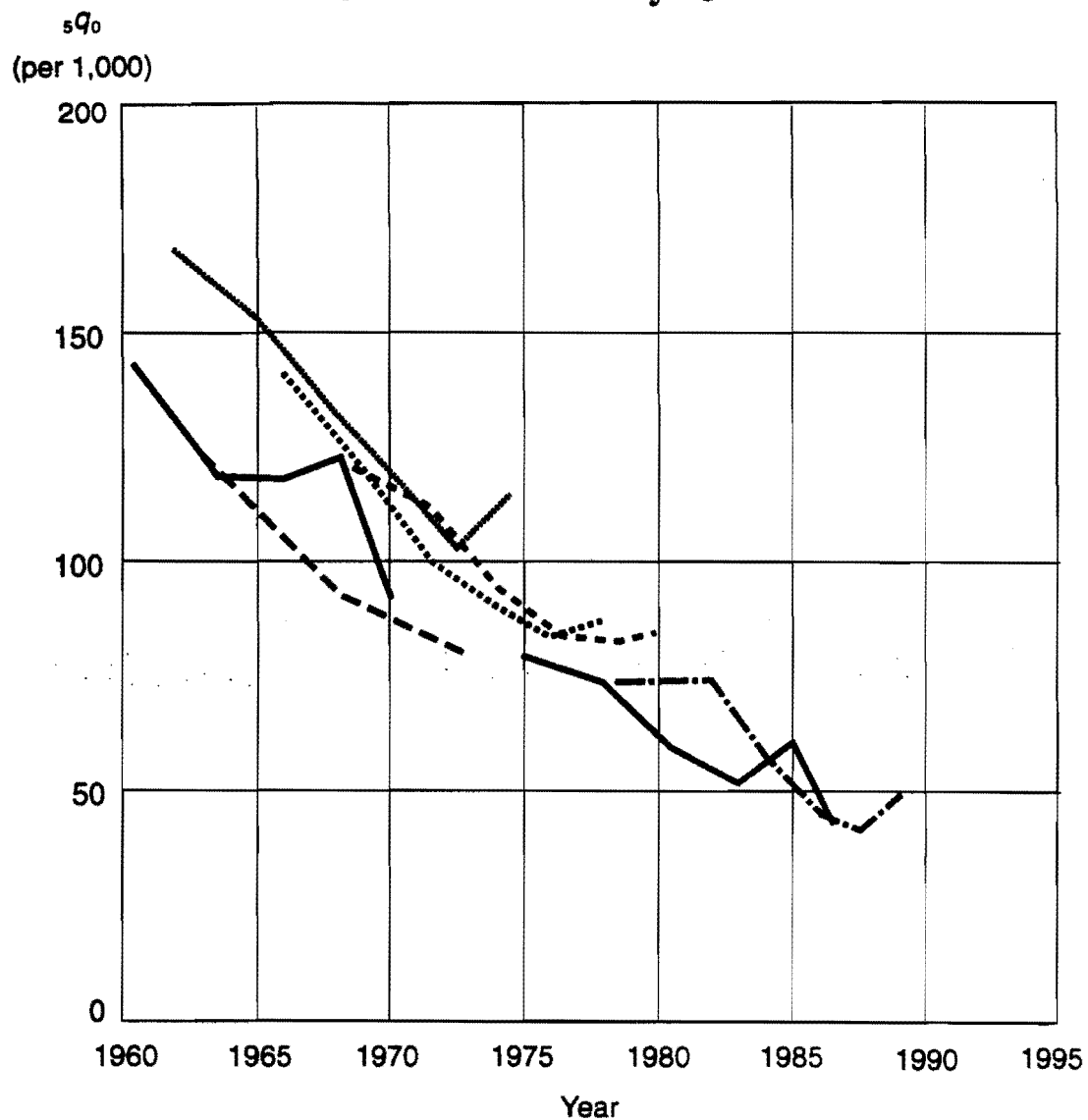
Source: Jordan EPI/CDD and Child Mortality Survey, 1990 (Amman, Ministry of Health, Department of Statistics; and United Nations Children's Fund-Jordan, 1991), p. 18, table 14.

Infant mortality: Jordan



- National Fertility Survey in Jordan, 1972 (indirect)
- - Jordan Fertility Survey, 1976 (direct)
- Jordan Fertility Survey, 1976 (indirect)
- Census, 1979 (indirect)
- - - Jordan Demographic Survey, 1981 (indirect)
- Jordan EPI/CDD and Child Mortality Survey, 1988 (indirect)
- Jordan EPI/CDD and Child Mortality Survey, 1990 (indirect)

Under-five mortality: Jordan



- National Fertility Survey in Jordan, 1972 (indirect)
- - Jordan Fertility Survey, 1976 (direct)
- Jordan Fertility Survey, 1976 (indirect)
- Census, 1979 (indirect)
- - - Jordan Demographic Survey, 1981 (indirect)
- Jordan EPI/CDD and Child Mortality Survey, 1988 (indirect)
- Jordan EPI/CDD and Child Mortality Survey, 1990 (indirect)

KENYA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1962, 1969, 1979 and 1989 censuses. In 1962, the questions were asked in a sample post-enumeration survey that did not cover the sparsely inhabited northern districts, the populations of which comprised only some 5 per cent of the national total. In 1969, the questions were asked on a sample basis. Results for 1989 are not yet available. The data from 1962 have not been included as they refer to time periods before that covered in this study.

Sample surveys

Maternity histories were included in the Kenya Fertility Survey (WFS) of 1977-1978 and the Kenya Demographic and Health Survey (DHS) of 1989. Brass questions were included in the National Demographic Survey in 1977 and 1983. The results of the 1983 survey may have been biased because funding problems prevented the full enumeration of all the selected sample areas. The WFS and DHS surveys excluded the sparsely populated northern districts.

CENSUS, 24-25 AUGUST 1969
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1969
15-19	0.355	0.128	1968.5	127	214
20-24	1.882	0.146	1967.2	111	185
25-29	3.653	0.174	1965.3	112	187
30-34	5.112	0.202	1963.0	117	196
35-39	6.002	0.231	1960.6	123	207
40-44	6.441	0.263	1957.9	129	218
45-49	6.687	0.304	1955.0	137	232

Source: Kenya, 1969 Population Census, vol. IV, *Analytical Report* (Nairobi, Ministry of Finance and Planning, Central Bureau of Statistics, n.d.), pp. 28 and 43, tables 4.8 and 5.1.

NATIONAL DEMOGRAPHIC SURVEY, JANUARY 1977
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1969
15-19	0.33	0.115	1975.9	115	193
20-24	1.83	0.109	1974.6	86	138
25-29	3.72	0.125	1972.8	84	135
30-34	5.55	0.158	1970.7	95	155
35-39	6.67	0.177	1968.2	98	160
40-44	7.25	0.209	1965.6	105	174
45-49	7.46	0.247	1962.8	112	187

Source: Kenya Fertility Survey, 1977-1978: *First Report*, vol. 1 (Nairobi, Ministry of Economic Planning and Development, Central Bureau of Statistics, 1980), pp. 85 and 104, tables 5.2 and 5.14.

KENYA FERTILITY SURVEY, AUGUST 1977-MAY 1978
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1963-1968	102	167
1968-1973	99	164
1973-1978	87	142

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 38.

KENYA FERTILITY SURVEY, AUGUST 1977-MAY 1978
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.35	0.101	1976.9	98	160
20-24	1.84	0.130	1975.6	100	164
25-29	3.76	0.144	1973.8	96	156
30-34	5.55	0.157	1971.7	95	155
35-39	6.82	0.174	1969.4	97	158
40-44	7.59	0.189	1966.8	97	158
45-49	7.88	0.236	1964.0	108	179

Source: *Kenya Fertility Survey, 1977-1978: First Report*, vol. 1 (Nairobi, Ministry of Economic Planning and Development, Central Bureau of Statistics, 1980), pp. 85 and 104, tables 5.2 and 5.14.

CENSUS, 24-25 AUGUST 1979
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.321	0.116	1978.6	121	204
20-24	1.852	0.125	1977.3	97	158
25-29	3.580	0.141	1975.3	93	151
30-34	5.388	0.166	1973.0	98	160
35-39	6.470	0.185	1970.4	100	164
40-44	7.020	0.217	1967.6	107	178
45-49	7.172	0.253	1964.7	113	189

Source: *Kenya, 1979 Population Census*, vol. II, *Analytical Report* (Nairobi, Central Bureau of Statistics, Ministry of Finance and Planning, n.d.), p. 89, table 7.1.

KENYA NATIONAL DEMOGRAPHIC SURVEY, 1983
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.293	0.099	1982.4	103	170
20-24	1.751	0.100	1981.1	80	128
25-29	3.558	0.111	1979.3	76	120
30-34	5.362	0.132	1977.0	81	129
35-39	6.655	0.148	1974.6	83	133
40-44	7.426	0.173	1971.9	88	142
45-49	7.647	0.203	1969.0	93	152

Source: Unpublished tabulations provided by the Central Bureau of Statistics, Kenya.

KENYA DEMOGRAPHIC AND HEALTH SURVEY, OCTOBER 1988-MAY 1989
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1974-1978	64	106
1979-1983	58	93
1984-1989*	60	89

Source: Kenya Demographic and Health Survey, 1989 (Nairobi, Ministry of Home Affairs and National Heritage, National Council for Population and Development; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 56, table 6.1.

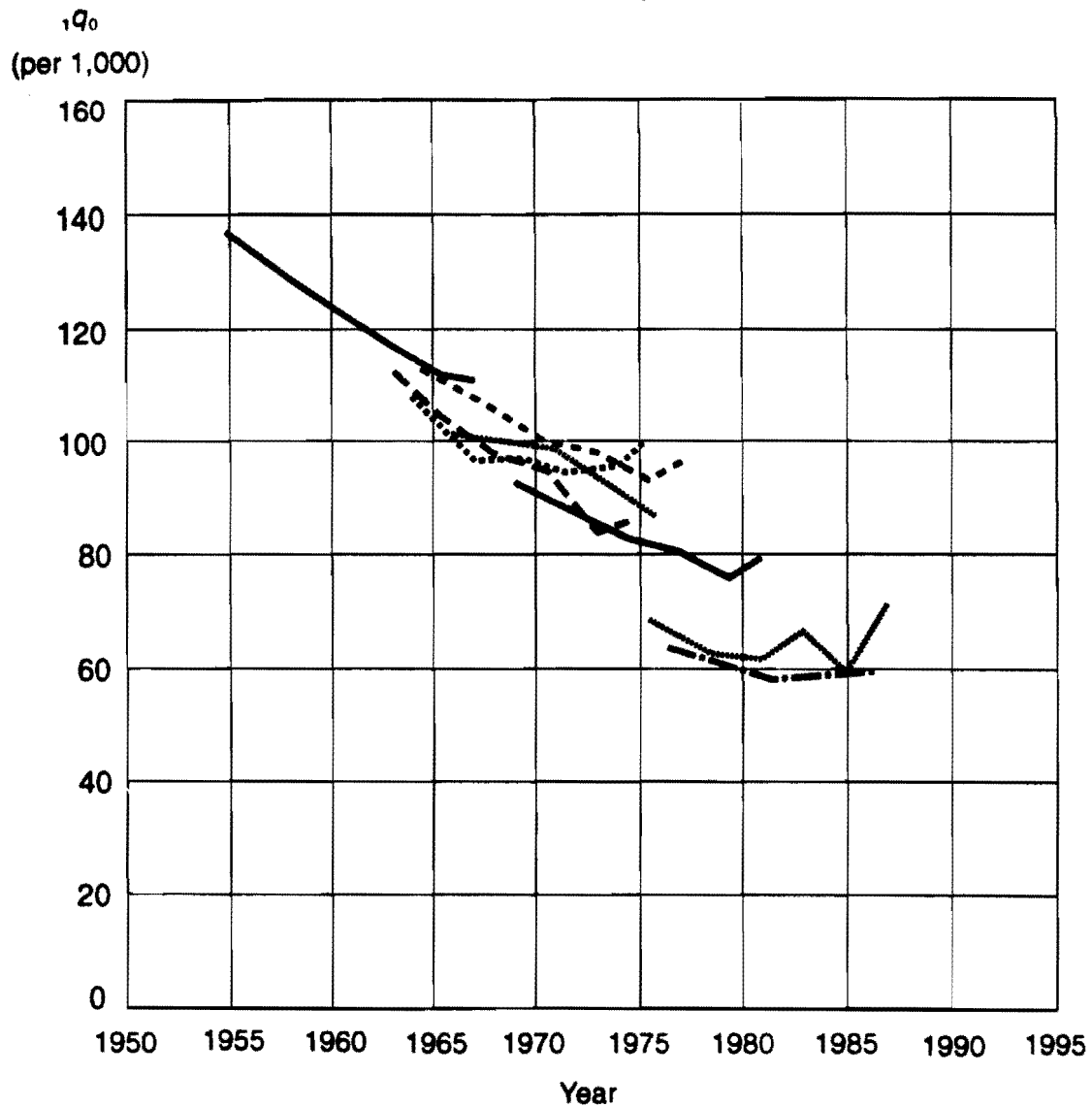
* Including events occurring in 1989 up to the month preceding the date of interview.

KENYA DEMOGRAPHIC AND HEALTH SURVEY, OCTOBER 1988-MAY 1989
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.28	0.117	1988.0	115	192
20-24	1.58	0.088	1986.8	72	112
25-29	3.47	0.082	1985.2	59	90
30-34	5.01	0.104	1983.2	67	104
35-39	6.48	0.104	1980.9	62	96
40-44	7.36	0.114	1978.5	63	96
45-49	7.63	0.142	1975.6	69	107

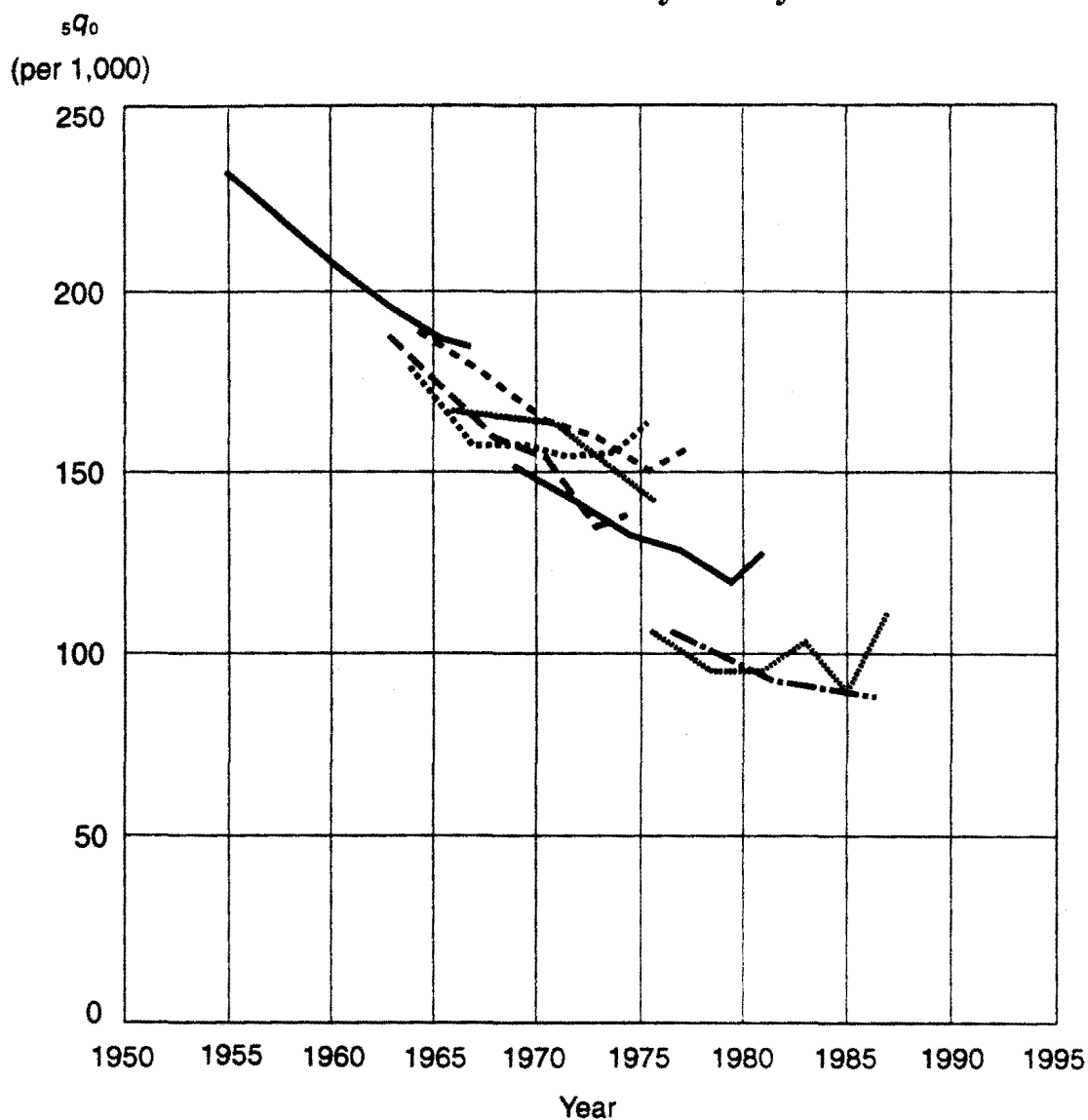
Source: Kenya Demographic and Health Survey, 1989 (Nairobi, Ministry of Home Affairs and National Heritage, National Council for Population and Development; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 60, table 6.4.

Infant mortality: Kenya



- Census, 1969 (Indirect)
- - National Demographic Survey, 1977 (Indirect)
- Kenya Fertility Survey, 1978 (direct)
- Kenya Fertility Survey, 1978 (indirect)
- - - Census, 1979 (Indirect)
- Kenya National Demographic Survey, 1983 (Indirect)
- Kenya Demographic and Health Survey, 1989 (direct)
- Kenya Demographic and Health Survey, 1989 (Indirect)

Under-five mortality: Kenya



- Census, 1969 (indirect)
- - National Demographic Survey, 1977 (indirect)
- Kenya Fertility Survey, 1978 (direct)
- Kenya Fertility Survey, 1978 (indirect)
- - - Census, 1979 (indirect)
- Kenya National Demographic Survey, 1983 (indirect)
- Kenya Demographic and Health Survey, 1989 (direct)
- Kenya Demographic and Health Survey, 1989 (indirect)

KUWAIT

Vital registration

Registration of births and deaths is reported to be complete since the mid-1970s.

Censuses

Brass questions were included in the 1975 and 1980 censuses. Data from the 1980 census were only published by duration of marriage. Questions on children ever born and children surviving were asked of a 20 per cent sample of Kuwaiti women in the 19 April 1970 census, but the data were not available for this report.

Sample surveys

No relevant data are available.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1965	40	1973	44	1981	24
1966	40	1974	44	1982	23
1967	33	1975	39	1983	19
1968	36	1976	34	1984	18
1969	33	1977	39	1985	18
1970	39	1978	32	1986	16
1971	37	1979	31		
1972	38	1980	28		

Sources: Kuwait, *Annual Statistical Abstract, 1975, 1980, 1983 and 1989* (Kuwait, Ministry of Planning, Central Statistical Office, Planning Board, n.d.).

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1980</i>
1974-1976	39	47
1979-1981	28	32
1984-1986	18	21

Source: Calculated by the Population Division of the Department of Economic and Social Development of the United Nations Secretariat, using data provided to the United Nations Statistical Office.

CENSUS, 20-21 APRIL 1975
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.201	0.048	1974.2	51	67
20-24	1.270	0.044	1973.0	42	52
25-29	2.723	0.047	1971.1	40	50
30-34	4.154	0.058	1968.8	46	58
35-39	5.196	0.076	1966.3	54	72
40-44	5.647	0.112	1963.6	71	98
45-49	5.778	0.150	1960.7	85	120

Source: *Demographic Yearbook—Special Issue: Historical Supplement* (United Nations publication, Sales No. E/F.79.XIII.8, 1979), pp. 516 and 1036-1037, tables 7 and 12.

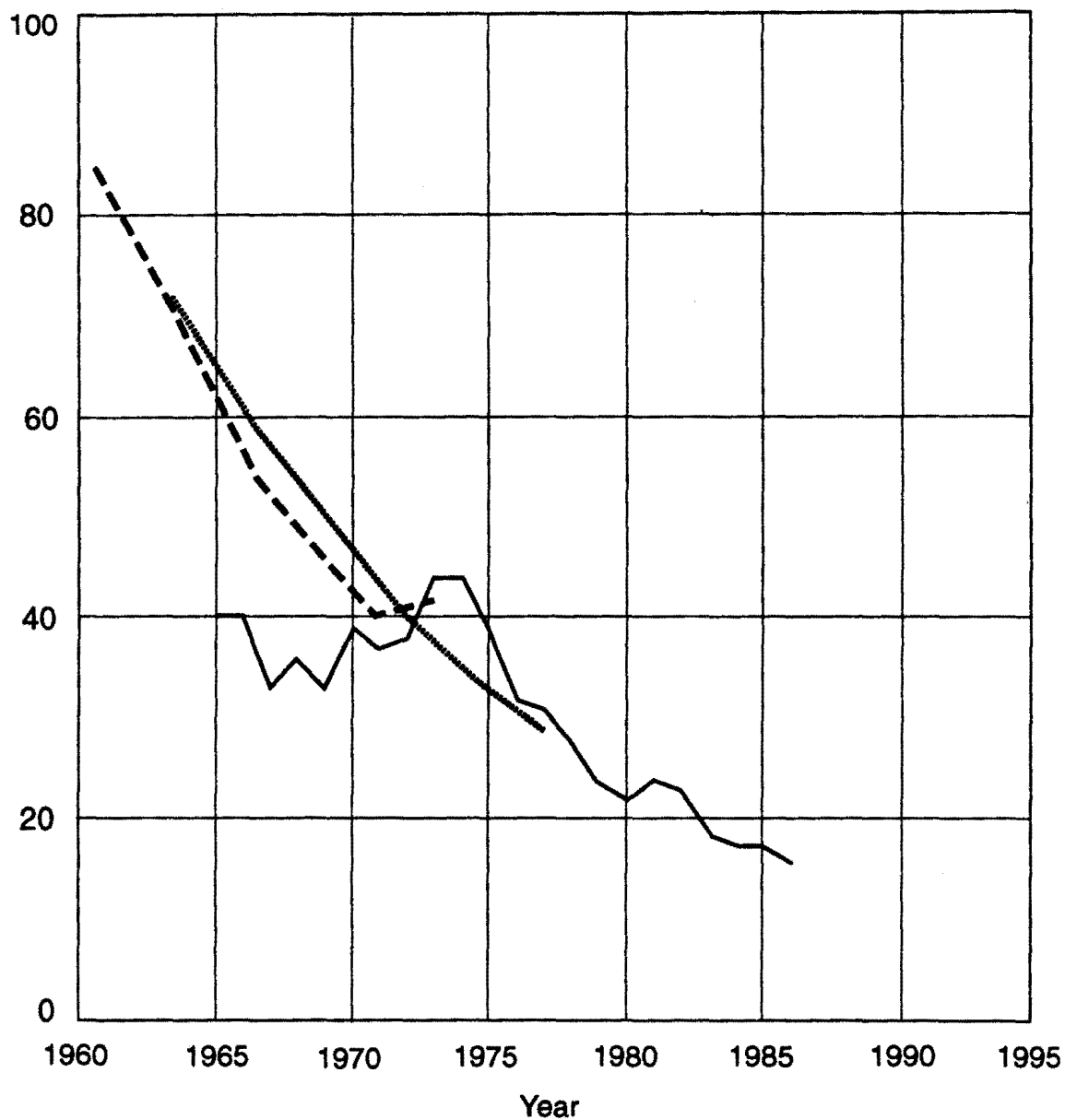
CENSUS, 20-21 APRIL 1980
(Indirect estimates, West model)

Duration of marriage	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
0-4	0.881	0.024	1979.1	26	31
5-9	2.594	0.032	1977.1	29	36
10-14	4.086	0.041	1974.7	34	43
15-19	5.299	0.053	1972.2	40	51
20-24	6.006	0.072	1969.5	49	64
25-29	6.419	0.098	1966.6	59	80
30-34	6.316	0.135	1963.7	72	100

Source: Kuwait, *Annual Statistical Abstract, 1983*, ed. XX (Kuwait, Ministry of Planning, Central Statistical Office, 1983), pp. 54 and 57.

Infant mortality: Kuwait

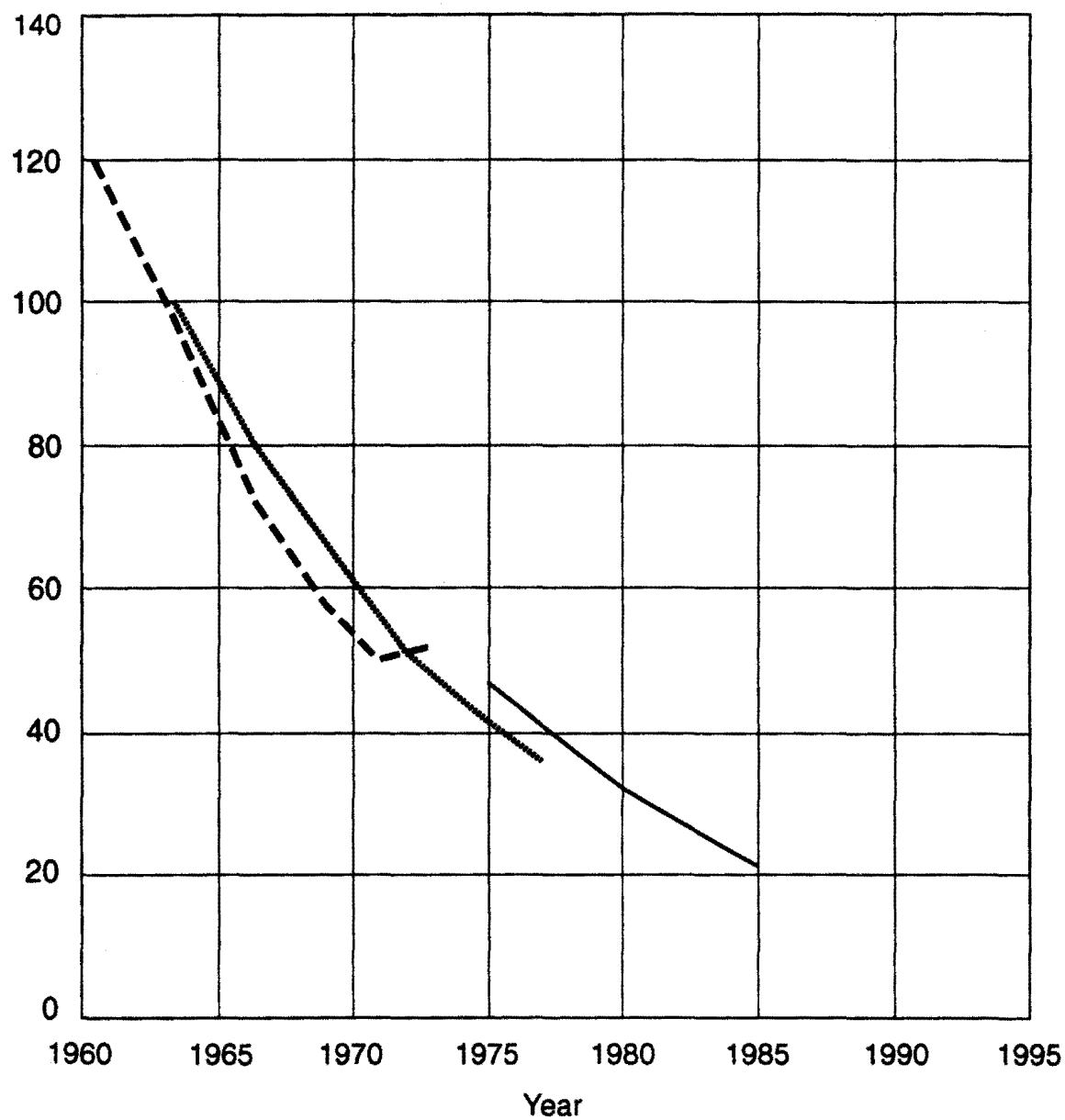
${}_1q_0$
(per 1,000)



— Vital registration
-- Census, 1975 (indirect)
..... Census, 1980 (indirect)

Under-five mortality: Kuwait

${}_5q_0$
(per 1,000)



— Life-tables
-- Census, 1975 (indirect)
..... Census, 1980 (indirect)

LEBANON

Vital registration

Completeness of death registration is not reported.

Censuses

No relevant data are available.

Surveys

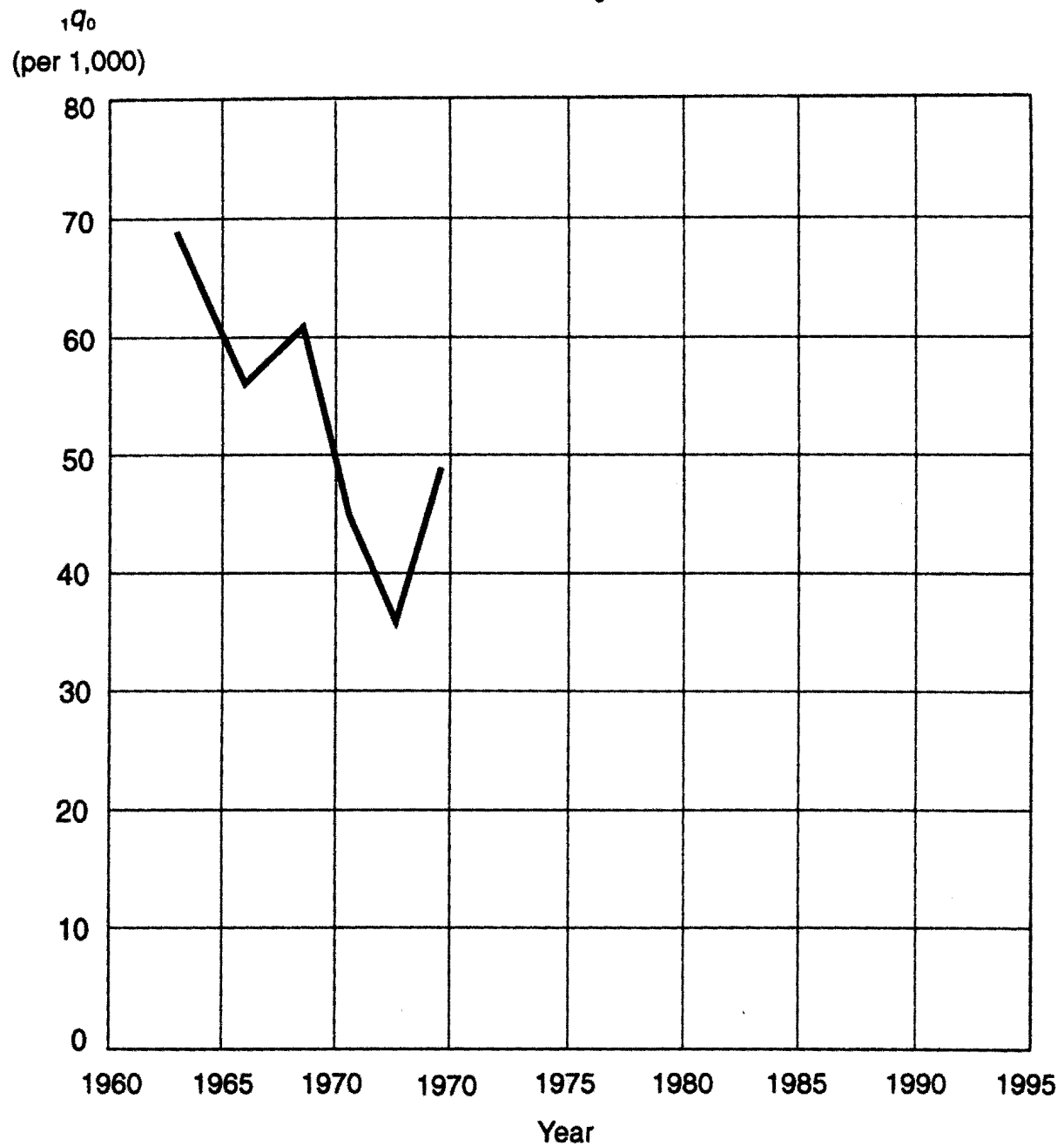
Brass questions were included in the National Fertility and Family Planning Survey of 1971.

NATIONAL FERTILITY AND FAMILY PLANNING SURVEY, 1971
(Indirect estimates, West model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1970</i>
15-19	0.129	0.054	1970.4	58	78
20-24	0.931	0.052	1969.3	49	63
25-29	2.300	0.040	1967.6	36	44
30-34	3.767	0.055	1965.6	45	57
35-39	4.446	0.086	1963.3	61	82
40-44	4.989	0.083	1960.8	56	74
45-49	5.199	0.117	1957.8	69	95

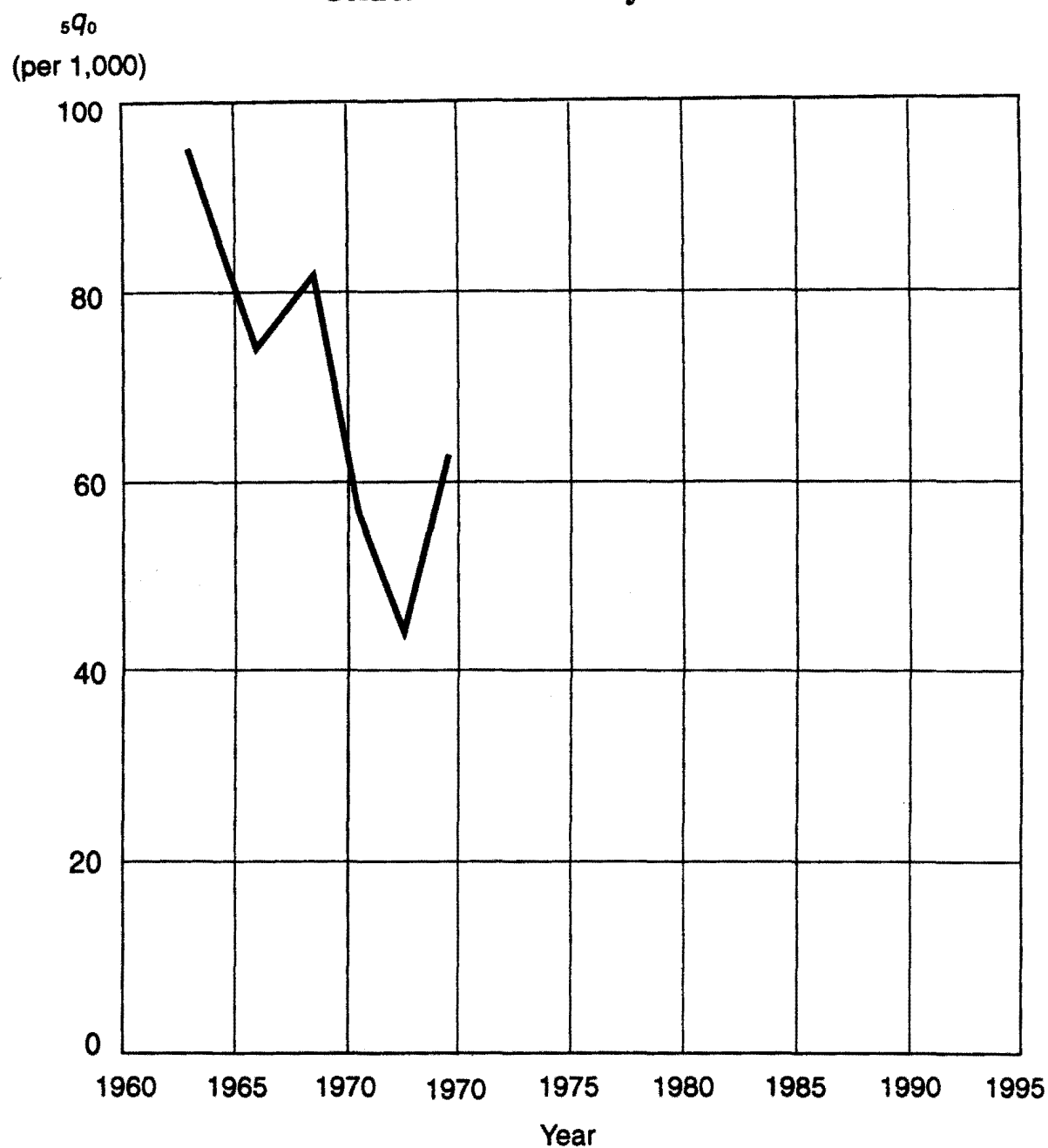
Source: Joseph Chamie, *Religion and Population Dynamics in Lebanon* (Ann Arbor, Michigan, University of Michigan, Population Studies Center, 1977), pp. 3 and 8, table 2.3.

Infant mortality: Lebanon



— National Fertility and Family Planning Survey, 1971 (indirect)

Under-five mortality: Lebanon



— National Fertility and Family Planning Survey, 1971 (indirect)

LESOTHO

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1976 and 1986 censuses, although in 1976 the questions were asked only of every tenth household enumerated. The results of the 1986 census are not yet available.

Sample surveys

Maternity-history data were collected in 1977 by the Lesotho Fertility Survey (WFS), which also asked Brass questions in a larger household survey. Brass questions were included in the Rural Household Consumption and Expenditure Survey (CES) of 1967-1969, the sampling frame for which excluded urban and peri-urban areas, institutions, highly inaccessible villages and certain villages omitted in error, and cattle posts, amounting in all to some 7 per cent of the total population, according to the 1966 census. A multi-round follow-up survey, the Lesotho Demographic Survey (LDS), was conducted in 1971-1972. All households in the selected sample areas were enumerated every six months, and the births and deaths occurring between the rounds were recorded. Brass questions were included in the initial round. The data on current deaths were clearly underreported and have not been included here.

RURAL HOUSEHOLD CONSUMPTION AND EXPENDITURE SURVEY, MARCH 1968-MAY 1969
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1960
15-19	0.122	0.112	1967.9	131	195
20-24	1.081	0.152	1966.6	131	195
25-29	2.432	0.174	1964.7	129	191
30-34	3.624	0.193	1962.3	131	195
35-39	4.355	0.213	1959.7	135	200
40-44	4.751	0.231	1956.9	136	202
45-49	4.768	0.263	1953.9	142	213

Source: A. M. Monyake, *Report on the Demographic Component of the Rural Household Consumption and Expenditure Survey, 1967-1968*, part 2, *Presentation and Analysis of the Data* (Maseru, Lesotho, Bureau of Statistics, 1973), pp. 51 and 60, tables 5.3 and 6.3.

LESOTHO DEMOGRAPHIC SURVEY, MAY 1971
(Indirect estimate, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.115	0.137	1970.5	158	236
20-24	1.009	0.168	1969.3	146	218
25-29	2.437	0.187	1967.5	140	209
30-34	3.661	0.206	1965.3	141	210
35-39	4.636	0.218	1962.9	139	208
40-44	5.162	0.230	1960.2	137	205
45-49	5.053	0.273	1957.2	150	225

Source: Ian Timæus, *Mortality in Lesotho: A Study of Levels, Trends and Differentials Based on Retrospective Survey Data*, World Fertility Survey Scientific Reports, No. 59 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 15, tables 4 and 5.

CENSUS, 12 APRIL 1976
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.153	0.146	1975.4	164	246
20-24	1.055	0.128	1974.0	109	158
25-29	2.132	0.139	1972.0	104	150
30-34	3.428	0.166	1969.5	113	165
35-39	4.207	0.170	1966.7	108	157
40-44	4.649	0.177	1963.9	106	153
45-49	4.720	0.180	1960.9	99	142

Source: Lesotho, *1976 Population Census*, vol. IV, *Analytical Report* (Maseru, Bureau of Statistics, 1981), tables III-8 and III-9.

LESOTHO FERTILITY SURVEY, APRIL-DECEMBER 1977
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1962-1967	148	199
1967-1972	133	185
1972-1977	126	174

Source: Ian Timæus, *Mortality in Lesotho: A Study of Levels, Trends and Differentials Based on Retrospective Survey Data*, World Fertility Survey Scientific Reports, No. 59 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 13, table 3.

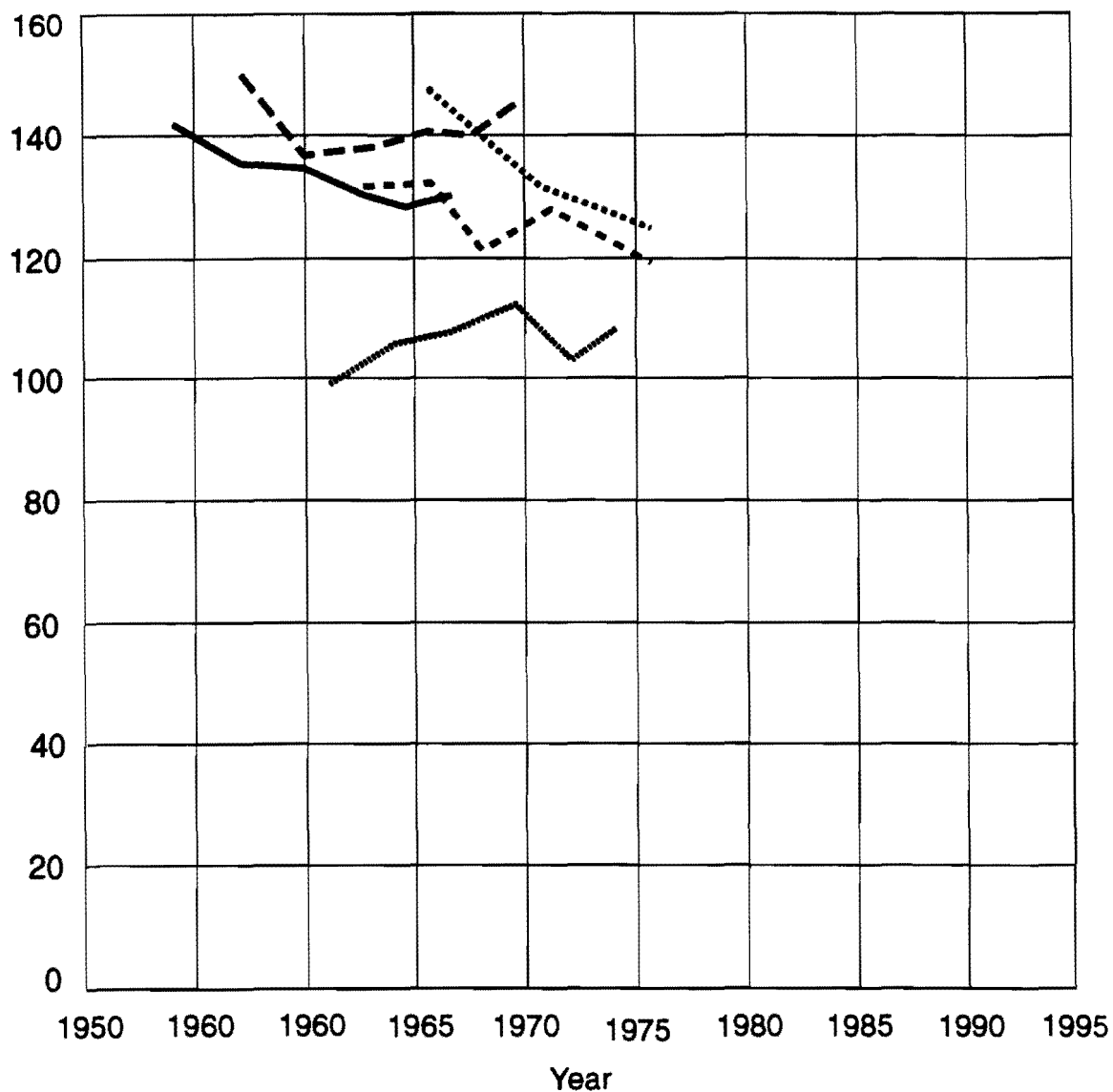
LESOTHO FERTILITY SURVEY, HOUSEHOLD SURVEY, APRIL-DECEMBER 1977
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1965
15-19	0.154	0.126	1976.7	145	217
20-24	1.145	0.140	1975.4	119	175
25-29	2.372	0.169	1973.4	124	183
30-34	3.667	0.192	1970.9	129	191
35-39	4.622	0.192	1968.2	121	178
40-44	5.236	0.227	1965.3	133	197
45-49	5.550	0.245	1962.3	132	195

Source: Ian Timæus, *Mortality in Lesotho: A Study of Levels, Trends and Differentials Based on Retrospective Survey Data*, World Fertility Survey Scientific Reports, No. 59 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 15, tables 4 and 5.

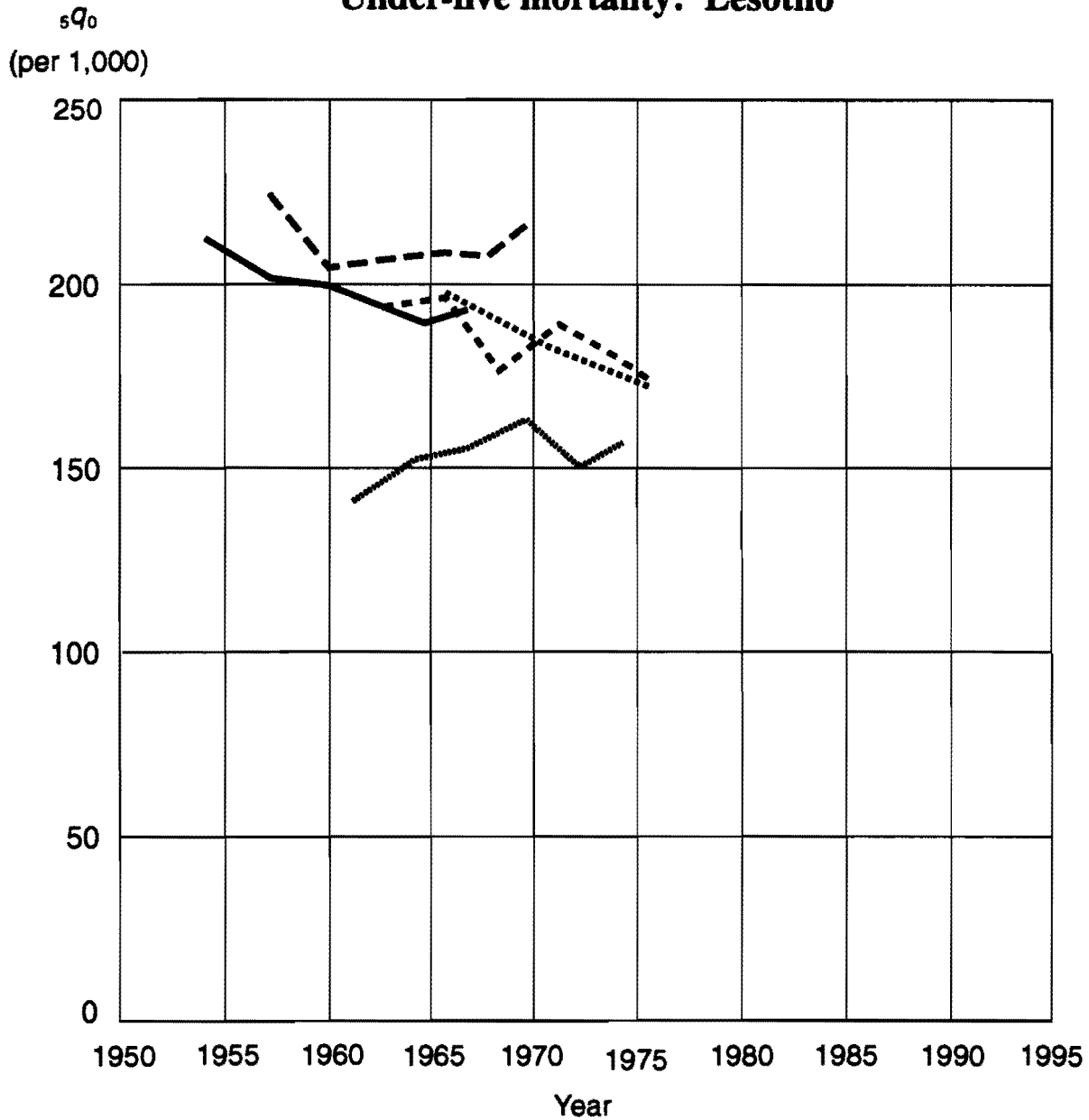
Infant mortality: Lesotho

${}_1q_0$
(per 1,000)



- Rural Household Consumption and Expenditure Survey, 1968 (indirect)
- - Lesotho Demographic Survey, 1971 (indirect)
- Census, 1976 (indirect)
- Lesotho Fertility Survey, 1977 (direct)
- - - Lesotho Fertility Survey, 1977 (indirect)

Under-five mortality: Lesotho



- Rural Household Consumption and Expenditure Survey, 1968 (Indirect)
- - Lesotho Demographic Survey, 1971 (Indirect)
- . - . Census, 1976 (Indirect)
- Lesotho Fertility Survey, 1977 (direct)
- - - Lesotho Fertility Survey, 1977 (Indirect)

LIBERIA

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1974 and 1984 censuses. Results from the 1984 census are not yet available.

Surveys

Maternity histories were collected in 1986 by the Demographic and Health Survey (DHS). The Liberian Population Growth Survey (a dual-record survey including Brass questions in both 1970 and 1971) was carried out in 1969-1971. The direct estimates of infant and child mortality were adjusted for events missed by both systems (monthly visits by registrars and biannual visits by survey supervisors) using the Chandrasekaran-Deming correction.

POPULATION GROWTH SURVEY, MAY 1969-APRIL 1970
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1969	1970
1969-1970	137	197

Source: J. G. C. Blacker, "Dual record demographic surveys: a re-assessment", *Population Studies* (London), vol. 31, No. 3 (November 1977), p. 596, table 9.

POPULATION GROWTH SURVEY, MAY 1969-APRIL 1970
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1969	1970
15-19	0.527	0.224	1968.6	210	313
20-24	1.969	0.249	1966.9	185	277
25-29	2.902	0.268	1964.3	180	269
30-34	3.783	0.278	1961.4	176	263
35-39	4.168	0.311	1958.4	186	278
40-44	4.541	0.335	1955.4	187	280
45-49	4.532	0.378	1952.6	197	295

Source: Abel Z. Massalee, *The Population of Liberia*, Committee for International Cooperation in National Research in Demography (CICRED) Series (Monrovia, Ministry of Planning and Economic Affairs, Population Division, 1974), p. 45, table 34.

POPULATION GROWTH SURVEY, MAY 1970-APRIL 1971
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1970-1971	159	228

Source: J. G. C. Blacker, "Dual record demographic surveys: a re-assessment", *Population Studies* (London), vol. 31, No. 3 (November 1977), p. 596, table 9.

POPULATION GROWTH SURVEY, MAY 1970-APRIL 1971
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.486	0.233	1969.4	193	289
20-24	1.723	0.243	1967.8	184	275
25-29	2.925	0.271	1965.7	190	283
30-34	3.766	0.306	1963.4	202	302
35-39	4.361	0.317	1961.0	199	297
40-44	4.496	0.335	1958.4	197	294
45-49	4.672	0.379	1955.6	208	310

Source: *Demographic Yearbook—Special Issue: Historical Supplements* (United Nations publication, Sales No. E/F.79.XIII.8), p. 492, table 7.

CENSUS, 1 FEBRUARY 1974
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.671	0.115	1972.4	79	111
20-24	1.916	0.166	1970.7	120	176
25-29	2.971	0.207	1968.5	142	212
30-34	3.880	0.236	1966.3	154	231
35-39	4.453	0.252	1963.9	156	234
40-44	4.637	0.290	1961.4	169	253
45-49	4.692	0.312	1958.7	168	251

Source: *1974 Population and Housing Census of Liberia: Population Characteristics of Major Areas* (Monrovia, Ministry of Planning and Economic Affairs, 1977), pp. 65 and 109-110, tables 4, 19 and 20.

LIBERIA DEMOGRAPHIC AND HEALTH SURVEY, FEBRUARY-JULY 1986
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1971-1975	192	275
1976-1980	164	243
1981-1986 ^a	144	220

Source: Dorothy Chieh-Johnson and others, *Liberia Demographic and Health Survey, 1986* (Monrovia, Liberia, Ministry of Planning and Economic Affairs, Bureau of Statistics; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 64, table 6.1.

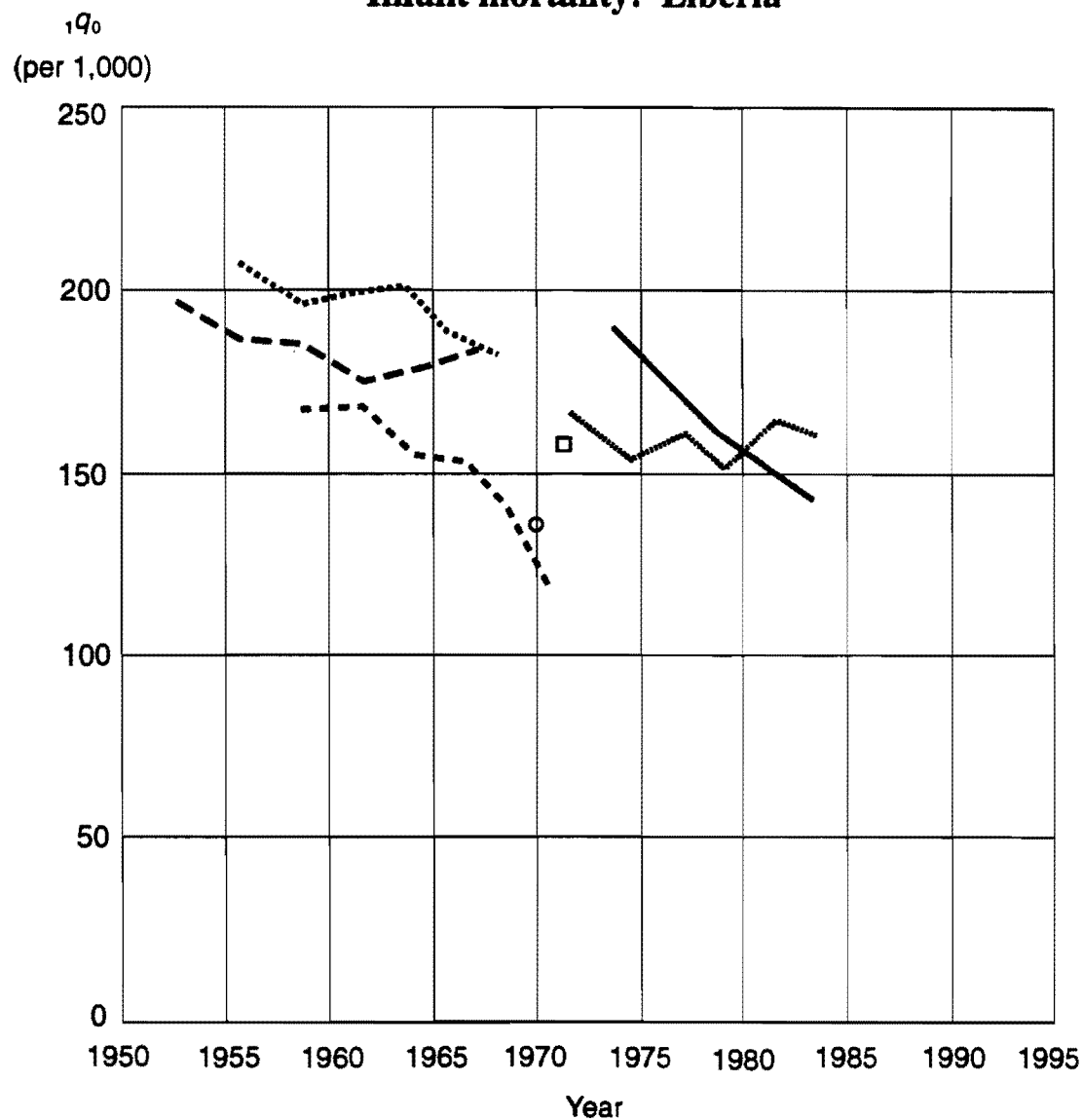
^a Including events occurring in 1986 up to the month preceding the date of interview.

LIBERIA DEMOGRAPHIC AND HEALTH SURVEY, FEBRUARY-JULY 1986
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.5	0.184	1984.9	151	226
20-24	1.8	0.213	1983.4	163	243
25-29	3.2	0.236	1981.4	167	250
30-34	4.2	0.226	1979.2	151	225
35-39	5.3	0.259	1976.8	163	244
40-44	5.9	0.264	1974.3	155	232
45-49	6.8	0.308	1971.5	168	251

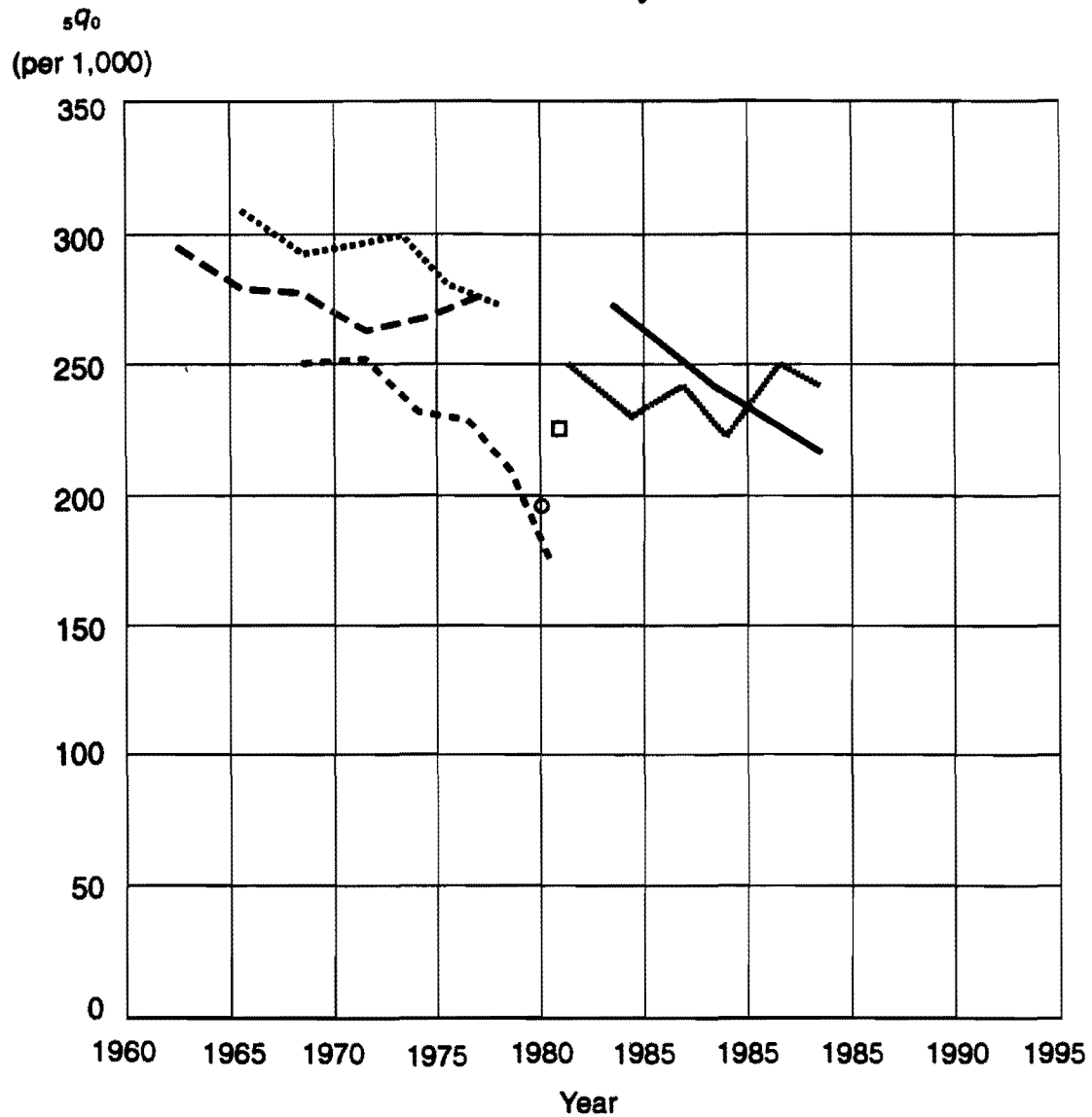
Source: Dorothy Chieh-Johnson and others, *Liberia Demographic and Health Survey, 1986* (Monrovia, Liberia, Ministry of Planning and Economic Affairs, Bureau of Statistics; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 70, table 6.4.

Infant mortality: Liberia



- Population Growth Survey, 1970 (direct)
- — Population Growth Survey, 1970 (indirect)
- Population Growth Survey, 1971 (direct)
- Population Growth Survey, 1971 (indirect)
- - - Census, 1974 (indirect)
- Liberia Demographic and Health Survey, 1986 (direct)
- - - Liberia Demographic and Health Survey, 1986 (indirect)

Under-five mortality: Liberia



- Population Growth Survey, 1970 (direct)
- — Population Growth Survey, 1970 (indirect)
- Population Growth Survey, 1971 (direct)
- Population Growth Survey, 1971 (indirect)
- - - Census, 1974 (indirect)
- Liberia Demographic and Health Survey, 1986 (direct)
- Liberia Demographic and Health Survey, 1986 (indirect)

LIBYAN ARAB JAMAHIRIYA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1973 census.

Sample surveys

No relevant information are available.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1972	80	1977	47
1973	71	1978	45
1974	63	1979	46
1975	50	1980	48
1976	56	1981	46

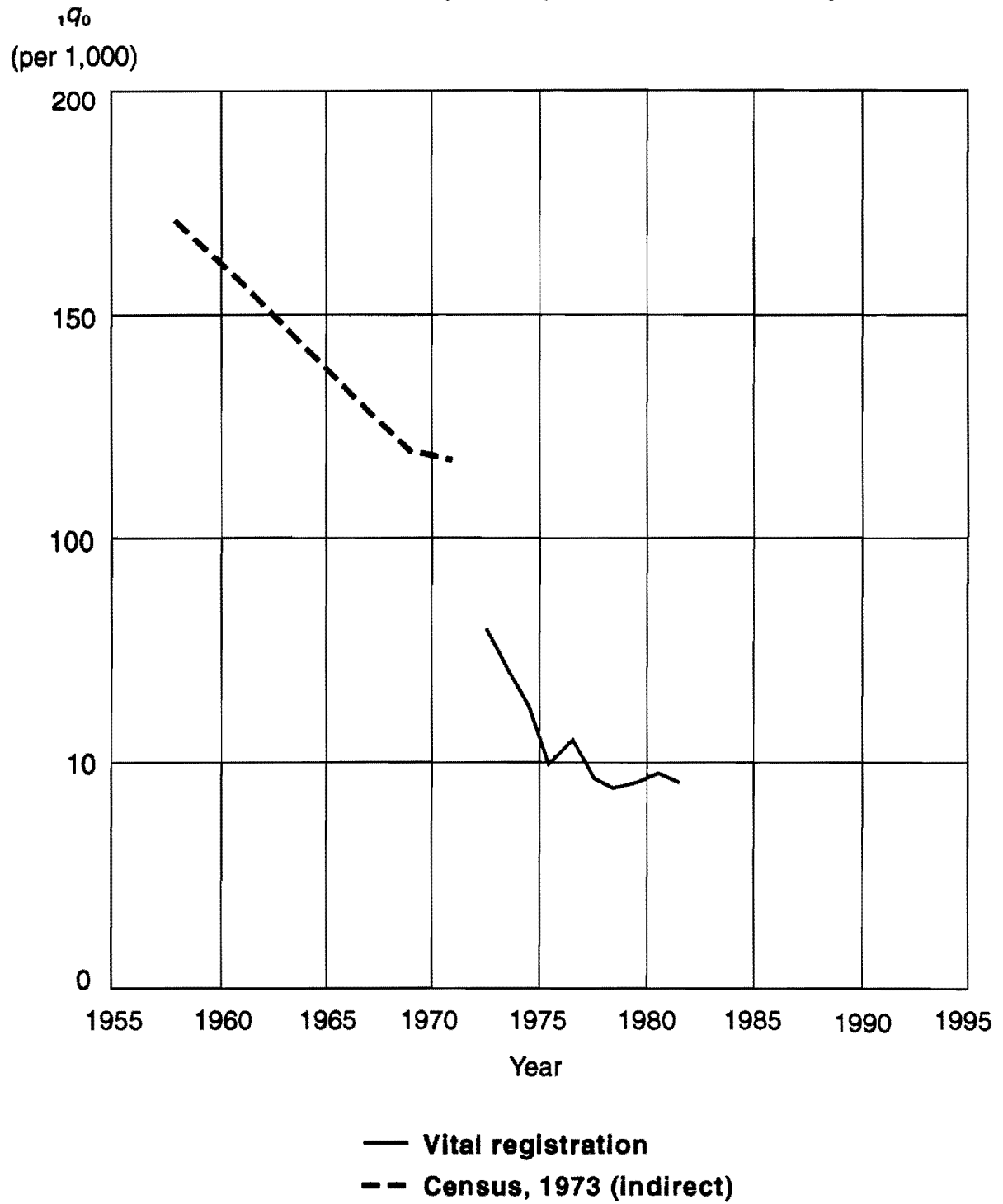
Sources: Data provided to the United Nations Statistical Office.

CENSUS, 31 JULY 1973 (Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>190</i>	<i>190</i>
15-19	0.298	0.128	1972.6	131	210
20-24	1.828	0.149	1971.2	118	183
25-29	3.640	0.173	1969.2	120	187
30-34	5.183	0.204	1966.8	129	205
35-39	6.542	0.246	1964.0	143	235
40-44	7.075	0.298	1961.1	158	267
45-49	7.326	0.352	1957.9	171	296

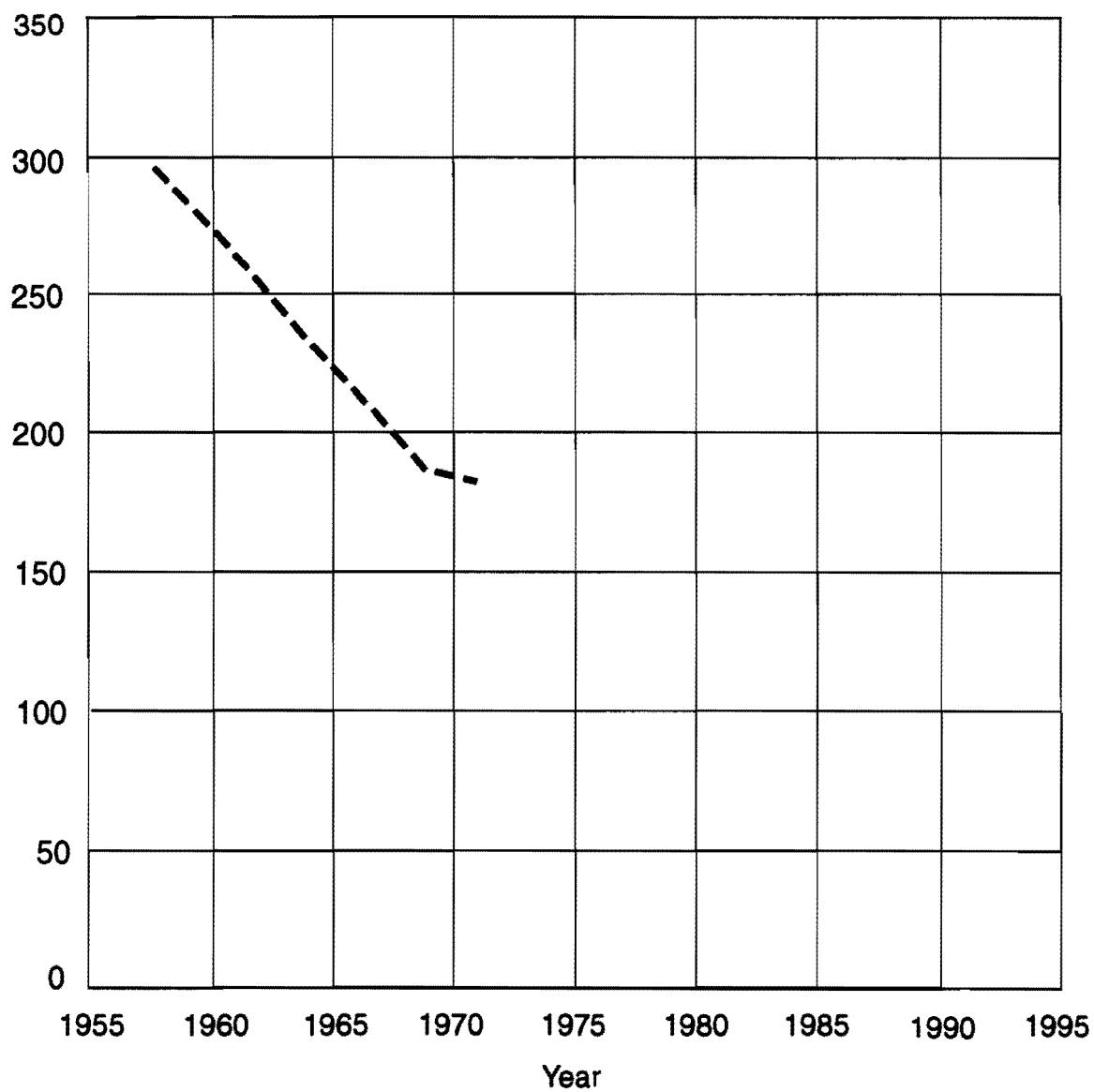
Source: *Demographic Yearbook, 1981* (United Nations publication, Sales No. E/F.82.XIII.1), tables 7, 50 and 51.

Infant mortality: Libyan Arab Jamahiriya



Under-five mortality: Libyan Arab Jamahiriya

${}_5q_0$
(per 1,000)



-- Census, 1973 (Indirect)

MADAGASCAR

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

No relevant data are available.

Sample surveys

Brass questions were included in the Enquête démographique Madagascar in 1966.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	69	1967	75
1961	71	1968	62
1962	..	1969	58
1963	..	1970	63
1964	56	1971	55
1965	66	1972	53
1966	75		

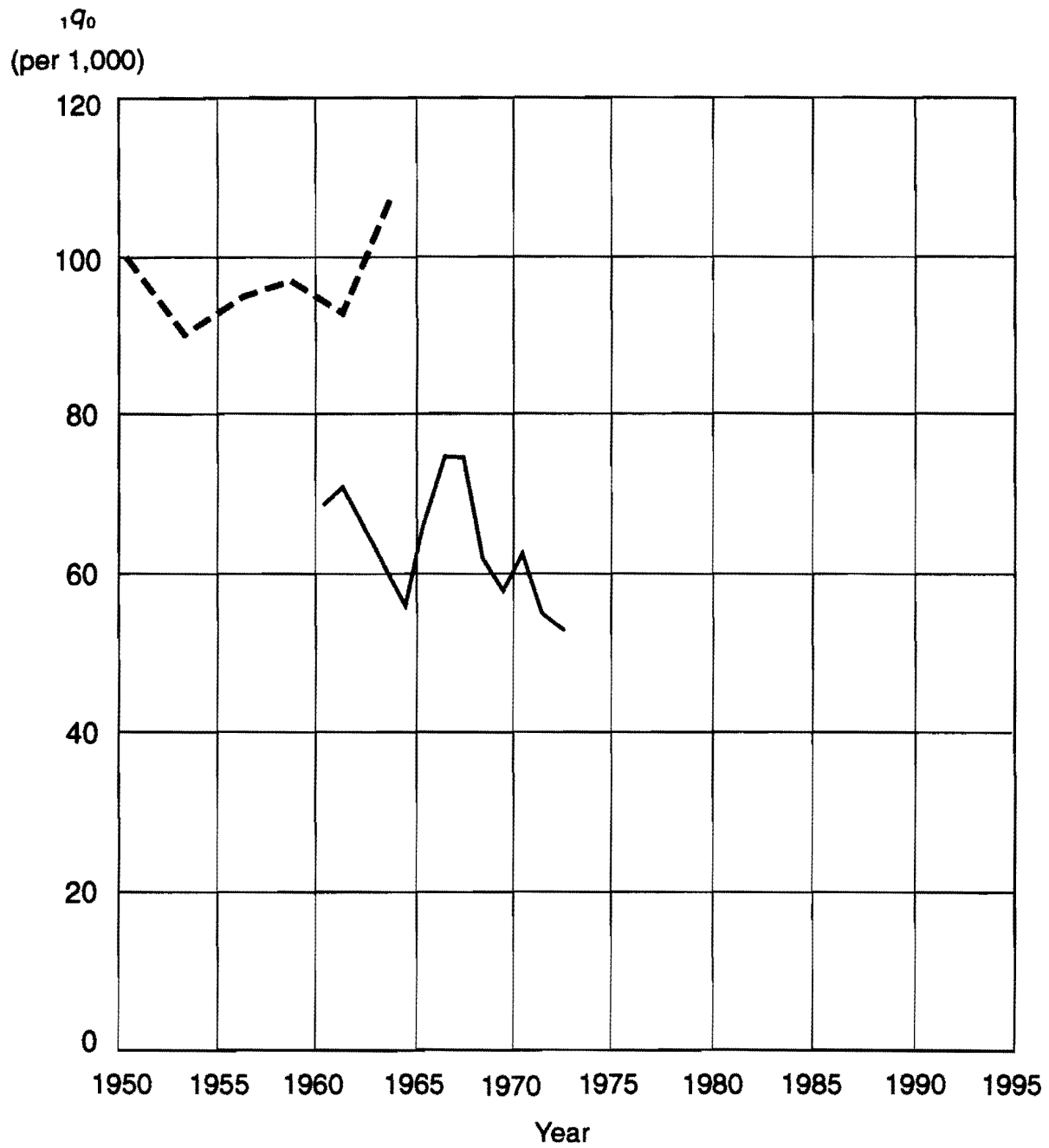
Sources: Demographic Yearbook, 1966 (United Nations publication, Sales No. 67.XIII.1); Demographic Yearbook, 1974 (United Nations publication, Sales No. E/F.75.XIII.1); and Demographic Yearbook, 1975 (United Nations publication, Sales No. E/F.76.XIII.1).

ENQUÊTE DÉMOGRAPHIQUE MADAGASCAR, 9 MAY-11 NOVEMBER 1966 (Indirect estimates, West model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1960</i>
15-19	0.36	0.108	1965.5	110	159
20-24	1.70	0.135	1964.0	8	157
25-29	2.94	0.128	1961.7	93	133
30-34	4.09	0.143	1959.1	97	139
35-39	4.50	0.149	1956.3	95	136
40-44	4.44	0.152	1953.4	90	129
45-49	4.48	0.186	1950.5	100	144

Source: Enquête démographique Madagascar, 1966 (Tananarive, Institut national de la statistique et de la recherche économique, 1967), pp. 77-81.

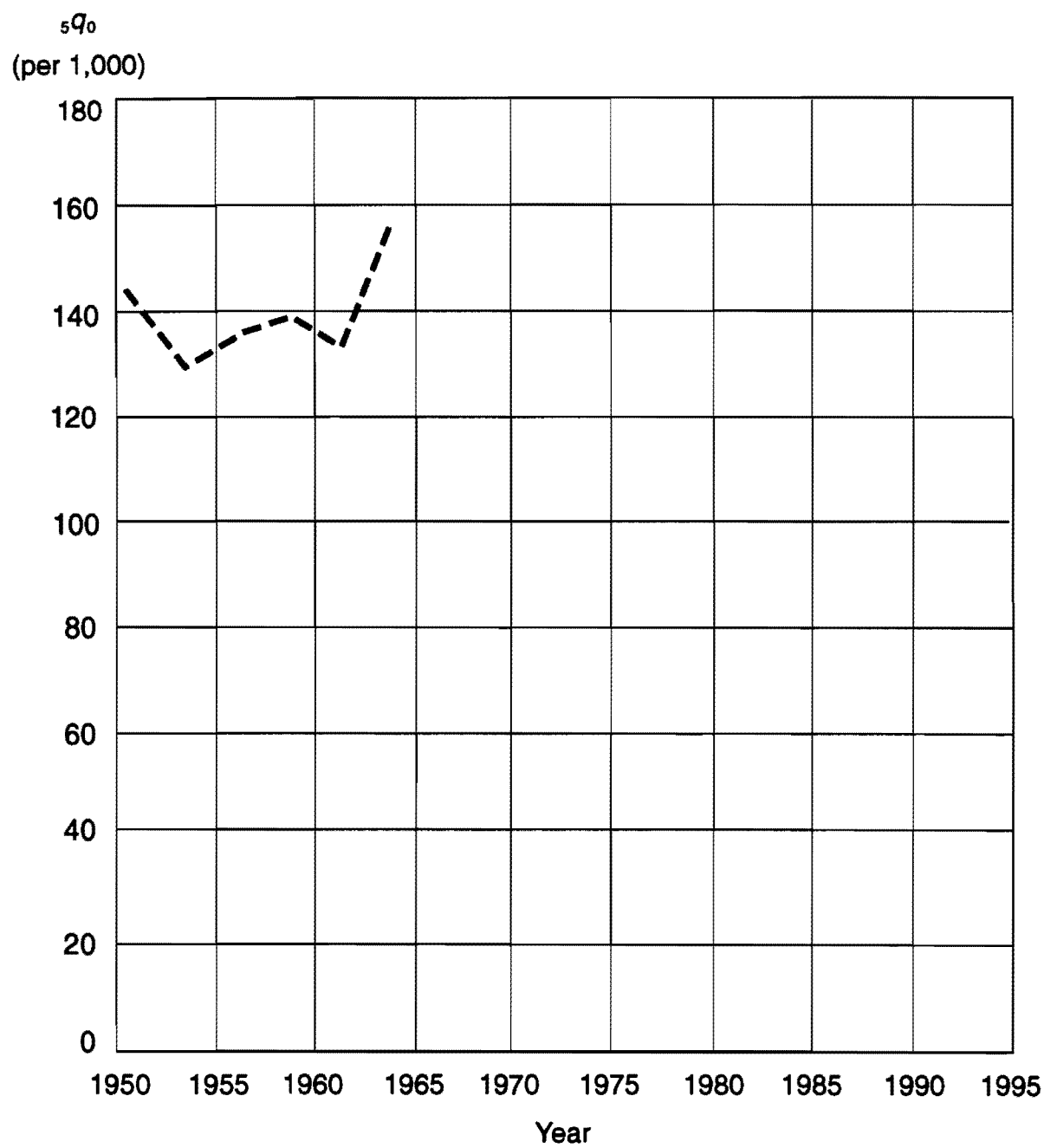
Infant mortality: Madagascar



— Vital registration

-- Enquête démographique Madagascar, 1966 (Indirect)

Under-five mortality: Madagascar



-- Enquête démographique Madagascar, 1966 (indirect)

MALAWI

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1977 and 1987 censuses of Malawi. However, the results from the 1987 census are not available at the time of writing.

Sample surveys

Maternity histories were collected in 1984 by the Malawi Family Formation Survey. Brass questions were included in the Malawi Demographic Survey (MDS) of 1982. A multi-round, dual-record type of survey, the Malawi Population Change Survey (MPCS) of 1970-1972, collected information on current births, deaths and migrations through repeated visits by survey enumerators and resident registrars, followed by matching and field reconciliation of unmatched events. In addition, the 1970 baseline enumeration included Brass questions.

MALAWI POPULATION CHANGE SURVEY, FEBRUARY 1970-JANUARY 1972
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1971-1972 ^a	142	347

Source: *Malawi Population Change Survey, February 1970-January 1972* (Zomba, National Statistical Office, 1973), pp. 30 and 41.

^a The number of vital events recorded in the first year of the survey were evaluated as less accurate and have not been published.

MALAWI POPULATION CHANGE SURVEY, BASELINE, FEBRUARY-JULY 1970
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.284	0.356	1969.2	*	*
20-24	1.660	0.327	1967.9	238	421
25-29	3.429	0.343	1966.0	215	380
30-34	4.730	0.345	1963.7	200	351
35-39	6.061	0.385	1961.1	209	370
40-44	6.519	0.403	1958.3	207	365
45-49	6.881	0.429	1955.2	207	366

Source: *Malawi Population Change Survey, February 1970-January 1972* (Zomba, National Statistical Office, 1973), p. 65, table 7.

* Denotes value below a level-1 model life-table.

CENSUS, 20 SEPTEMBER-10 OCTOBER 1977
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.496	0.247	1976.4	203	358
20-24	1.991	0.274	1974.9	187	328
25-29	3.555	0.310	1972.9	190	333
30-34	5.032	0.340	1970.5	194	341
35-39	6.048	0.362	1968.0	196	344
40-44	6.654	0.383	1965.2	196	345
45-49	6.885	0.408	1962.2	196	344

Source: *Malawi Population Census, 1977: Final Report*, vol. I (Zomba, National Statistical Office, 1980), pp. 102 and 105, tables 2.2.1 and 2.2.2.

MALAWI DEMOGRAPHIC SURVEY, NOVEMBER-DECEMBER 1982
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.430	0.204	1981.7	178	309
20-24	1.929	0.228	1980.3	163	277
25-29	3.638	0.265	1978.3	167	287
30-34	5.129	0.302	1976.0	176	306
35-39	6.351	0.334	1973.5	183	319
40-44	7.049	0.364	1970.7	188	329
45-49	7.344	0.393	1967.7	190	333

Source: *Malawi Demographic Survey, 1982* (Zomba, National Statistical Office, 1987), pp. 51 and 54, table 7.1 and 8.1.

MALAWI FAMILY FORMATION SURVEY, MAY-JUNE 1984
(Direct estimates)

Period ^a	Mortality rate (per 1,000)	
	190	190
1970-1974	144	295
1975-1979	117	239
1980-1983	105	..

Source: *Malawi Family Formation Survey, 1984*, vol. III, *Mortality and Maternal and Child Health* (Lilongwe, Ministry of Health, 1985), p. 15.

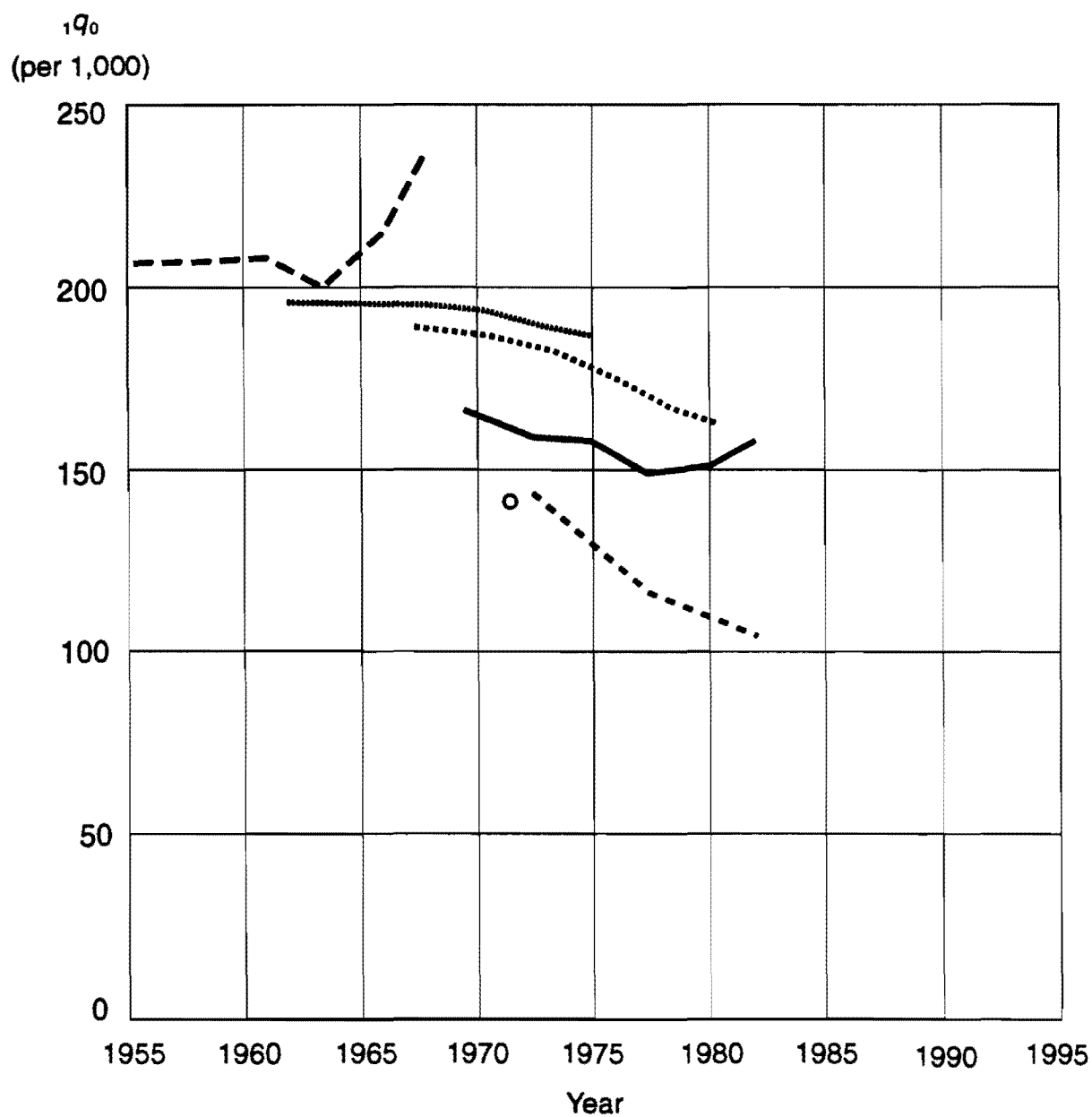
^a Figures refer to cohorts of births during periods shown.

MALAWI FAMILY FORMATION SURVEY, MAY-JUNE 1984
(Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1980</i>
15-19	0.379	0.154	1983.2	135	219
20-24	1.749	0.220	1981.8	159	269
25-29	3.387	0.234	1979.9	152	255
30-34	4.491	0.247	1977.6	150	251
35-39	5.771	0.280	1975.2	159	269
40-44	6.588	0.300	1972.4	160	272
45-49	6.812	0.338	1969.4	167	286

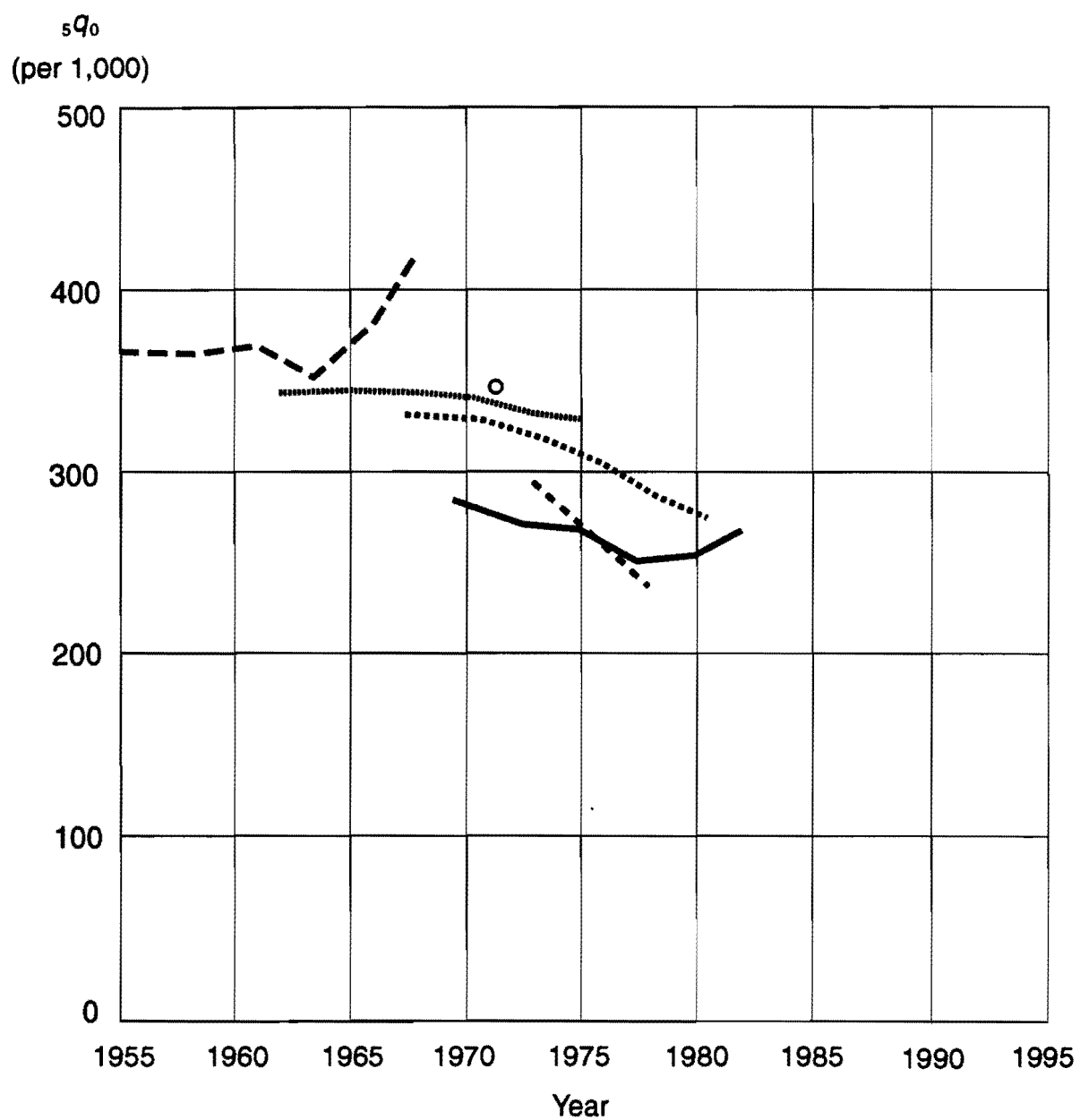
Source: Malawi Family Formation Survey, 1984 (Zomba, National Statistical Office, 1987), pp. 47 and 49.

Infant mortality: Malawi



- Malawi Population Change Survey, (direct)
- — Malawi Population Change Survey, Baseline, 1970 (indirect)
- Census, 1977 (indirect)
- Malawi Demographic Survey, 1982 (indirect)
- - - Malawi Family Formation Survey, 1984 (direct)
- Malawi Family Formation Survey, 1984 (indirect)

Under-five mortality: Malawi



- Malawi Population Change Survey, (direct)
- - Malawi Population Change Survey, Baseline, 1970 (indirect)
- Census, 1977 (indirect)
- Malawi Demographic Survey, 1982 (indirect)
- - - Malawi Family Formation Survey, 1984 (direct)
- Malawi Family Formation Survey, 1984 (indirect)

MALAYSIA*

Vital registration

Registration of births and deaths is reported to be incomplete. The registered data exclude deaths of live-born infants dying before registration of birth.

Censuses

Brass questions were included in the 1970 census.

Sample surveys

Maternity histories were collected by the Malaysian Fertility and Family Survey (WFS) of 1974.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	69	1970	41	1980	25
1961	60	1971	39	1981	21
1962	59	1972	38	1982	20
1963	57	1973	38	1983	20
1964	48	1974	35	1984	17
1965	50	1975	33	1985	17
1966	48	1976	31	1986	16
1967	45	1977	32	1987	14
1968	42	1978	28	1988	14
1969	43	1979	27	1989	13

Source: Data provided to the United Nations Statistical Office.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES*

<i>Year</i>	<i>Mortality rate (per 1,000)</i>		<i>Year</i>	<i>Mortality rate (per 1,000)</i>		<i>Year</i>	<i>Mortality rate (per 1,000)</i>	
	<i>190</i>	<i>590</i>		<i>190</i>	<i>590</i>		<i>190</i>	<i>590</i>
1970 . . .	41	58	1977 . . .	29	40	1984 . . .	18	24
1971 . . .	38	55	1978 . . .	27	36	1985 . . .	17	23
1972 . . .	37	51	1979 . . .	26	35	1986 . . .	15	20
1973 . . .	38	53	1980 . . .	..	..	1987 . . .	14	18
1974 . . .	36	48	1981 . . .	..	..	1988 . . .	15	19
1975 . . .	32	44	1982 . . .	19	26	1989 . . .	13	17
1976 . . .	30	39	1983 . . .	20	27			

Sources: *Abridged Life Tables, Malaysia, 1970* (Kuala Lumpur, Department of Statistics, 1974), tables 13 and 14; *Vital Statistics, Peninsular Malaysia, 1972* (Kuala Lumpur, Department of Statistics, 1974), tables 59.01, 59.02, 60.01 and 60.02; and data provided to the United Nations Statistical Office.

* The life-tables for 1970, 1974 and 1975 are based on population accounts adjusted for underenumeration.

* Data for Peninsular Malaysia only.

CENSUS, 24 AUGUST 1970
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.115	0.056	1969.7	63	85
20-24	1.019	0.051	1968.6	49	64
25-29	2.706	0.057	1967.0	49	63
30-34	4.256	0.071	1965.0	56	74
35-39	5.350	0.085	1962.7	61	82
40-44	5.787	0.111	1960.2	72	99
45-49	5.623	0.140	1957.2	82	115

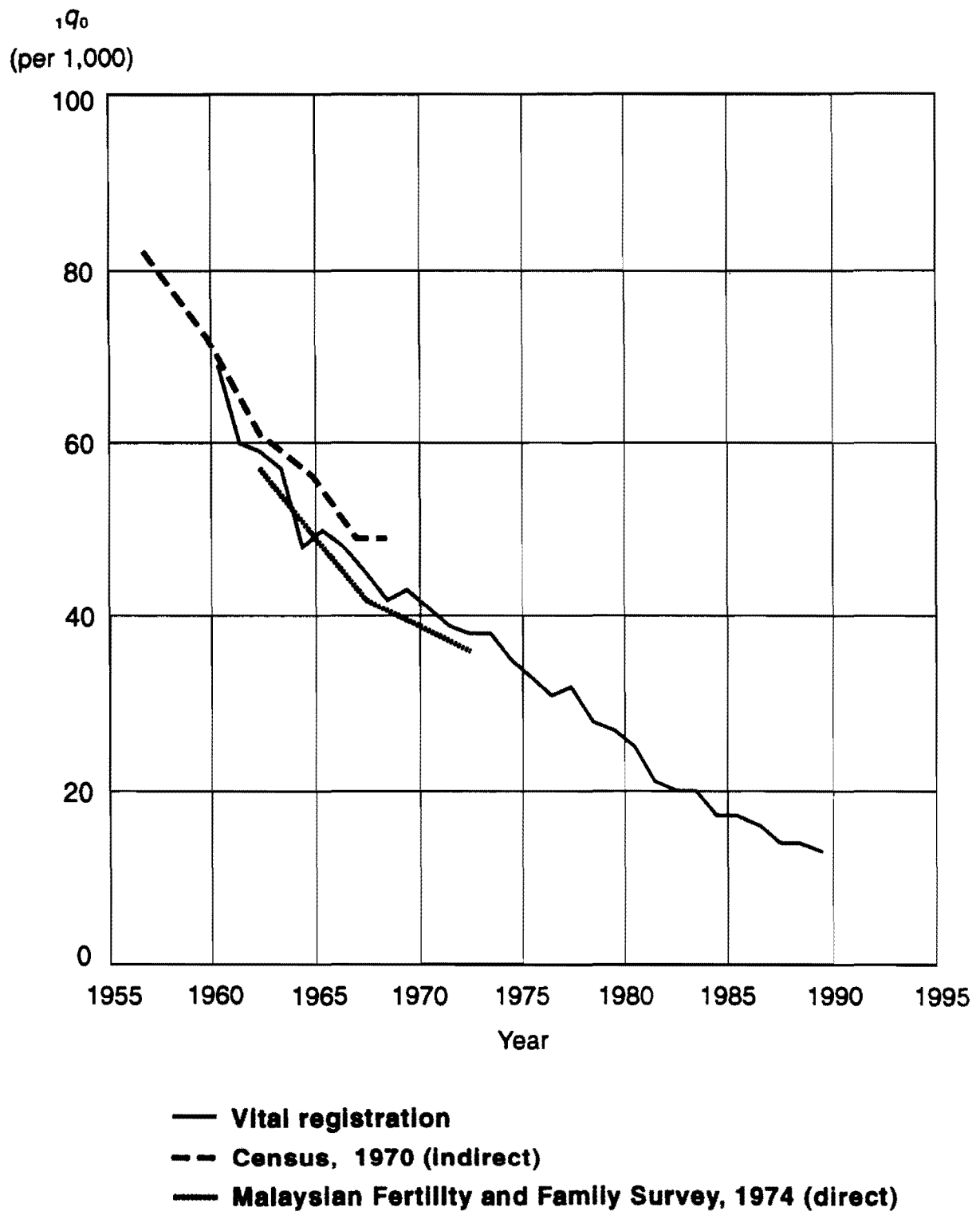
Source: Unpublished census tabulations provided by the Department of Statistics, Malaysia.

MALAYSIAN FERTILITY AND FAMILY SURVEY, AUGUST-DECEMBER 1974
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1959-1964	57	77
1964-1969	42	56
1969-1974	36	50

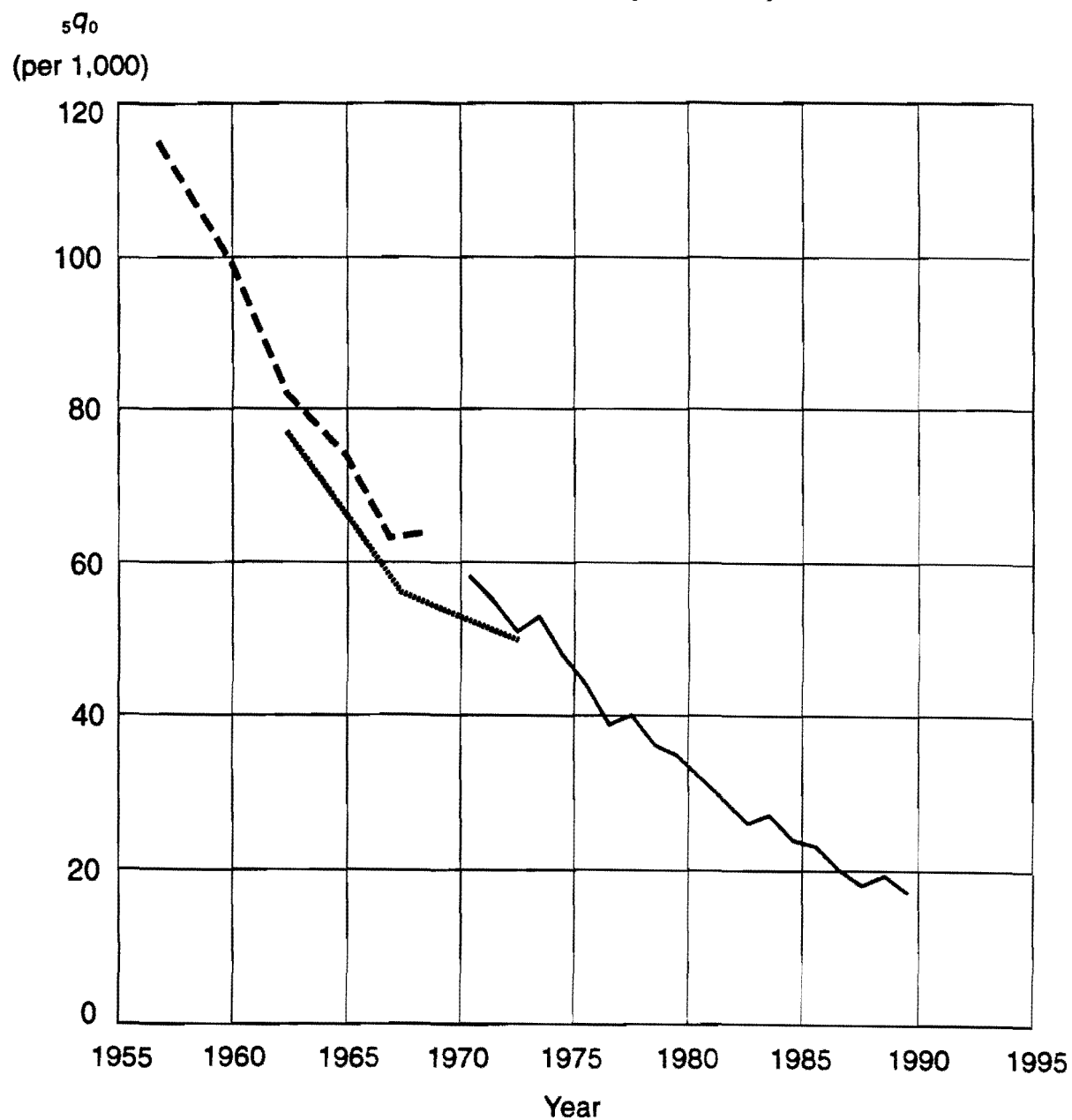
Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, International Statistical Institute, 1983), p. 80.

Infant mortality: Malaysia



Note: Data for Peninsular Malaysia only.

Under-five mortality: Malaysia



- Life-tables
- Census, 1970 (indirect)
- Malaysian Fertility and Family Survey, 1974 (direct)

Note: Data for Peninsular Malaysia only.

MALI

Vital registration

Completeness of death registration is not reported.

Censuses

The 1976 census included a question on births and deaths by age in the year before the census.

Sample surveys

Maternity histories were collected in 1987 by the Enquête démographique et de santé au Mali (DHS). Brass questions were included in the earlier Enquête démographique au Mali, 1960-1961; although estimates from this earlier survey are not reported here, they agree well with the estimates from the 1987 survey.

CENSUS, 1-6 DECEMBER 1976 (Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1976	132	264

Source: Mali, *Analyse du recensement de 1976*, tome III, *Caracteristiques démographiques* (Bamako, Ministère du plan, Direction nationale de la statistique et de l'informatique, Division de la population, 1985), pp. 124-127.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ AU MALI, MARCH-AUGUST 1987 (Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1972-1976	170	360
1977-1981	156	311
1982-1986*	108	249

Source: Baba Traoré, Mamadou Konaté and Cynthia Stanton, *Enquête démographique et de santé au Mali, 1987* (Bamako, Institut du Sahel, Centre d'études et de recherches sur la population pour le développement; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1989), p. 74, table 6.1.

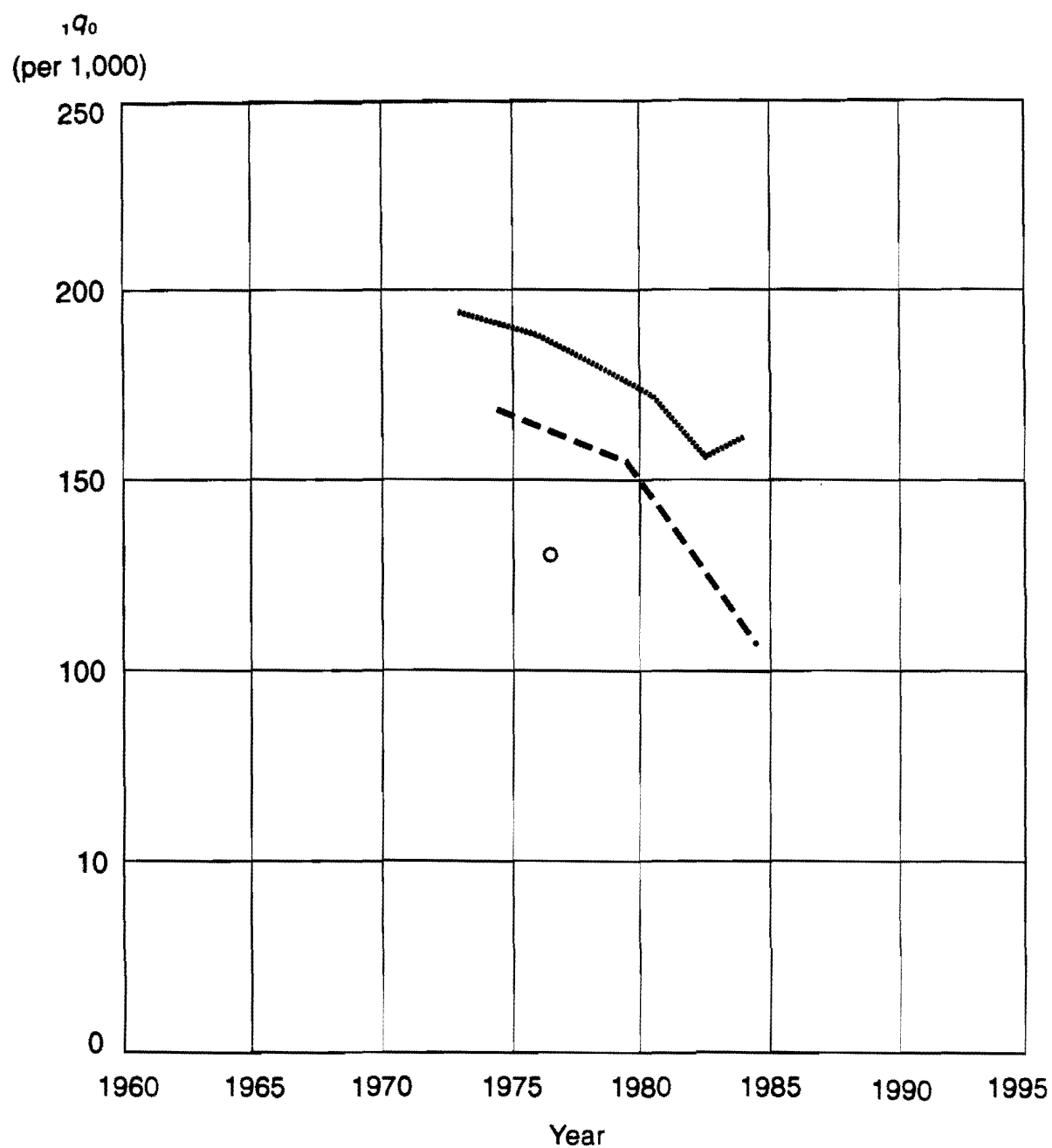
* Including events occurring in 1987 up to the month preceding the date of the interview.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ AU MALI, MARCH-AUGUST 1987
(Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>190</i>	<i>190</i>
15-19	0.63	0.238	1985.7	137	221
20-24	1.90	0.247	1984.2	163	278
25-29	3.39	0.245	1982.4	157	264
30-34	5.01	0.291	1980.5	173	299
35-39	5.97	0.323	1978.4	181	315
40-44	6.98	0.360	1976.1	189	331
45-49	7.14	0.396	1973.2	195	342

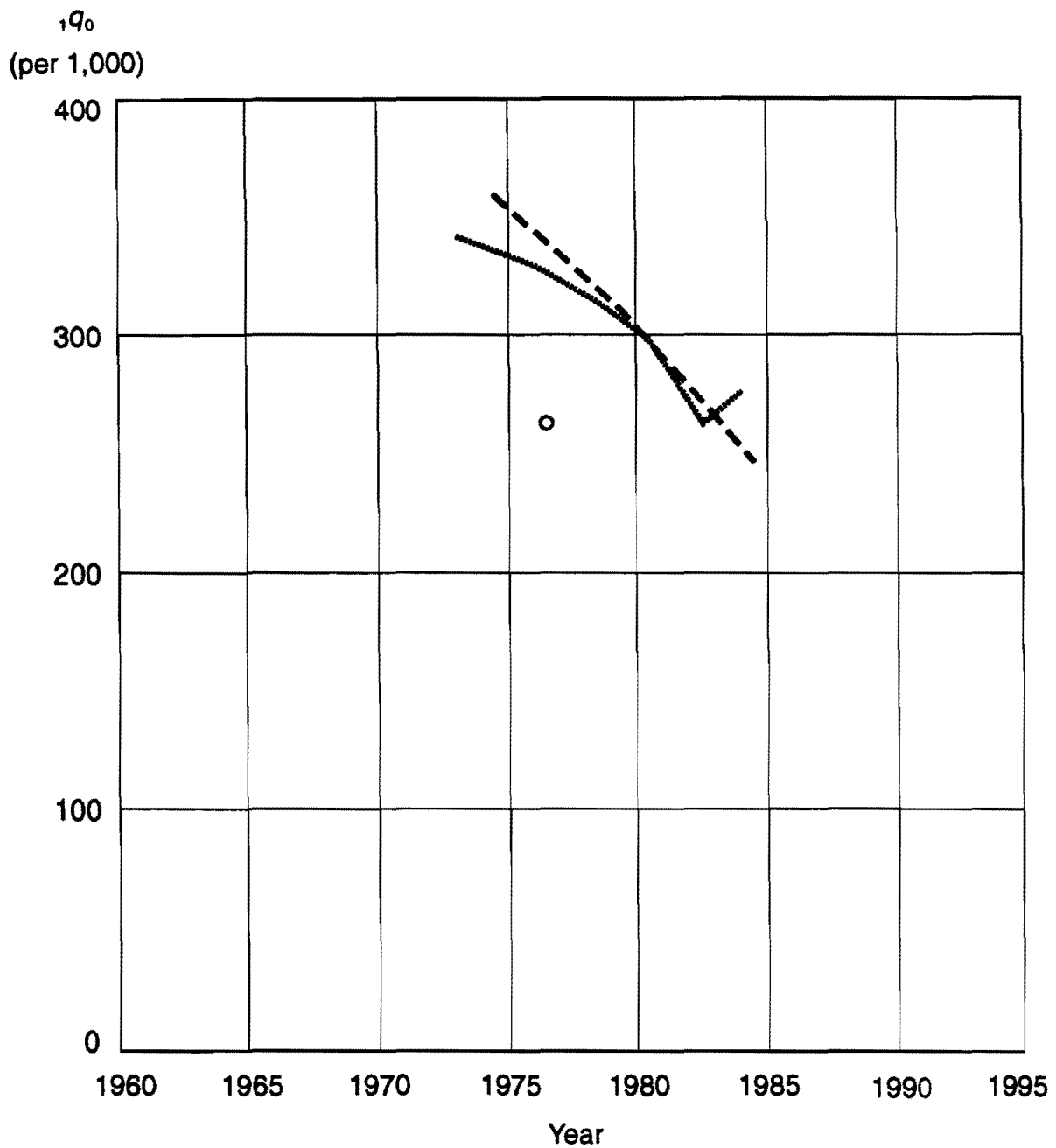
Source: Demographic and Health Surveys standard recode files.

Infant mortality: Mali



- Census, 1976 (direct)
- Enquête démographique et de santé au Mali, 1987 (direct)
- Enquête démographique et de santé au Mali, 1987 (indirect)

Under-five mortality: Mali



- Census, 1976 (direct)
- — Enquête démographique et de santé au Mali, 1987 (direct)
- Enquête démographique et de santé au Mali, 1987 (indirect)

MAURITIUS

Vital registration

Registration of births and deaths is reported to be complete. A recent official publication by the World Health Organization and the Ministry of Health of Mauritius (Xenos, 1981) states that "Mauritius has an excellent registration system for basic vital statistics". All published mortality rates are based on registered deaths.

Censuses

The 1972 and 1983 censuses collected summary birth histories from ever-married women aged under 55 years. Unfortunately, the data so obtained do not appear to have been published or analysed.

Sample surveys

No relevant data are available.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	70	1970	57	1980	32
1961	61	1971	52	1981	34
1962	60	1972	64	1982	29
1963	59	1973	63	1983	26
1964	57	1974	46	1984	23
1965	64	1975	49	1985	24
1966	64	1976	40	1986	26
1967	70	1977	45	1987	24
1968	69	1978	34	1988	22
1969	70	1979	33	1989	21

Sources: Mauritius, *Annual Digest of Statistics, 1987*, vol. 32 (Rose Hill, Ministry of Economic Planning and Development, Central Statistical Office, 1988); and data provided to the United Nations Statistical Office.

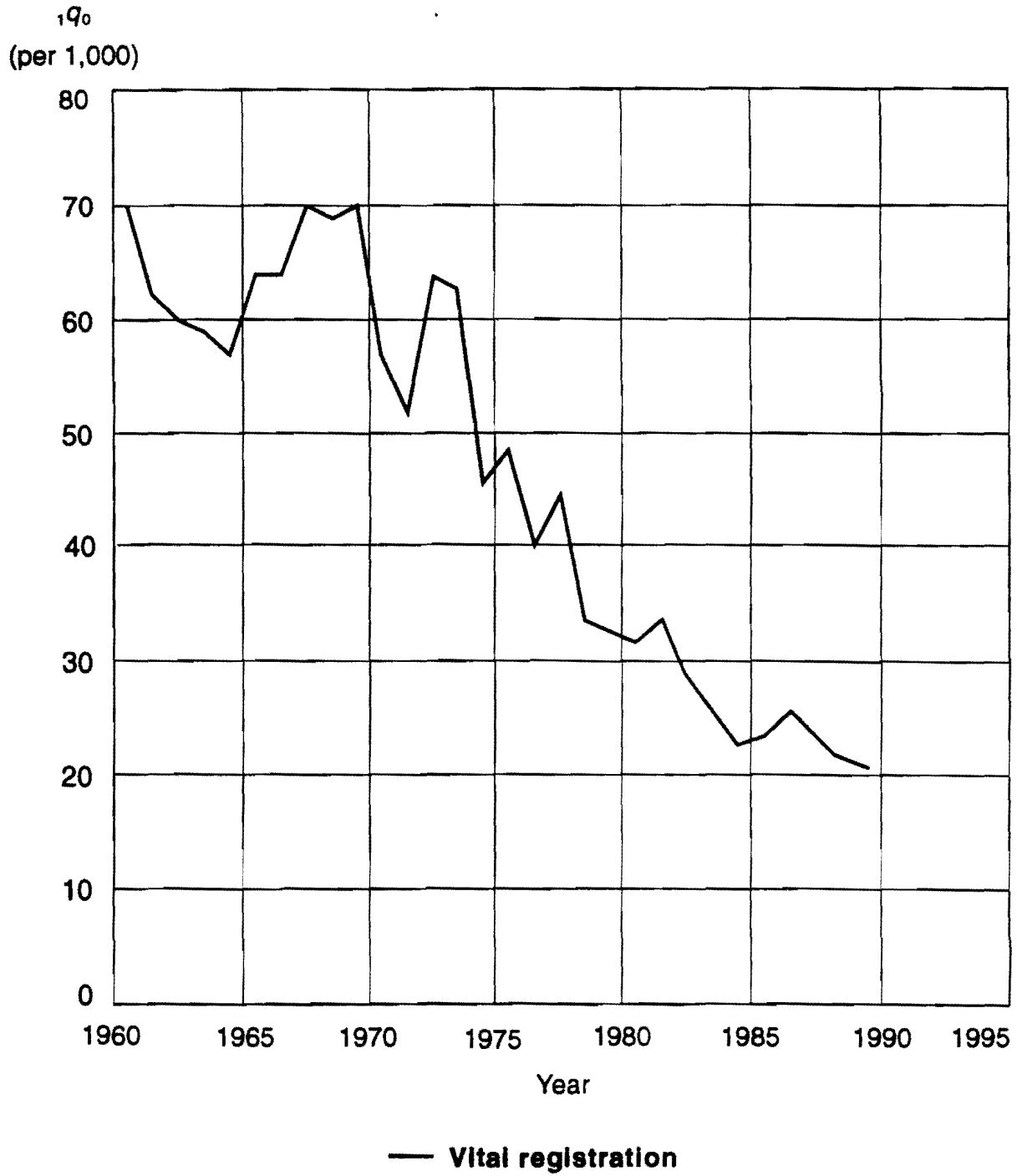
INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1980</i>
1961-1963	61	90
1971-1973	59	82
1982-1984*	24	30

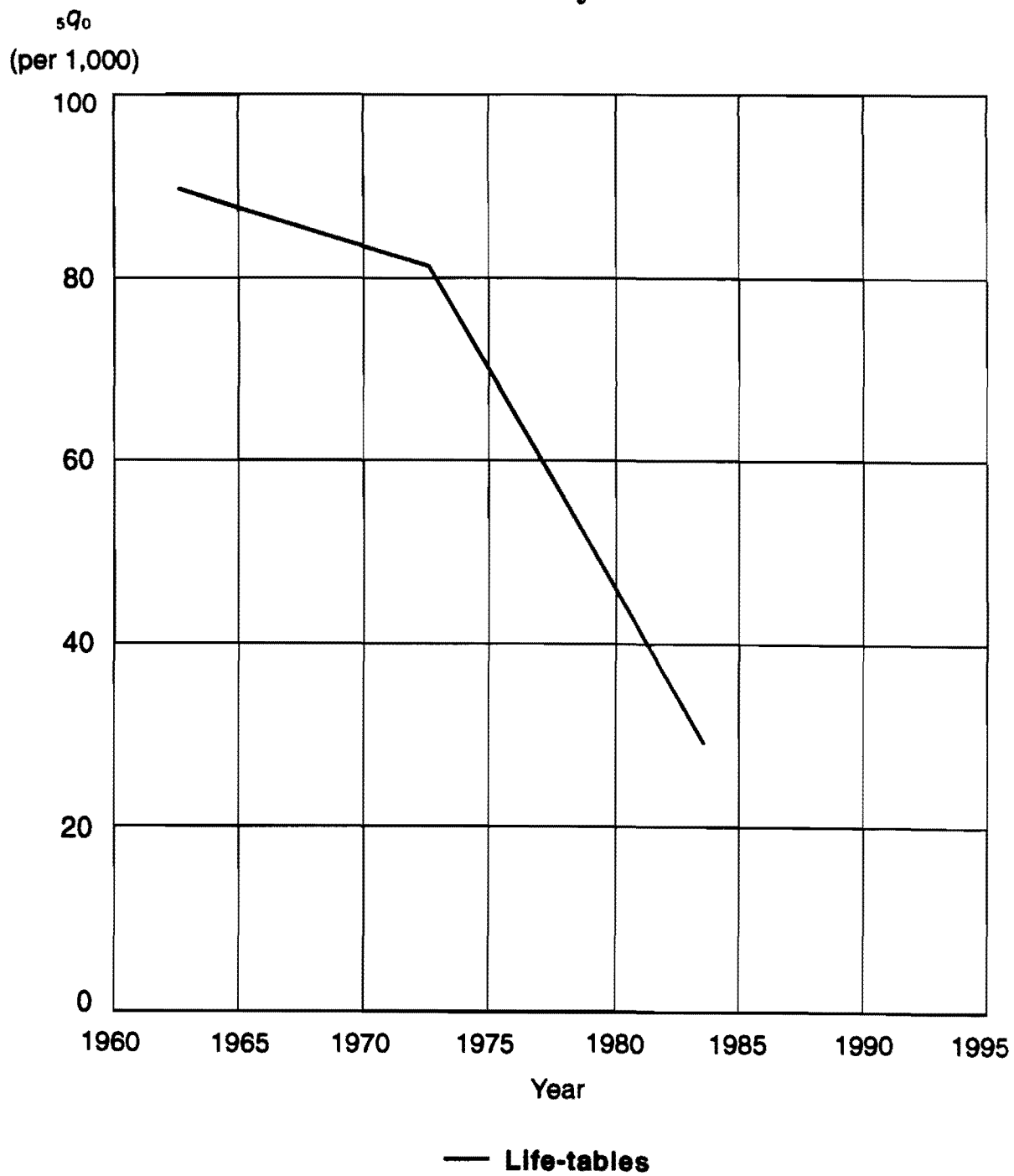
Sources: *Demographic Yearbook, 1974* (United Nations publication, Sales No. E/F.75.XIII.1), p. 1062, table 35, and *Demographic Yearbook, 1985* (United Nations publication, Sales No. E/F.86.XIII.1), p. 1004, table 36.

* For Mauritian population only.

Infant mortality: Mauritius



Under-five mortality: Mauritius



MEXICO

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1980 and 1990 censuses. Data from the 1990 census are not yet available. Data from the 1980 census come from a sample of approximately 2 per cent of households, and the data on children ever born and children surviving were published by five-year age groups of mother except for the youngest age group, which included women aged 12-19. In the analysis given here, all the reported births were assumed to be to women aged 15-19.

Sample surveys

Maternity histories were collected in 1976 by the Encuesta Nacional de Fecundidad (WFS) and in 1987 by the Encuesta Nacional sobre Fecundidad y Salud (DHS). Brass questions were included in the Encuesta Nacional de Prevalencia en el Uso de Métodos Anticonceptivos (CPS) in both 1978 and 1979, but data from the 1978 survey are not available.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	74	1969	67	1978	40
1961	70	1970	69	1979	39
1962	70	1971	63	1980	39
1963	69	1972	61	1981	35
1964	65	1973	52	1982	33
1965	61	1974	45	1983	30
1966	63	1975	49	1984	29
1967	63	1976	52	1985	25
1968	64	1977	49		

Sources: Anuario estadístico de los Estados Unidos Mexicanos, 1964-1965 (Mexico, Secretaría de Industria y Comercio, Dirección General de Estadística, 1967); Anuario estadístico, 1975-1976 (Mexico, Secretaría de Programación y Presupuesto, Coordinación General del Sistema Nacional de Información, 1979); Anuario estadístico, 1980 (Mexico, Coordinación General de los Servicios Nacionales de Estadística, Geografía y Informática, 1982); Anuario estadístico, 1983, 1985 and 1988-1989 (Mexico, Instituto Nacional de Estadística, Geografía e Informática, 1984, 1986 and 1990).

ENCUESTA NACIONAL DE FECUNDIDAD, JULY 1976-MARCH 1977
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1961-1966	86	125
1966-1971	78	113
1971-1976	72	96

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey, Comparative Studies No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 107.

ENCUESTA NACIONAL DE FECUNDIDAD, JULY 1976-MARCH 1977
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.26	0.110	1975.8	115	168
20-24	1.53	0.084	1974.5	73	102
25-29	3.20	0.095	1972.6	74	103
30-34	4.89	0.114	1970.3	82	115
35-39	5.90	0.122	1967.8	82	115
40-44	6.46	0.146	1965.1	90	128
45-49	..	0.174	1962.2	97	139

Source: Manuel Ordorica and Joseph E. Potter, *Evaluation of the Mexican Fertility Survey, 1976-77*, World Fertility Survey Scientific Reports, No. 21 (Voorburg, Netherlands, International Statistical Institute, 1981), pp. 21 and 27, tables 13 and 25.

ENCUESTA NACIONAL DE PREVALENCIA EN EL USO DE MÉTODOS
ANTICONCEPTIVOS, SEPTEMBER-DECEMBER 1979
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.223	0.096	1978.8	102	147
20-24	1.331	0.069	1977.5	61	83
25-29	2.734	0.088	1975.5	69	95
30-34	4.214	0.097	1973.2	71	97
35-39	5.753	0.116	1970.6	78	108
40-44	6.442	0.120	1967.9	75	104
45-49	6.829	0.143	1965.0	81	113

Source: Mexico, *Encuesta Nacional de Prevalencia en el Uso de Métodos Anticonceptivos con Módulo de Fecundidad y Mortalidad: estimaciones de fecundidad y mortalidad a nivel nacional* (Mexico, Coordinación del Programa Nacional de Planificación Familiar, 1980), p. 59, tables 36 and 37.

CENSUS, 4-11 JUNE 1980
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
12-19	0.141	0.071	1979.6	81	113
20-24	1.093	0.078	1978.3	71	97
25-29	2.402	0.093	1976.4	73	101
30-34	3.757	0.103	1974.0	75	104
35-39	5.043	0.123	1971.4	82	115
40-44	5.983	0.148	1968.6	91	129
45-49	6.352	0.170	1965.7	95	135

Source: Mexico, *X Censo General de Población y Vivienda, 1980: resultados preliminares a nivel nacional y por entidad federativa* (Mexico, Secretaría de Programación y Presupuesto, Coordinación General de los Servicios Nacionales de Estadística, Geografía e Informática, 1981), pp. 61 and 68, tables 12 and 13.

ENCUESTA NACIONAL SOBRE FECUNDIDAD Y SALUD, FEBRUARY-MAY 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1972-1976	70	91
1977-1981	67	83
1982-1987	47	61

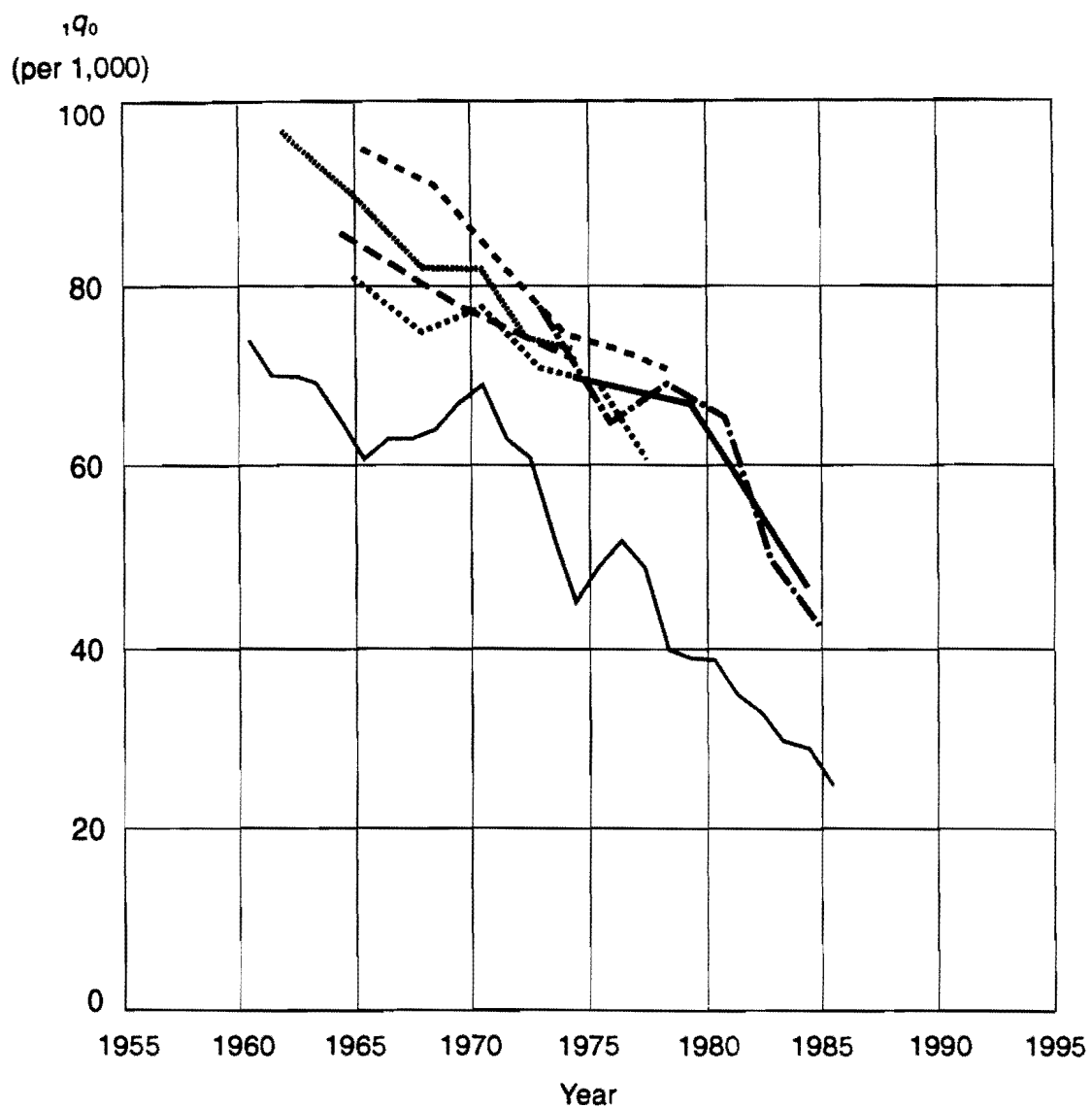
Source: Mexico, *Encuesta Nacional sobre Fecundidad y Salud, 1987* (Mexico, Secretaría de Salud, Dirección General de Planificación Familiar; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 92, table 9.1.

ENCUESTA NACIONAL SOBRE FECUNDIDAD Y SALUD, FEBRUARY-MAY 1987
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.18	0.056	1986.2	58	77
20-24	1.07	0.047	1984.9	43	55
25-29	2.33	0.060	1983.1	50	65
30-34	3.51	0.088	1980.9	66	90
35-39	4.30	0.100	1978.5	69	95
40-44	5.43	0.101	1975.9	65	89
45-49	6.38	0.136	1973.0	78	109

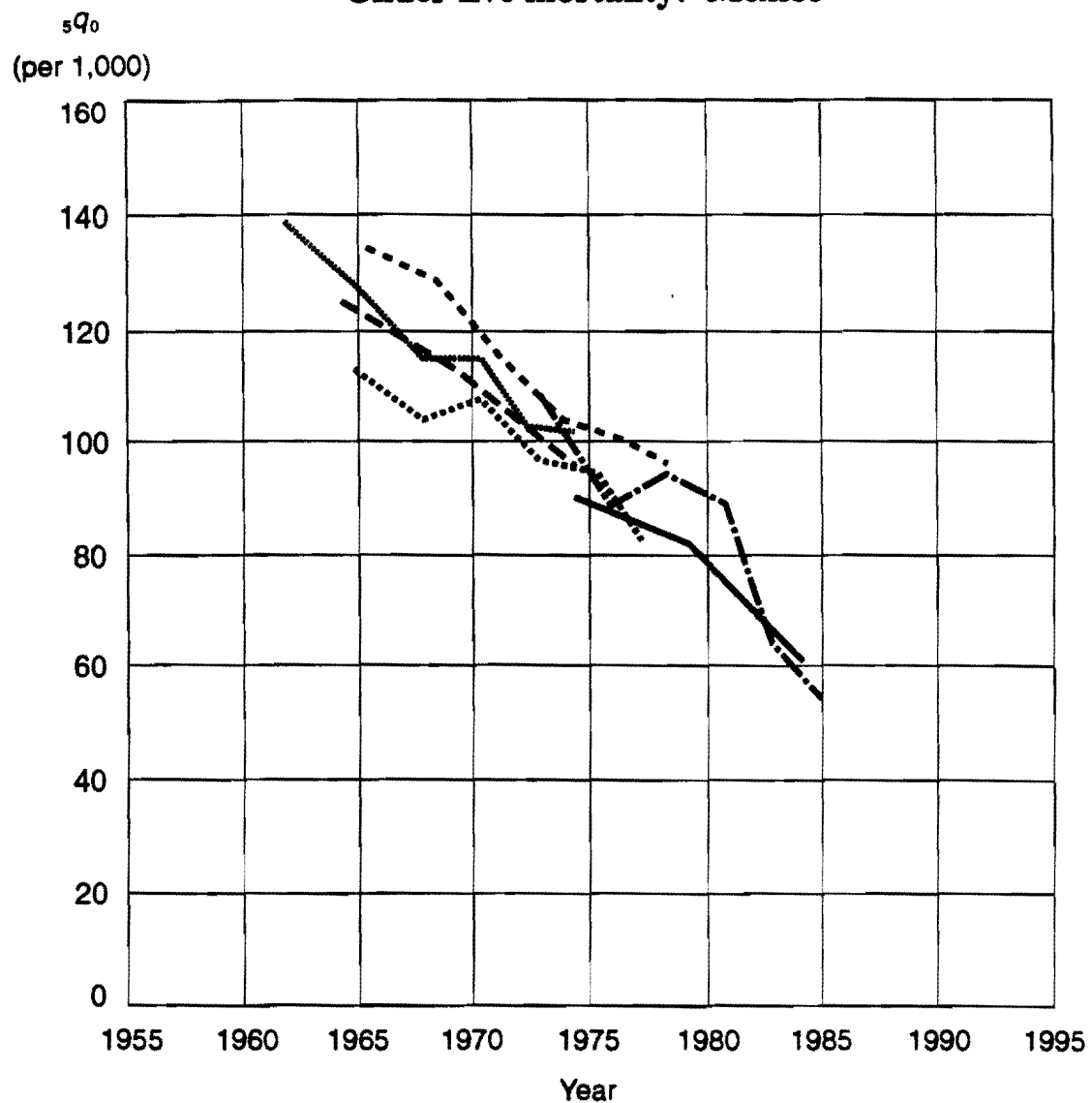
Source: Mexico, *Encuesta Nacional sobre Fecundidad y Salud, 1987* (Mexico, Secretaría de Salud, Dirección General de Planificación Familiar; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 34, table 5.2.

Infant mortality: Mexico



- Vital registration
- - Encuesta Nacional de Fecundidad, 1976 (direct)
- · - Encuesta Nacional de Fecundidad, 1976 (indirect)
- · · · Encuesta Nacional de Prevalencia en el Uso de Métodos Anticonceptivos, 1979 (indirect)
- - - Census, 1980 (Indirect)
- Encuesta Nacional sobre Fecundidad y Salud, 1987 (direct)
- · - Encuesta Nacional sobre Fecundidad y Salud, 1987 (indirect)

Under-five mortality: Mexico



- Encuesta Nacional de Fecundidad, 1976 (direct)
- .-.- Encuesta Nacional de Fecundidad, 1976 (Indirect)
- Encuesta Nacional de Prevalencia en el Uso de Métodos Anticonceptivos, 1979 (indirect)
- Census, 1980 (Indirect)
- Encuesta Nacional sobre Fecundidad y Salud, 1987 (direct)
- - - Encuesta Nacional sobre Fecundidad y Salud, 1987 (indirect)

MOROCCO

Vital registration

Death registration is reported to be incomplete.

Censuses

Brass questions were included in the 1982 census.

Sample surveys

Maternity histories were collected in 1979-1980 by the Enquête nationale sur la fécondité et la planification familiale au Maroc (WFS) and in 1987 by the Enquête nationale sur la planification familiale, la fécondité et la santé de la population au Maroc (DHS). Brass questions were included in the Planification familiale fécondité et santé familiale au Maroc (CPS) in 1983-1984. Data from the earlier Enquête de CERED, 1972-1973, have only been published for urban and rural areas and are not included here, although weighted national averages of the urban and rural estimates are consistent with estimates from the WFS Household Survey, the 1982 census and CPS.

ENQUÊTE NATIONALE SUR LA FÉCONDITÉ ET LA PLANIFICATION FAMILIALE AU MAROC, 1979-1980, APRIL-JULY 1980 (Direct estimates)

Period	Mortality rate (per 1,000)	
	1965-1970	1975-1980
1965-1970	103	180
1970-1975	102	161
1975-1980	91	142

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, rev. ed., World Fertility Survey Comparative Studies, No. 43 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 64.

ENQUÊTE NATIONALE SUR LA FÉCONDITÉ ET LA PLANIFICATION FAMILIALE AU MAROC, HOUSEHOLD SURVEY, NOVEMBER 1979-FEBRUARY 1980 (Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1965-1970	1975-1980
15-19	0.125	0.142	1979.2	155	260
20-24	1.098	0.161	1978.1	132	213
25-29	2.735	0.157	1976.4	115	177
30-34	4.615	0.173	1974.3	117	180
35-39	6.067	0.195	1971.8	123	192
40-44	6.560	0.202	1969.1	120	187
45-49	6.695	0.227	1965.9	125	196

Source: *Enquête nationale sur la fécondité et la planification familiale au Maroc, 1979-80*; rapport national, vol. II, *Population et santé: résultats de l'enquête ménage* (Rabat, Ministère de la santé publique, Direction des affaires techniques, 1984), p. 50, table 5.1.

CENSUS, 3-21 SEPTEMBER 1982
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.121	0.128	1981.8	138	224
20-24	1.019	0.143	1980.7	120	186
25-29	2.546	0.147	1979.0	110	165
30-34	4.284	0.158	1976.9	109	165
35-39	5.831	0.176	1974.5	114	174
40-44	6.525	0.202	1971.8	120	187
45-49	6.902	0.218	1968.6	121	189

Source: *Annuaire statistique du Maroc, 1987* (Rabat, Ministère du plan, Direction de la statistique, n.d.), pp. 19 and 26-27, tables 1-8, 1-13 and 1-14.

PLANIFICATION FAMILIALE, FÉCONDITÉ ET SANTÉ FAMILIALE AU MAROC, 1983-84
(Indirect estimates, South model)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.142	0.141	1983.0	146	240
20-24	1.043	0.132	1981.9	111	168
25-29	2.519	0.141	1980.2	106	157
30-34	4.496	0.158	1978.1	109	164
35-39	5.844	0.174	1975.7	113	172
40-44	6.998	0.198	1973.1	119	184
45-49	7.461	0.230	1969.9	127	201

Source: *Planification familiale, fécondité et santé familiale au Maroc, 1983-84: rapport de l'enquête nationale de prévalence contraceptive* (Rabat, Ministère de la santé publique, Direction des affaires techniques; and Columbia, Maryland, Westinghouse Public Applied Systems, 1985), p. 5.

^a Average parity for ever-married women adjusted by applying the proportion ever married from the 1984 census.

ENQUÊTE NATIONAL SUR LA PLANIFICATION FAMILIALE, LA FÉCONDITÉ ET LA SANTÉ
DE LA POPULATION AU MAROC (ENPS), APRIL-JULY 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1980
1972-1976	104	166
1977-1981	92	136
1982-1986 ^a	73	102

Source: Mustapha Azelmat, Mohamed Ayad and Houcine Belhachmi, *Enquête national sur la planification familiale, la fécondité et la santé de la population au Maroc (ENPS), 1987* (Rabat, Ministère de la santé publique, Service des études et de l'information sanitaire; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1989), p. 79, table 6.2.

^a Including events occurring in 1987 up to the month preceding the date of interview.

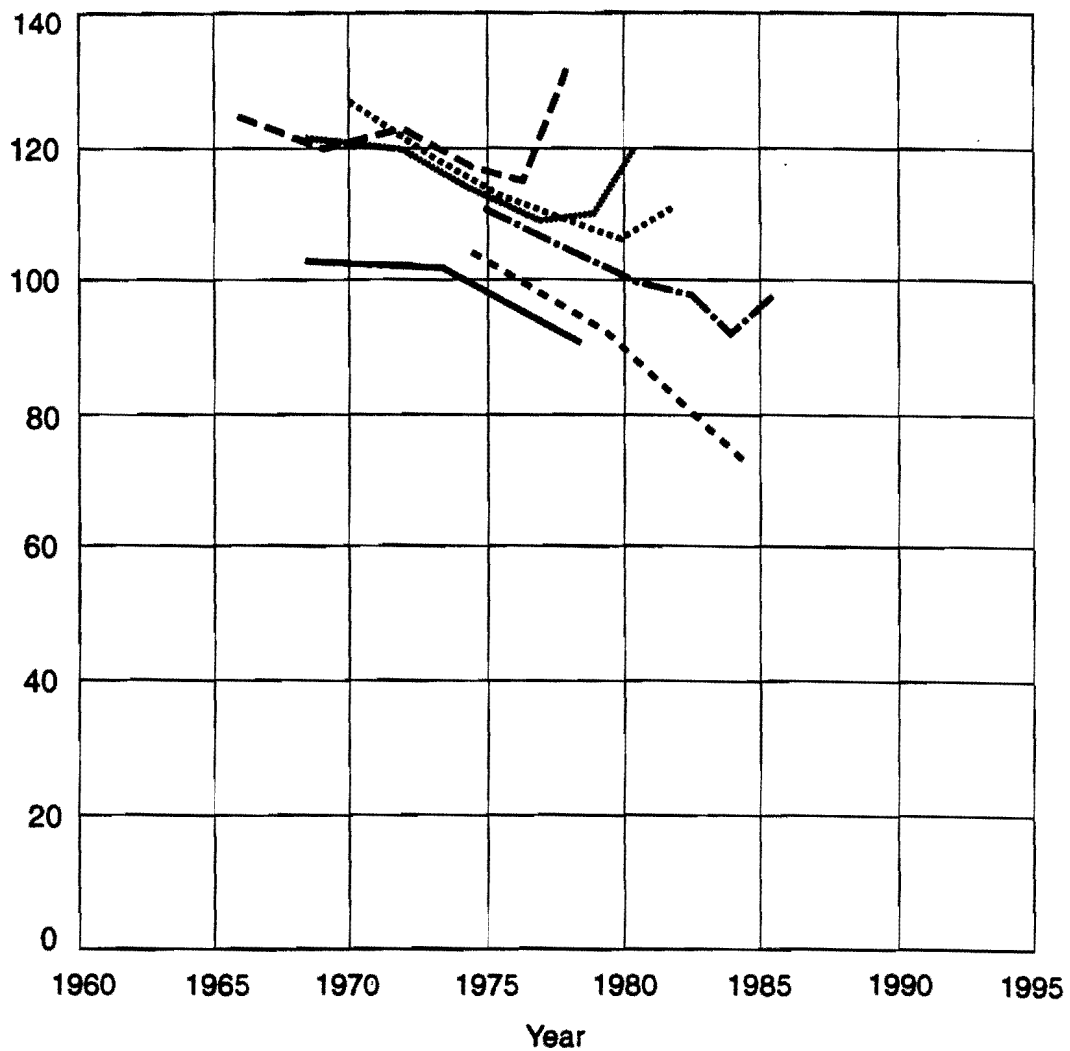
ENQUÊTE NATIONAL SUR LA PLANIFICATION FAMILIALE, LA FÉCONDITÉ ET LA SANTÉ
DE LA POPULATION AU MAROC (ENPS), APRIL-JULY 1987
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1985
15-19	0.065	0.108	1986.4	115	176
20-24	0.671	0.107	1985.5	98	141
25-29	2.128	0.113	1984.1	92	130
30-34	3.816	0.132	1982.4	98	142
35-39	5.231	0.143	1980.4	100	146
40-44	6.690	0.163	1978.0	105	156
45-49	7.341	0.187	1974.8	111	167

Source: Mustapha Azelmat, Mohamed Ayad and Houcine Belhachmi, *Enquête nationale sur la planification familiale, la fécondité et la santé de la population au Maroc (ENPS), 1987* (Rabat, Ministère de la santé publique, Service des études et de l'information sanitaire; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1989), p. 78, table 6.1.

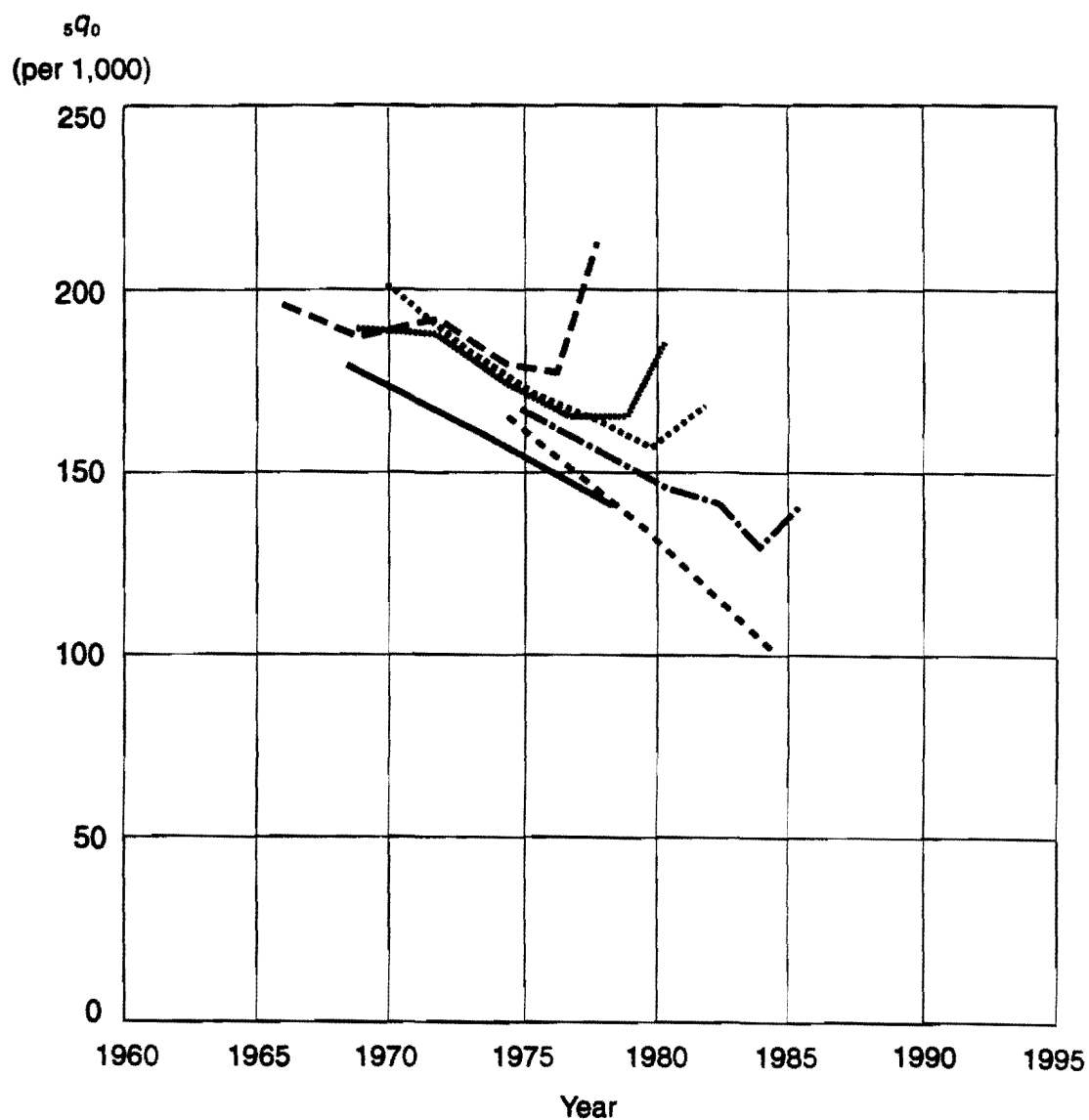
Infant mortality: Morocco

${}_1q_0$
(per 1,000)



- Enquête nationale sur la fécondité, 1980 (direct)
- Enquête nationale sur la fécondité, 1980 (Indirect)
- Census, 1982 (Indirect)
- Planification familiale, fécondité et santé familiale, 1984 (indirect)
- . - . Enquête nationale sur la planification familiale, la fécondité et la santé, 1987 (direct)
- - - - Enquête nationale sur la planification familiale, la fécondité et la santé, 1987 (Indirect)

Under-five mortality: Morocco



- Enquête nationale sur la fécondité, 1980 (direct)
- - Enquête nationale sur la fécondité, 1980 (indirect)
- Census, 1982 (Indirect)
- Planification familiale, fécondité et santé familiale, 1984 (Indirect)
- - - Enquête nationale sur la planification familiale, la fécondité et la santé, 1987 (direct)
- . - Enquête nationale sur la planification familiale, la fécondité et la santé, 1987 (indirect)

MOZAMBIQUE

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1970 and 1980 censuses.

Sample surveys

No relevant data are available.

CENSUS, 15 SEPTEMBER 1970
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.254	0.194	1970.7	264	469
20-24	1.915	0.197	1968.8	141	231
25-29	2.443	0.203	1965.4	121	189
30-34	3.293	0.216	1961.2	121	189
35-39	3.928	0.231	1956.5	123	193
40-44	4.142	0.256	1952.1	128	203
45-49	4.187	0.288	1948.7	134	216

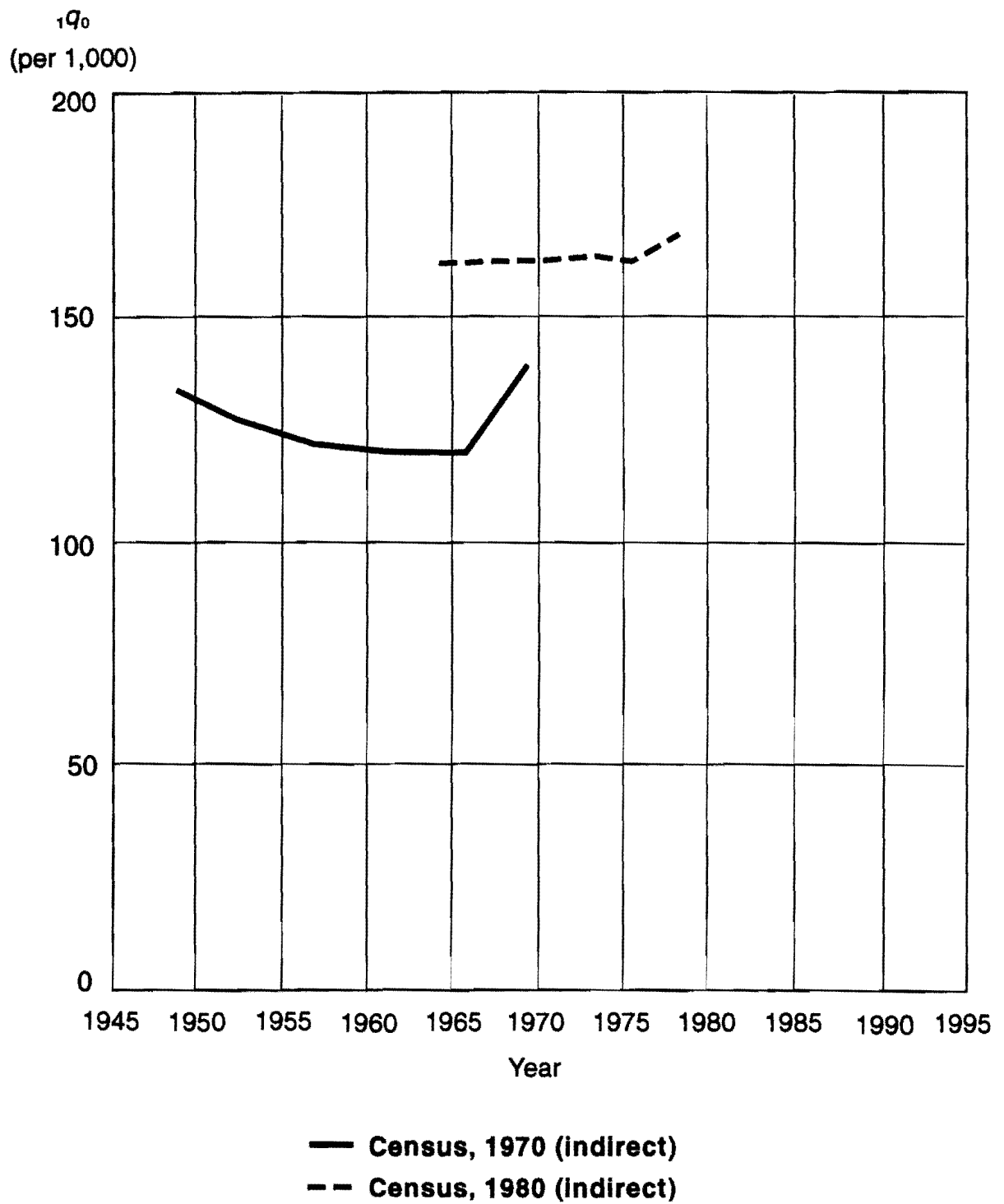
Source: Carlos A. de Costa Carvalho, "Essai de détermination des niveaux de fécondité et de mortalité de la population noire du Mozambique à partir des résultats du recensement de 1970", Working paper No. 73, Louvain-la-Neuve, Belgium, Université Catholique de Louvain, Département de démographie, 1979, pp. 25 and 44.

CENSUS, 1-15 AUGUST 1980
(Indirect estimates, South model)

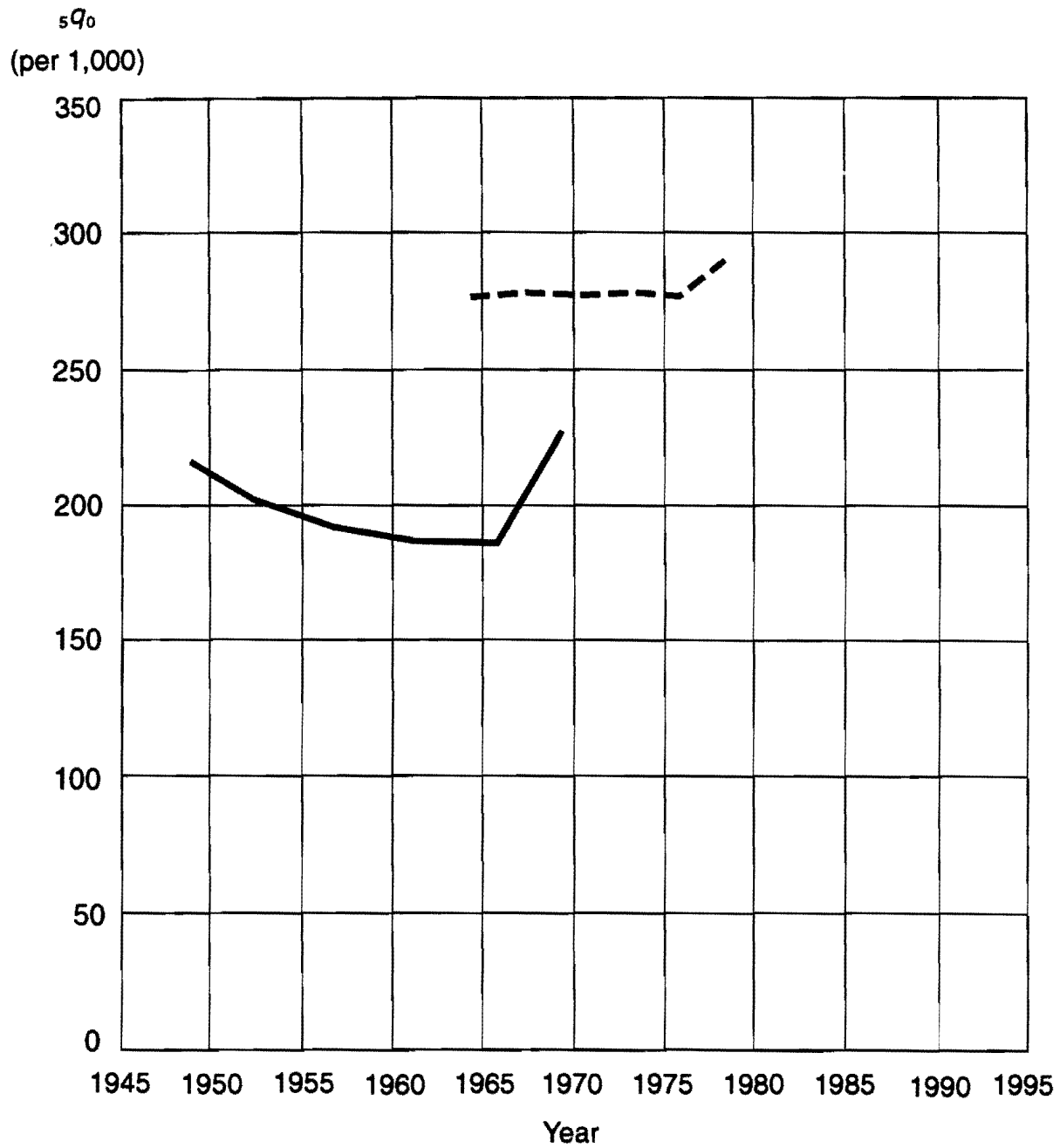
Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.497	0.226	1979.4	199	349
20-24	2.029	0.251	1977.8	170	294
25-29	3.306	0.269	1975.5	164	281
30-34	4.537	0.288	1972.9	165	282
35-39	5.200	0.303	1970.0	164	281
40-44	5.569	0.320	1966.9	164	281
45-49	5.589	0.338	1963.8	163	279

Source: Mozambique, *Tabulações não publicadas do censo de população, 1980* (Maputo, National Directorate of Statistics, National Planning Commission, 1983), pp. 1-2, tables 22-23.

Infant mortality: Mozambique



Under-five mortality: Mozambique



— Census, 1970 (indirect)

-- Census, 1980 (indirect)

MYANMAR

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1983 census.

Sample surveys

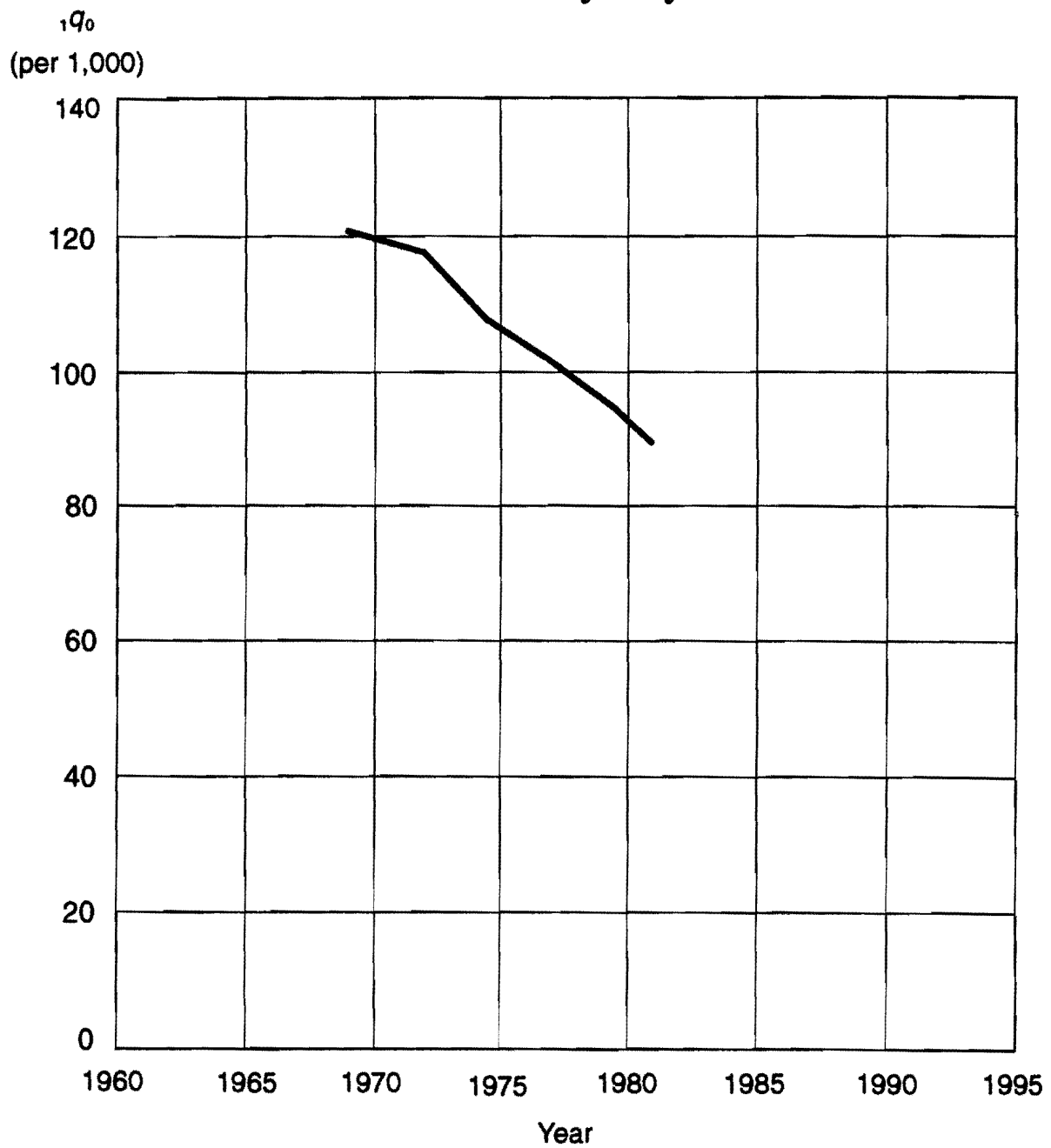
No relevant information is available.

CENSUS, 31 MARCH 1983
(Indirect estimates, West model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1980</i>
15-19	0.098	0.084	1982.3	96	137
20-24	0.845	0.101	1981.1	90	128
25-29	2.044	0.123	1979.4	95	136
30-34	3.383	0.144	1977.2	102	147
35-39	4.465	0.165	1974.7	108	157
40-44	5.611	0.194	1972.1	118	172
45-49	5.617	0.218	1969.1	121	178

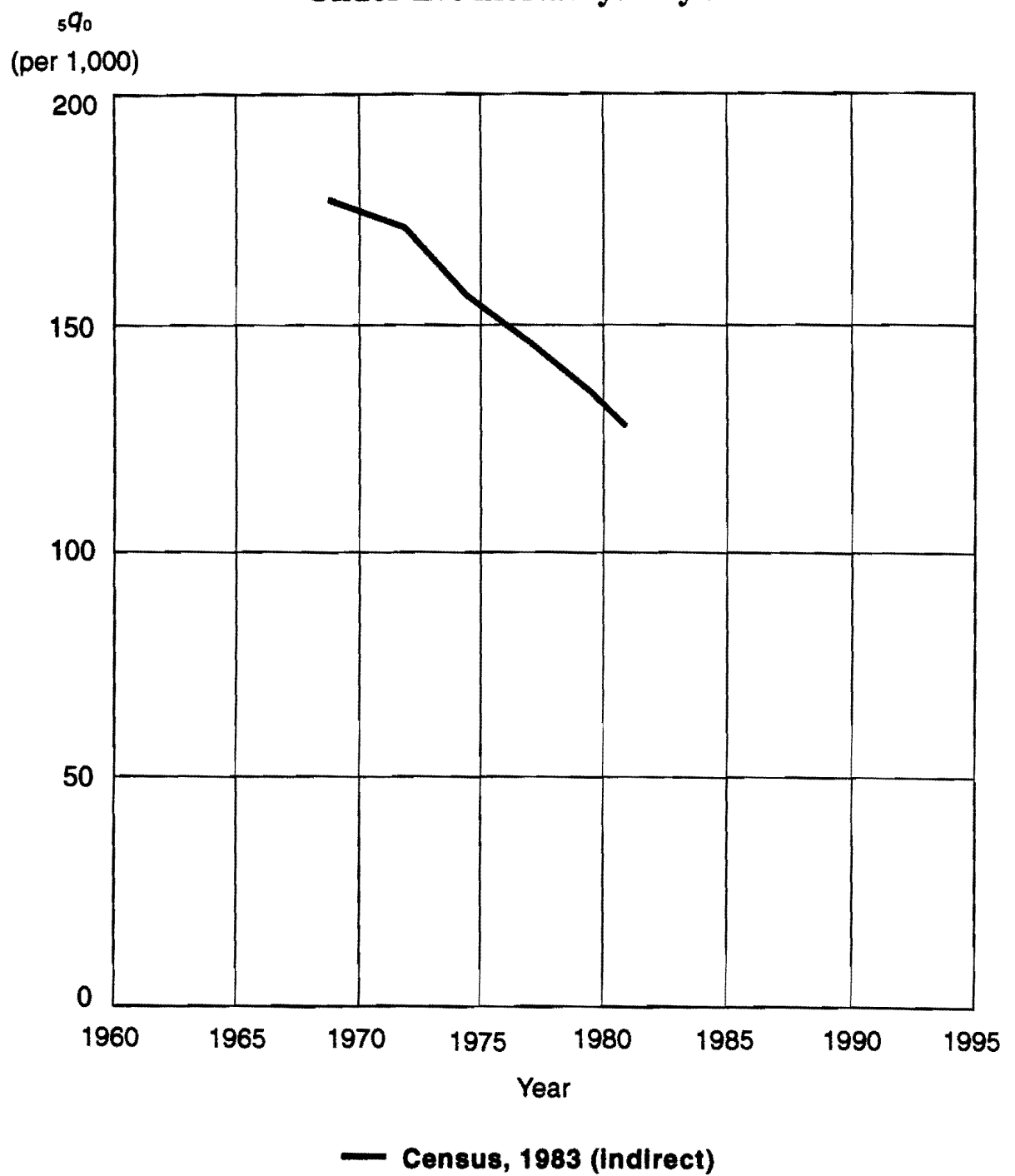
Source: Data provided to the United Nations Statistical Office.

Infant mortality: Myanmar



— Census, 1983 (indirect)

Under-five mortality: Myanmar



NEPAL

Vital registration

Completeness of death registration not reported.

Censuses

Brass questions were included in the 1971 and 1981 censuses.

Sample surveys

Maternity histories were collected in 1976 by the Nepal Fertility Survey (WFS). Truncated five-year maternity histories were collected in 1981 by the Nepal Contraceptive Prevalence Survey. Brass questions were included in the Nepal Fertility and Family Planning Survey of 1986, which collected maternity histories, but only estimates of infant mortality rates have been published. In 1974-1975, 1976 and 1977-1978, the Demographic Sample Survey collected information on births and deaths in the year before each survey. Data from the Demographic Sample Survey of 1986-1987 were not available for this report.

CENSUS, 22 JUNE 1971
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.160	0.114	1970.5	124	183
20-24	1.025	0.126	1969.1	107	156
25-29	2.135	0.136	1967.2	102	148
30-34	3.051	0.150	1964.8	104	151
35-39	3.688	0.166	1962.2	107	155
40-44	3.950	0.186	1959.5	112	162
45-49	3.977	0.207	1956.5	114	166

Source: *Demographic Yearbook—Special Issue: Historical Supplement* (United Nations publication, Sales No. E/F.79.XIII.8), p. 518, table 7.

DEMOGRAPHIC SAMPLE SURVEY, 1974-1978
(Direct estimates)

Period	Mortality rate (per 1,000)
	1970
1974-1975	133
1976	134
1977-1978	104

Source: *Population Monograph of Nepal* (Kathmandu, National Planning Commission Secretariat, Central Bureau of Statistics, 1987) p. 300, table 13.2.

NEPAL FERTILITY SURVEY, 1 APRIL-20 JUNE 1976
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1961-1966	181	288
1966-1971	159	250
1971-1976	142	235

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 62.

NEPAL FERTILITY SURVEY, 1 APRIL-20 JUNE 1976
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.200	0.180	1975.4	198	296
20-24	1.348	0.213	1974.1	178	267
25-29	2.853	0.225	1972.2	164	245
30-34	4.047	0.252	1969.8	169	253
35-39	5.083	0.272	1967.2	172	257
40-44	5.536	0.307	1964.4	181	271
45-49	5.767	0.316	1961.5	173	258

Source: World Fertility Survey standard recode tapes.

NEPAL CONTRACEPTIVE PREVALENCE SURVEY, 27 JANUARY-22 JUNE 1981
(Direct estimates)

Year	Mortality rate (per 1,000)	
	1960	1970
1976	37	
1977	47	
1978	54	
1979	54	
1980	98	

Source: Bhakta B. Gubhaju and others, "Infant mortality trends and differentials in Nepal", *Studies in Family Planning* (New York), vol. 18, No. 1 (January/February 1987), p. 25, table 2.

NEPAL CONTRACEPTIVE PREVALENCE SURVEY, 27 JANUARY-22 JUNE 1981
(Indirect estimates, West model)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.19	0.128	1980.4	146	218
20-24	1.32	0.217	1979.0	181	270
25-29	2.60	0.183	1976.9	132	196
30-34	..	0.214	1974.3	142	212
35-39	..	0.232	1971.5	144	214
40-44	..	0.263	1968.6	152	227
45-49	..	0.283	1965.6	151	226

Sources: *Nepal Contraceptive Prevalence Survey Report, 1981* (Kathmandu, Ministry of Health, Nepal Family Planning and Maternal Child Health Project; and Columbia, Maryland, Westinghouse Health Systems, 1983) p. 60, table 5.7; and data provided to the United Nations Statistical Office.

^a Average parities for currently married women adjusted by applying the proportion currently married from the 1981 census.

CENSUS, 22 JUNE 1981
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.222	0.286	1980.2	273	401
20-24	1.031	0.180	1978.8	144	215
25-29	1.990	0.162	1976.8	118	173
30-34	2.796	0.163	1974.6	112	163
35-39	3.309	0.175	1972.1	113	164
40-44	3.569	0.191	1969.5	114	167
45-49	3.582	0.207	1966.6	114	166

Source: Nepal, National Planning Commission Secretariat, Central Bureau of Statistics, "Intercensal changes of some key census variables, Nepal, 1952/54-81", paper presented at the Data Users' Meeting, Kathmandu, 4-5 March 1985, p. 81, table 7.3.

NEPAL FERTILITY AND FAMILY PLANNING SURVEY, 28 DECEMBER 1985-30 APRIL 1986
(Direct estimates)

Period	Mortality rate (per 1,000)	Period	Mortality rate (per 1,000)
	190		190
1971	134	1979	90
1972	134	1980	90
1973	155	1981	95
1974	89	1982	91
1975	115	1983	107
1976	91	1984	103
1977	107	1985	78
1978	116		

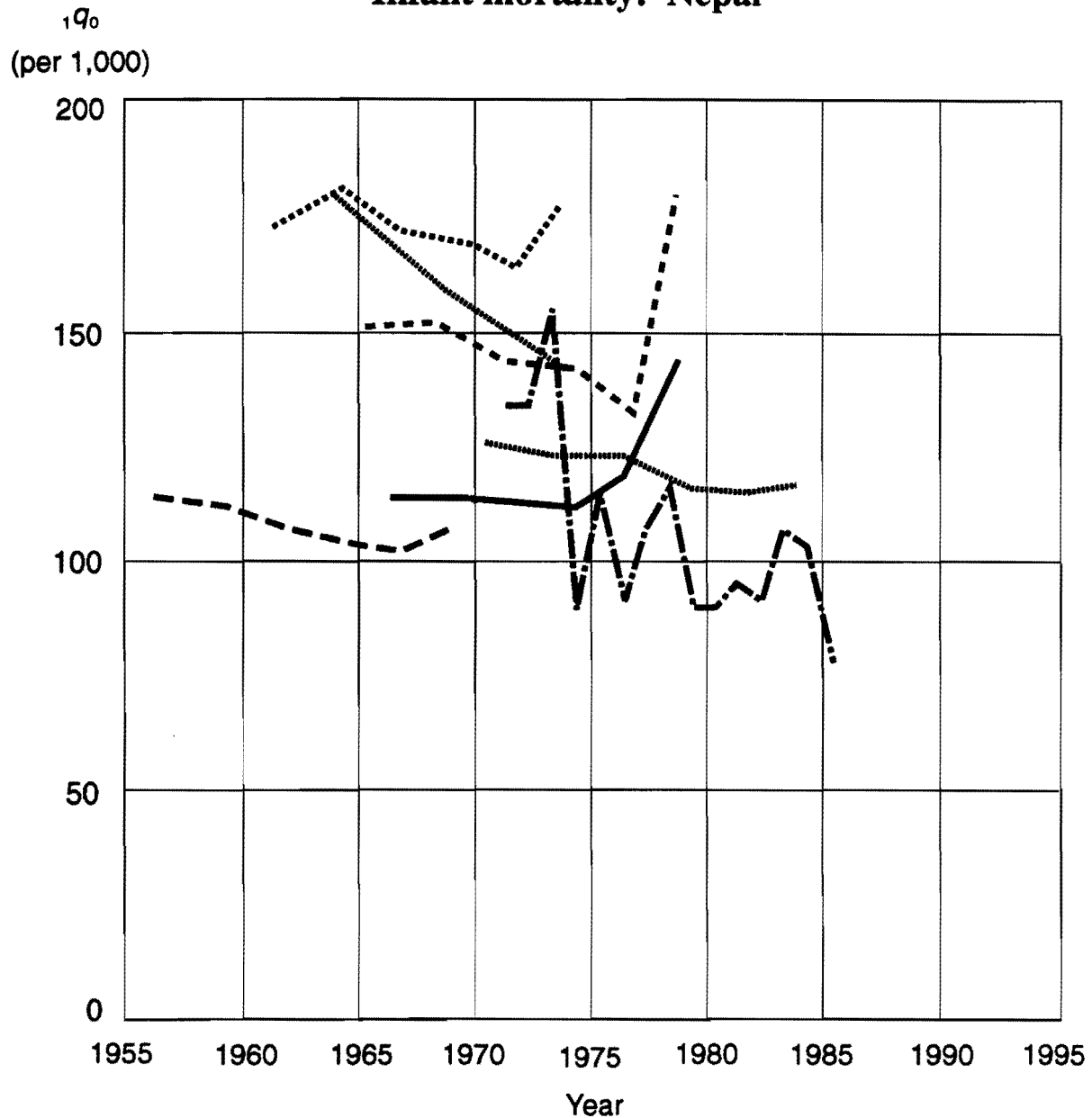
Source: *Nepal Fertility and Family Planning Survey Report, 1986* (Kathmandu, Ministry of Health, Nepal Family Planning and Maternal Child Health Project, 1987), p. 80, table 8.1.

NEPAL FERTILITY AND FAMILY PLANNING SURVEY, 28 DECEMBER 1985-30 APRIL 1986
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1986
15-19	0.174	0.132	1985.4	155	232
20-24	1.350	0.137	1984.0	117	171
25-29	2.703	0.156	1981.9	115	167
30-34	3.740	0.172	1979.3	116	170
35-39	4.502	0.197	1976.4	123	182
40-44	4.613	0.212	1973.5	123	182
45-49	4.679	0.236	1970.5	126	186

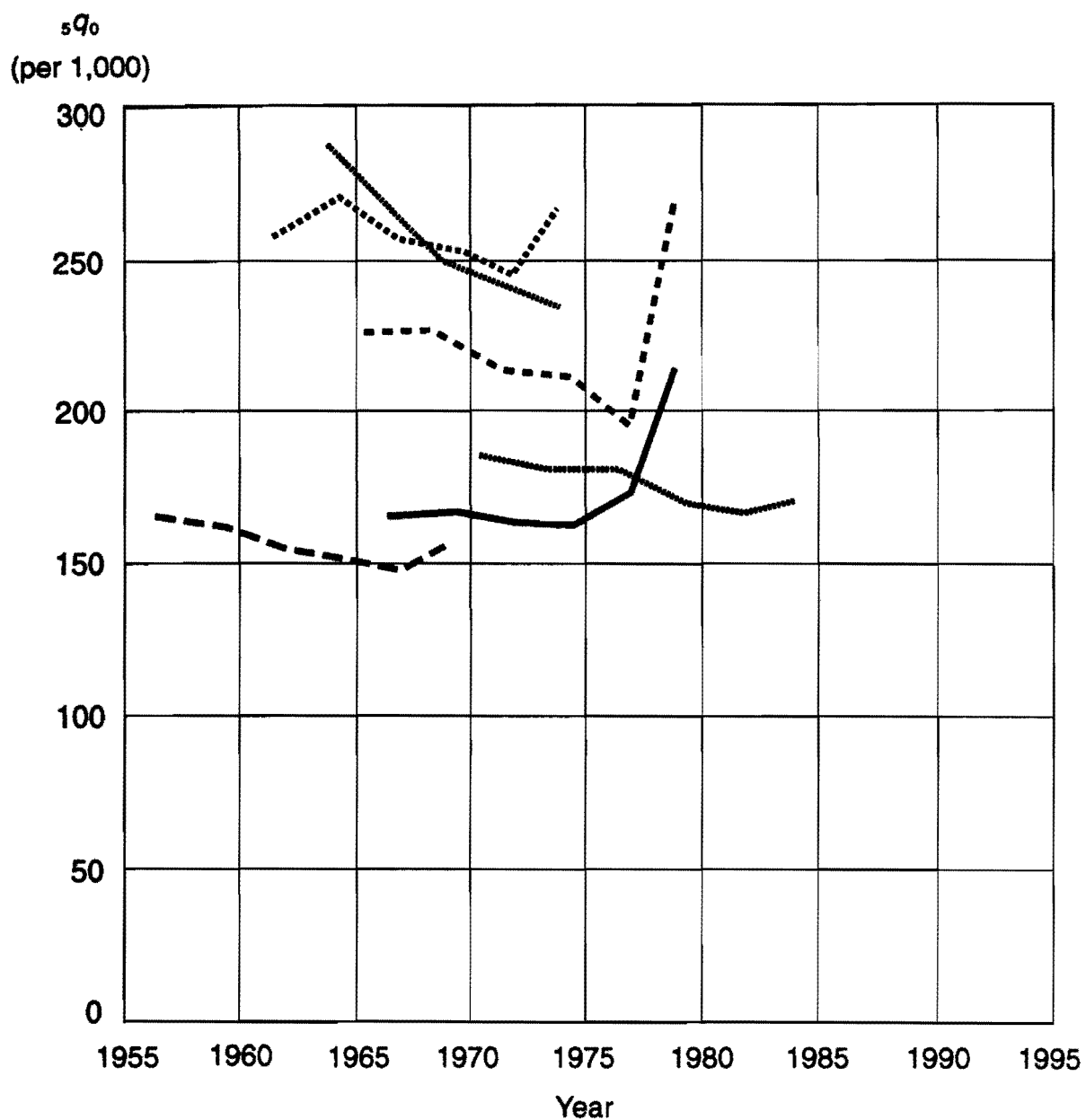
Source: *Nepal Fertility and Family Planning Survey Report, 1986* (Kathmandu, Ministry of Health, Nepal Family Planning and Maternal Child Health Project, 1987), pp. 185 and 187, appendices 6E and 7A.

Infant mortality: Nepal



- Census, 1971 (Indirect)
- Nepal Fertility Survey, 1976 (direct)
- Nepal Fertility Survey, 1976 (Indirect)
- - - Nepal Contraceptive Prevalence Survey, 1981 (indirect)
- Census, 1981 (Indirect)
- Nepal Fertility and Family Planning Survey, 1986 (direct)
- Nepal Fertility and Family Planning Survey, 1986 (Indirect)

Under-five mortality: Nepal



- Census, 1971 (Indirect)
- Nepal Fertility Survey, 1976 (direct)
- Nepal Fertility Survey, 1976 (Indirect)
- - - Nepal Contraceptive Prevalence Survey, 1981 (indirect)
- Census, 1981 (Indirect)
- Nepal Fertility and Family Planning Survey, 1986 (Indirect)

NICARAGUA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1971 census.

Sample surveys

Brass questions were included in the 1978 round of the multi-round Encuesta Demográfica Nacional and in the Encuesta Socio-demográfica Nicaragüense of 1985. A multi-round survey with four rounds, the Encuesta Demográfica Nacional, was held from 1976 to 1978.

CENSUS, 20 APRIL 1971
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.258	0.140	1970.3	151	225
20-24	1.633	0.153	1969.0	129	190
25-29	3.454	0.163	1967.0	121	177
30-34	5.052	0.178	1964.7	122	179
35-39	6.241	0.202	1962.2	128	190
40-44	6.651	0.224	1959.5	132	196
45-49	6.805	0.255	1956.6	139	207

Source: Nicaragua, *Censos Nacionales, 1971, Población*, vol. I, *Características generales* (Managua, Ministerio de Economía, Industria y Comercio, 1974), p. 331, table 7.

ENCUESTA RETROSPECTIVA DEMOGRÁFICA NACIONAL, DECEMBER 1977-FEBRUARY 1978
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.27	0.098	1977.1	107	155
20-24	1.64	0.114	1975.7	96	138
25-29	3.20	0.129	1973.6	96	138
30-34	4.99	0.148	1971.1	102	147
35-39	6.27	0.180	1968.4	114	167
40-44	7.19	0.200	1965.5	118	172
45-49	7.38	0.225	1962.6	121	178

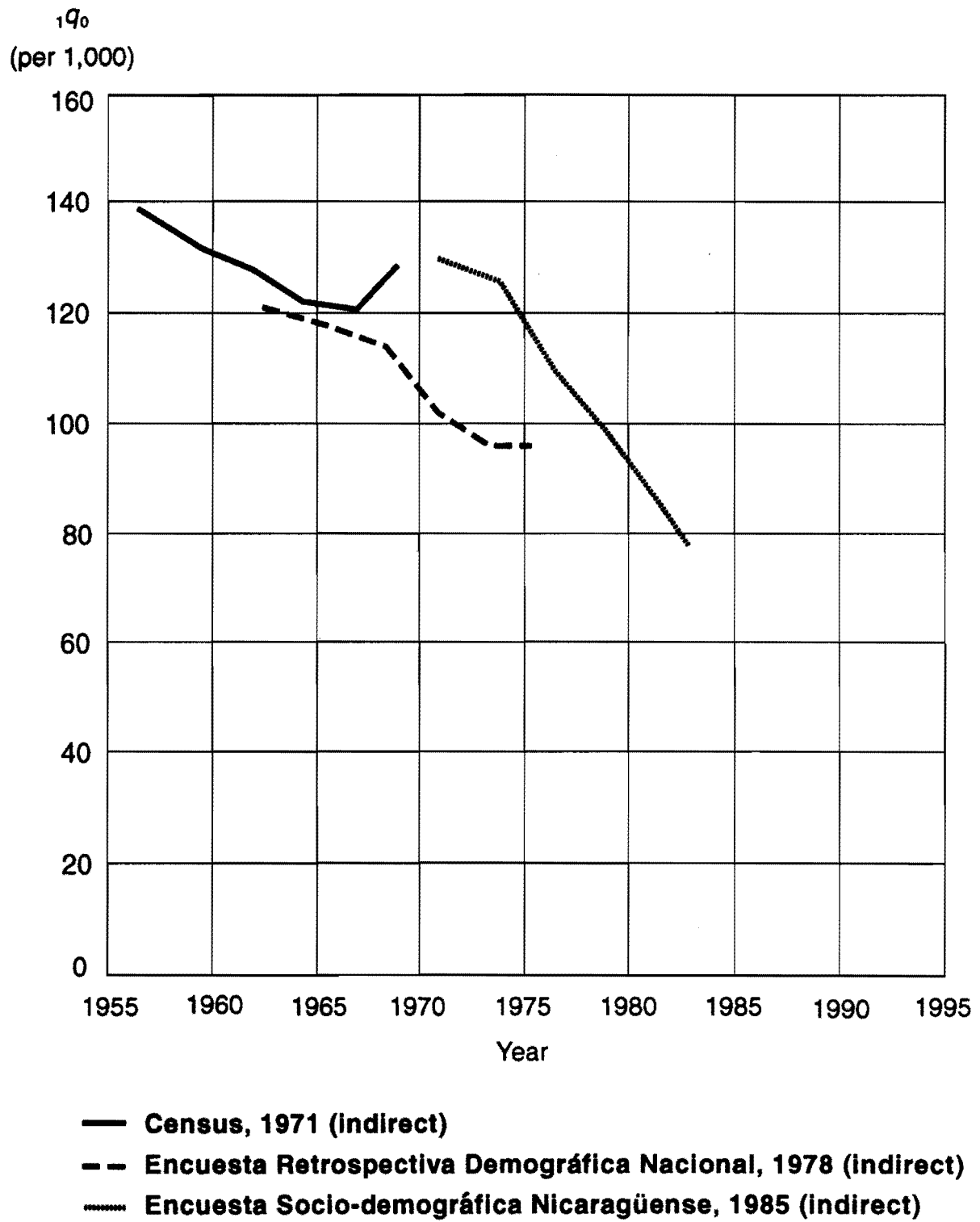
Source: Dirk Jaspers Fajter, *Encuesta Demográfica Nacional de Nicaragua: análisis de las preguntas retrospectivas* (San José, Costa Rica, Centro Latinoamericano de Demografía, 1982), pp. 22 and 115, tables 5 and B.2.

ENCUESTA SOCIO-DEMOGRÁFICA NICARAGÜENSE, JULY 1985-MARCH 1986
(Indirect estimates, West model)

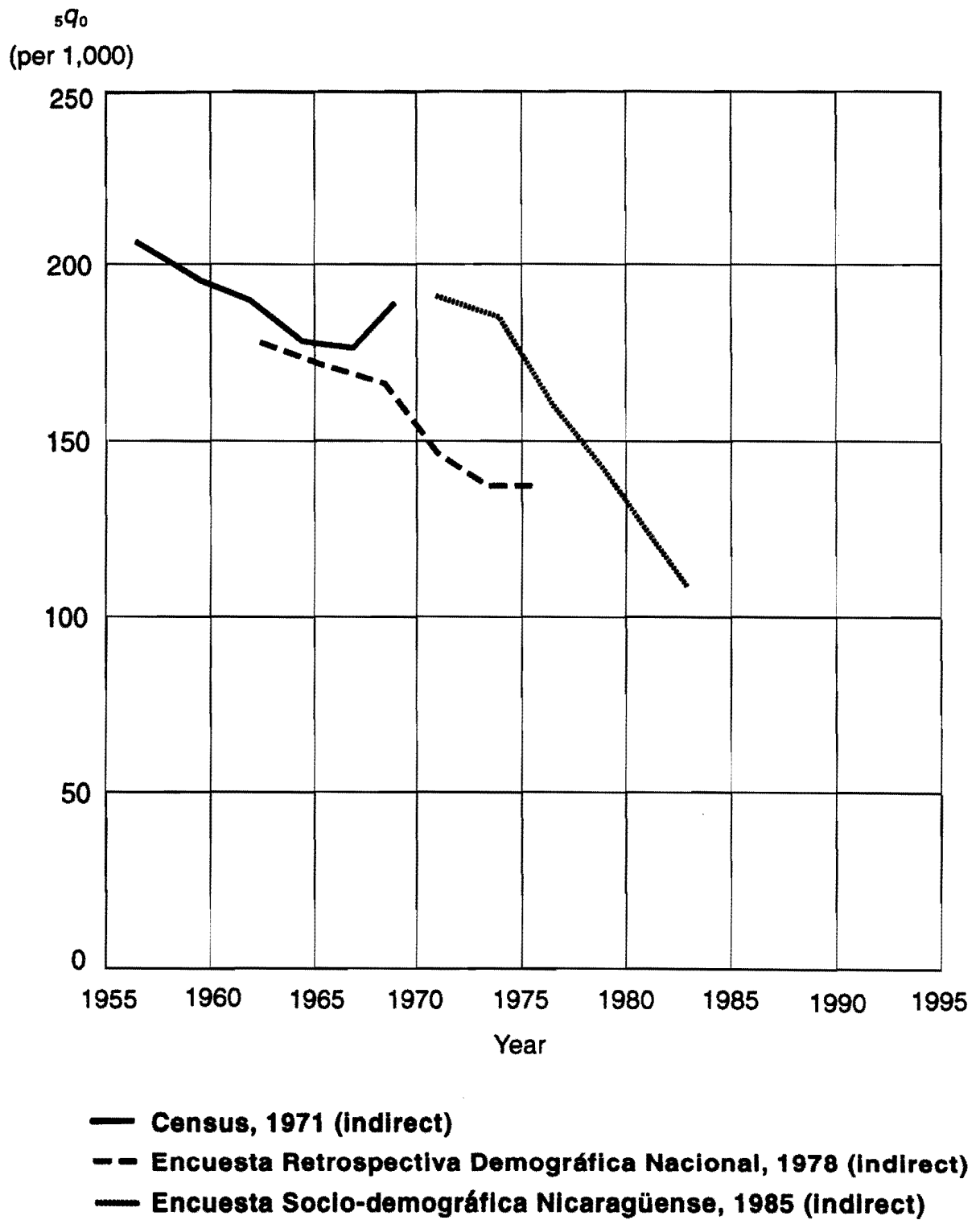
Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.337	0.070	1984.6	66	90
20-24	1.545	0.093	1983.2	78	109
25-29	3.020	0.114	1981.3	86	122
30-34	4.365	0.142	1979.1	99	143
35-39	5.750	0.171	1976.7	110	161
40-44	6.682	0.212	1974.1	126	186
45-49	7.390	0.238	1971.2	130	192

Source: *Encuesta Socio-demográfica Nicaragüense, 1985: tabulaciones básicas*, vol. II, *Características demográficas de la población* (Managua, Nicaragua, Instituto Nacional de Estadísticas y Censos; and United Nations, 1989), p. 7, table II.3.

Infant mortality: Nicaragua



Under-five mortality: Nicaragua



NIGERIA

Vital registration

Completeness of death registration is not reported.

Censuses

No relevant data are available.

Sample surveys

Birth histories were collected in 1981/82 by the Nigerian Fertility Survey (WFS) and in 1990 by the Demographic and Health Survey, although full results from this latter survey are not yet available.

NIGERIA FERTILITY SURVEY, OCTOBER 1981-AUGUST 1982
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1980	1982
1967-1972	110	205
1972-1977	91	161
1977-1982	90	166

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, rev. ed., World Fertility Survey Comparative Studies, No. 43 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 55.

NIGERIA FERTILITY SURVEY, OCTOBER 1981-AUGUST 1982
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1982
15-19	0.35	0.143	1981.1	145	245
20-24	1.79	0.151	1979.7	113	188
25-29	3.21	0.153	1977.7	98	160
30-34	4.32	0.150	1975.2	88	142
35-39	5.07	0.179	1972.5	96	157
40-44	5.13	0.220	1969.7	107	178
45-49	5.84	0.235	1966.8	105	173

Source: *The Nigeria Fertility Survey, 1981/82, Principal Report*, vol. I, *Methodology and Findings* (Lagos, National Population Bureau; and Voorburg, Netherlands, International Statistical Institute, 1984), p. 89, table 5.17.

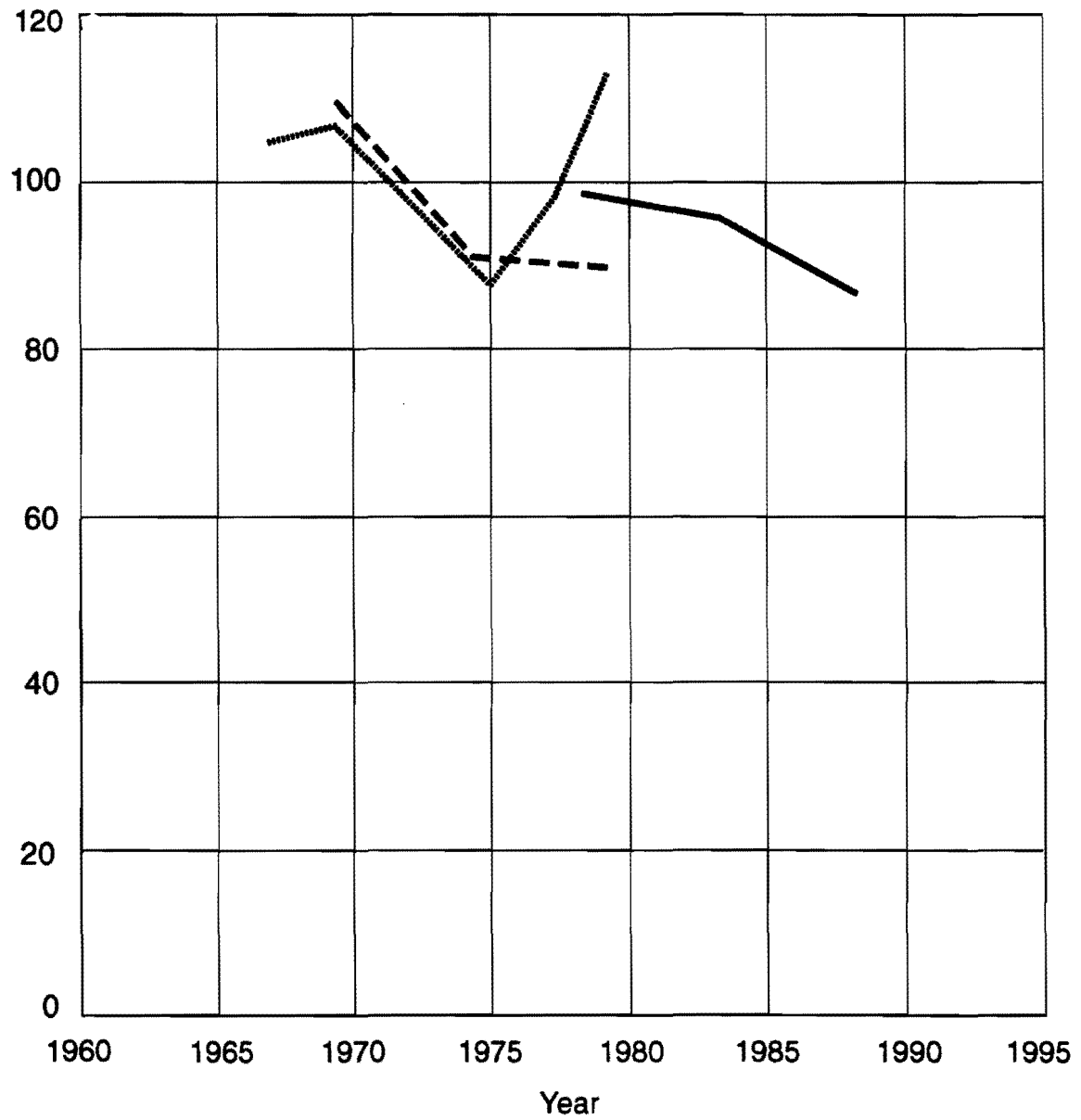
NIGERIA DEMOGRAPHIC AND HEALTH SURVEY, 1990
(Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>‰</i>	<i>‰</i>
1976-1980	99	201
1981-1985	96	189
1986-1990	87	192

Source: Preliminary unpublished tabulations provided by IRD/Macro International, Inc., Columbia, Maryland.

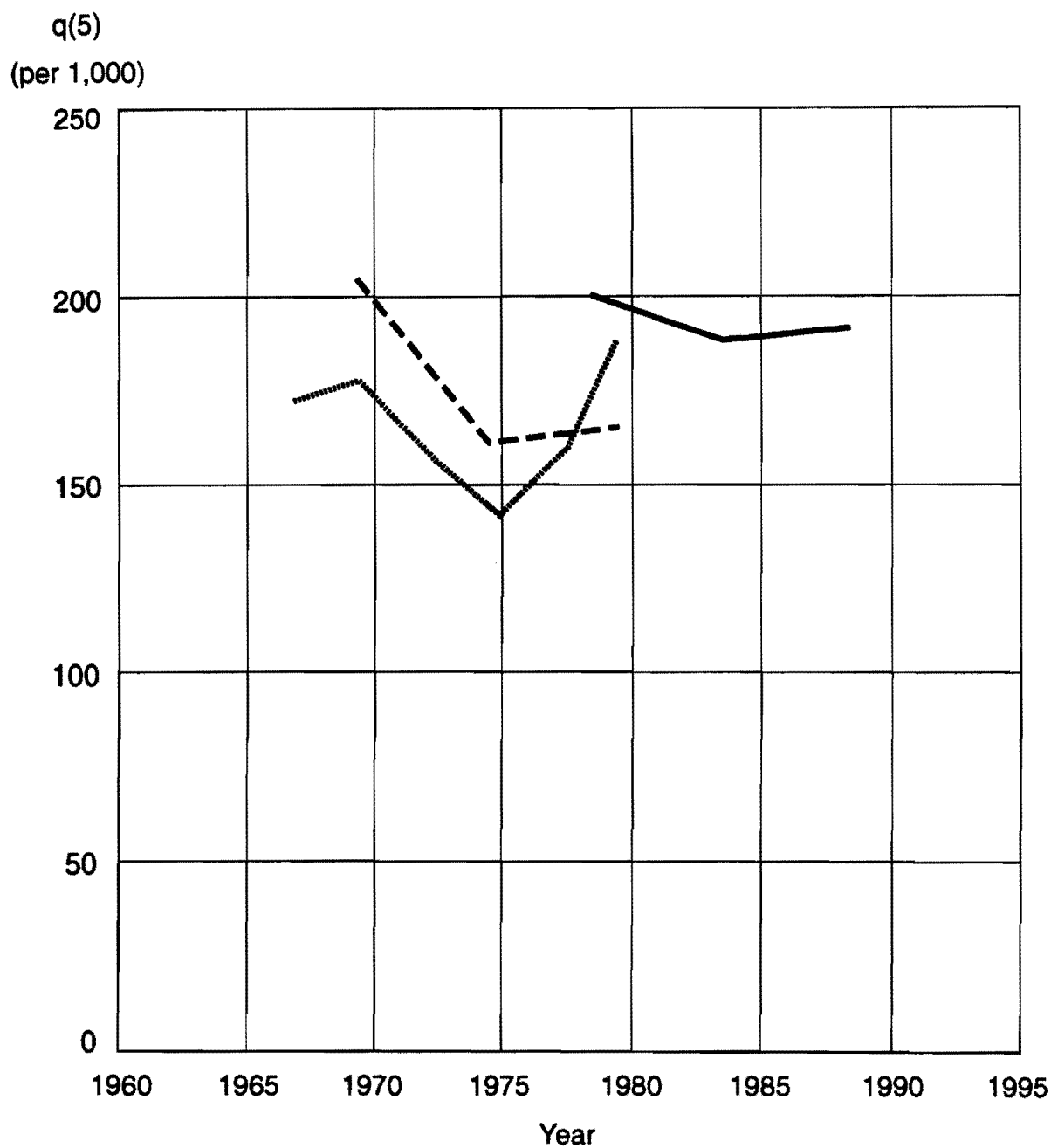
Infant mortality: Nigeria

${}_1q_0$
(per 1,000)



- Nigeria Fertility Survey, 1981 (direct)
- Nigeria Fertility Survey, 1981 (Indirect)
- Nigeria Demographic and Health Survey, 1990 (direct)

Under-five mortality: Nigeria



- Nigeria Fertility Survey, 1981 (direct)
- Nigeria Fertility Survey, 1981 (indirect)
- Nigeria Demographic and Health Survey, 1990 (direct)

PAKISTAN

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1973 post-enumeration survey (known as the Household Economic and Demographic Survey) to the 1972 census and in a sample of the 1981 census.

Sample surveys

Maternity histories were collected in 1975 by the Pakistan Fertility Survey (WFS) and in 1980 by the Pakistan Labour Force and Migration Survey. Brass questions were included in the Pakistan Contraceptive Prevalence Survey (CPS) 1984-1985. Four multi-round surveys have been conducted: (a) the Population Growth Estimation Experiment (PGE), a dual-record survey with continuous registration, during 1962-1965; (b) Population Growth Survey I (PGS I) during 1968-1971; (c) Population Growth Survey II (PGS II) during 1976-1979; and (d) the Pakistan Demographic Survey (PDS) from 1984 to the present. Brass questions were included in the 1971 PGS I and in the 1984 and 1988 PDS.

POPULATION GROWTH ESTIMATION EXPERIMENT, 1962-1965
(Direct estimates)

Year	<u>Mortality rate (per 1,000)</u>
	1960
1962	159
1963	152
1964	141
1965	117

Source: M. Irfan, "Mortality trends and patterns in Pakistan", paper presented at the Interim Meeting of the Study Directors on the Analysis of Trends and Patterns of Mortality in the ESCAP Region, Chiangmai, Thailand, 4-8 November 1985 (Bangkok, United Nations, Economic and Social Commission for Asia and the Pacific).

POPULATION GROWTH SURVEY I, 1968-1971
(Direct estimates)

Year	<u>Mortality rate (per 1,000)</u>
	1960
1968	124
1969	111
1970	109
1971	106

Source: M. Irfan, "Mortality trends and patterns in Pakistan", paper presented at the Interim Meeting of the Study Directors on the Analysis of Trends and Patterns of Mortality in the ESCAP Region, Chiangmai, Thailand, 4-8 November 1985; Bangkok, Economic and Social Commission for Asia and the Pacific.

POPULATION GROWTH SURVEY II, 1976-1978
(Direct estimates)

Year	Mortality rate (per 1,000)	
	1960	1970
1976	87	137
1977	100	144
1978	95	126

Source: J. G. C. Blacker, *Population Growth in Pakistan* (London, University of London, London School of Hygiene and Tropical Medicine, Centre for Population Studies, n.d.), tables 4.28-4.29.

PAKISTAN DEMOGRAPHIC SURVEY, 1984-1988
(Direct estimates)

Year	Mortality rate (per 1,000)	
	1960	1970
1984	127	157
1985	116	150
1986	106	133
1987	104	138
1988	108	143

Source: J. G. C. Blacker, "Report on an advisory mission to the Federal Bureau of Statistics, 14 October-11 November 1989", mimeographed.

PAKISTAN FERTILITY SURVEY, MAY-DECEMBER 1975
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1960-1965	142	228
1965-1970	136	200
1970-1975	139	207

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 65.

PAKISTAN LABOUR FORCE AND MIGRATION SURVEY, 1980
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1960-1965	126	191
1965-1970	116	169
1970-1975	125	160
1975-1980	125	160

Source: J. G. C. Blacker, *Population Growth in Pakistan* (London, University of London, London School of Hygiene and Tropical Medicine, Centre for Population Studies, n.d.), tables 4.28-4.29.

CENSUS, 1 MARCH 1981
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.136	0.171	1980.2	180	306
20-24	1.119	0.176	1979.0	145	238
25-29	2.571	0.173	1977.4	124	197
30-34	3.829	0.173	1975.3	114	178
35-39	4.886	0.178	1972.7	111	171
40-44	5.350	0.196	1969.7	115	180
45-49	5.644	0.211	1965.9	118	184

Source: J. G. C. Blacker, *Population Growth in Pakistan* (London, University of London, London School of Hygiene and Tropical Medicine, Centre for Population Studies, n.d.), tables 4.28 and 4.29.

PAKISTAN DEMOGRAPHIC SURVEY, AUGUST 1984
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.165	0.155	1983.5	156	259
20-24	1.200	0.132	1982.3	112	174
25-29	2.902	0.144	1980.8	107	164
30-34	4.369	0.148	1978.9	100	152
35-39	5.486	0.158	1976.6	100	152
40-44	6.111	0.167	1973.8	101	153
45-49	6.196	0.185	1970.2	106	162

Source: J. G. C. Blacker, "Report on an advisory mission to the Federal Bureau of Statistics, 14 October-11 November 1989", mimeographed.

PAKISTAN CONTRACEPTIVE PREVALENCE SURVEY, OCTOBER 1984-MARCH 1985
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.160	0.111	1983.9	114	178
20-24	1.260	0.151	1982.8	127	202
25-29	3.020	0.161	1981.2	117	183
30-34	4.700	0.158	1979.2	106	163
35-39	5.770	0.168	1976.8	106	162
40-44	6.520	0.213	1973.9	123	195
45-49	..	..	1970.2	..	..

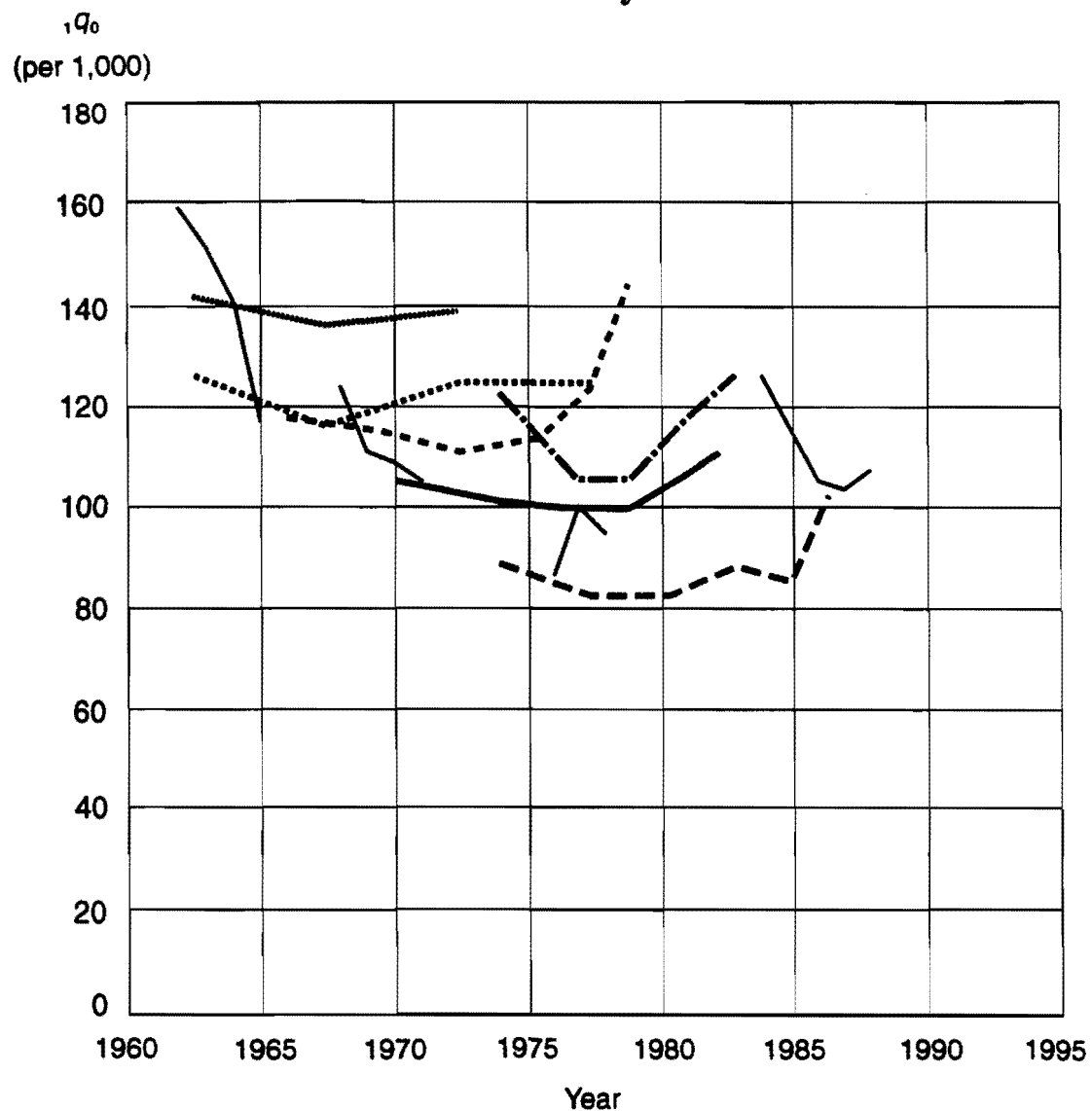
Source: *Pakistan Contraceptive Prevalence Survey, 1984-85* (Islamabad, Pakistan, Ministry of Planning and Development, Family Welfare Division, 1986), pp. 22, 173 and 175, tables III.6 and C-3.

PAKISTAN DEMOGRAPHIC SURVEY, JULY 1988
(Indirect estimates, South Asian pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.145	0.130	1987.5	135	217
20-24	1.189	0.119	1986.4	103	157
25-29	2.894	0.112	1984.9	86	126
30-34	4.407	0.129	1982.8	89	133
35-39	5.487	0.126	1980.4	83	122
40-44	6.046	0.132	1977.5	83	122
45-49	6.300	0.151	1973.9	89	133

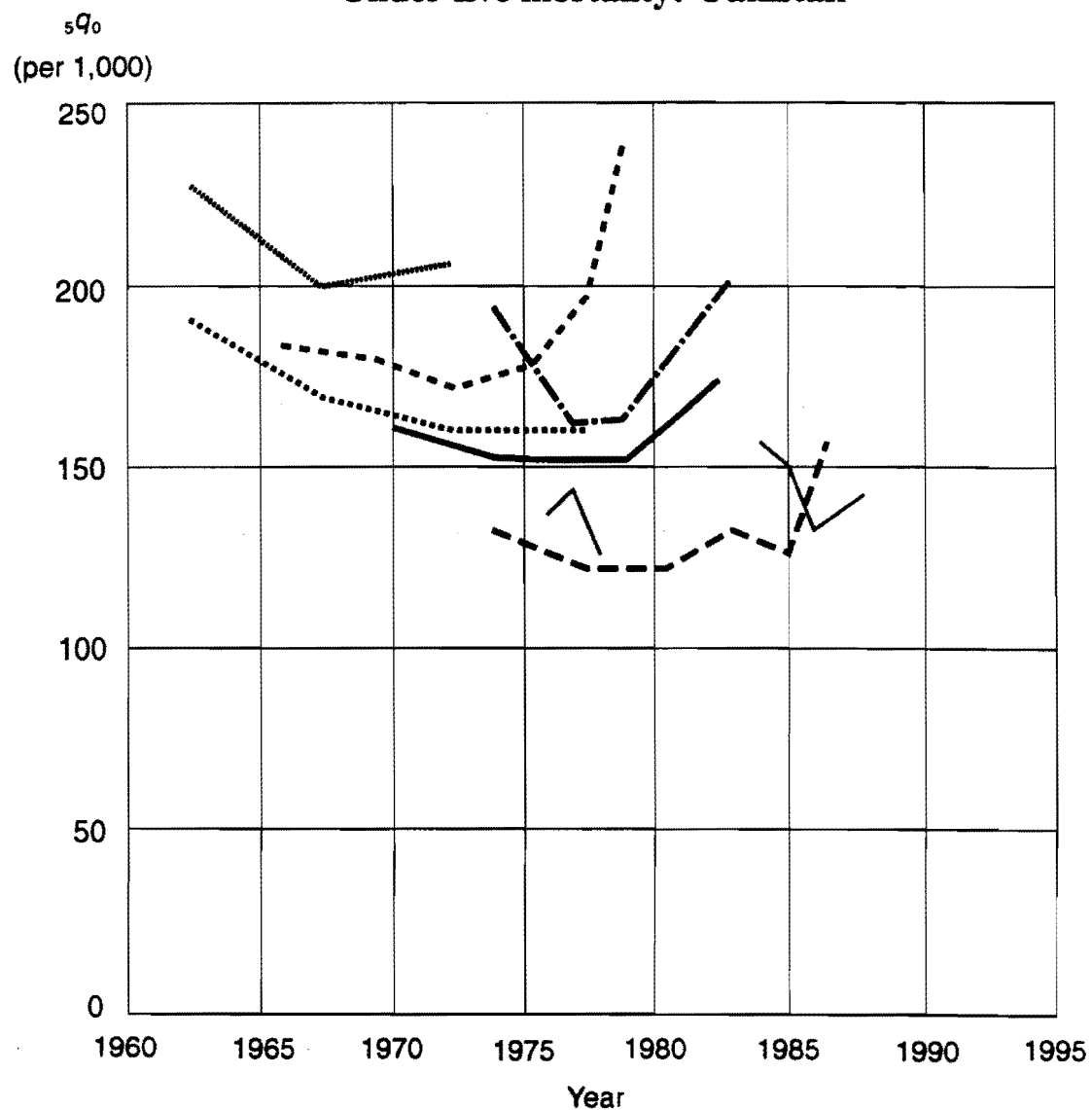
Source: J. G. C. Blacker, "Report on an advisory mission to the Federal Bureau of Statistics, 14 October-11 November 1989", mimeographed.

Infant mortality: Pakistan



- Population Growth Estimation Experiment, 1965; Population Growth Survey (PGS I), 1971; Population Growth Survey (PGS II), 1978; Pakistan Demographic Survey, 1988 (direct)
- Pakistan Fertility Survey, 1975 (direct)
- Pakistan Labour Force and Migration Survey, 1980 (direct)
- Census, 1981 (Indirect)
- Pakistan Demographic Survey, 1984 (Indirect)
- Pakistan Contraceptive Prevalence Survey, 1984 (indirect)
- Pakistan Demographic Survey, 1988 (Indirect)

Under-five mortality: Pakistan



- Population Growth Survey (PGS II), 1978; Pakistan Demographic Survey, 1988 (direct)
- Pakistan Fertility Survey, 1975 (direct)
- Pakistan Labour Force and Migration Survey, 1980 (direct)
- - - Census, 1981 (indirect)
- Pakistan Demographic Survey, 1984 (indirect)
- Pakistan Contraceptive Prevalence Survey, 1984 (indirect)
- - Pakistan Demographic Survey, 1988 (indirect)

PANAMA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1980 and 1990 censuses, but data from the 1990 census are not yet available. The 1980 data are based on a sample of 20 per cent of households, excluding the indigenous population.

Sample surveys

Maternity histories were collected in 1976 by the Encuesta Nacional de Fecundidad (WFS), although only women aged 20-49 were interviewed. Brass questions were included in the final round of a multi-round survey, the Encuesta Demográfica Nacional, conducted from 1975 to 1977.

VITAL REGISTRATION

Year	Infant mortality (per 1,000)	Year	Infant mortality (per 1,000)	Year	Infant mortality (per 1,000)
1960	57	1970	41	1980	22
1961	54	1971	38	1981	22
1962	43	1972	34	1982	20
1963	48	1973	33	1983	20
1964	43	1974	32	1984	20
1965	45	1975	31	1985	22
1966	45	1976	37	1986	19
1967	43	1977	28	1987	19
1968	40	1978	24	1988	19
1969	40	1979	25		

Source: *Panamá en cifras* (Panama, Dirección de Estadística y Censo, various years).

ENCUESTA DEMOGRÁFICA NACIONAL, JUNE 1975-FEBRUARY 1977 (Direct estimates)

Period	Mortality rate (per 1,000)	
	1975	1976
1975-1976	38	57

Source: *Encuesta Demográfica Nacional de Panamá, años 1975-1976*, vol. III, *Mortalidad* (Panama, Dirección de Estadística y Censo, 1979), p. 22, table 11.

ENCUESTA DEMOGRÁFICA NACIONAL RETROSPECTIVA, SEPTEMBER 1976-FEBRUARY 1977
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.207	0.072	1975.7	75	118
20-24	1.257	0.049	1974.5	42	61
25-29	2.602	0.066	1972.6	48	71
30-34	3.791	0.071	1970.5	48	70
35-39	4.935	0.095	1968.0	57	86
40-44	5.645	0.108	1965.4	59	89
45-49	5.673	0.131	1962.5	63	97

Source: *Encuesta Demográfica Nacional de Panamá, 1975-1977*, vol. I, *Informe general* (Panama, Dirección de Estadística y Censo, 1978), p. 83, table 33.

ENCUESTA NACIONAL DE FECUNDIDAD, DECEMBER 1975-APRIL 1976
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1961-1966	48	72
1966-1971	50	65
1971-1976	33	46

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 110.

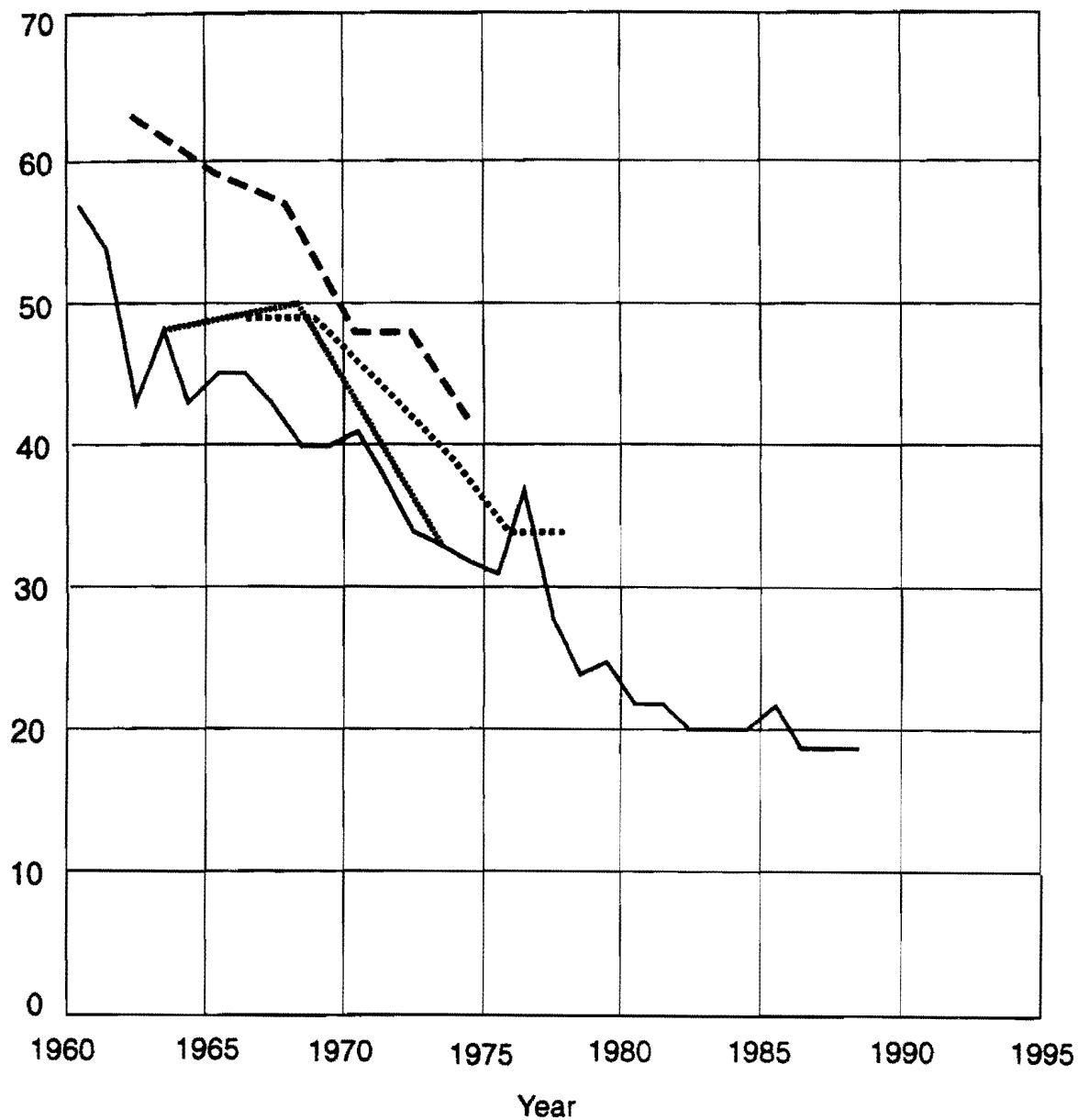
CENSUS, 11 MAY 1980
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.206	0.079	1979.2	77	122
20-24	1.094	0.039	1977.9	34	47
25-29	2.251	0.045	1976.2	34	47
30-34	3.326	0.056	1974.1	39	55
35-39	4.291	0.070	1971.7	44	65
40-44	5.119	0.086	1969.2	49	72
45-49	5.423	0.097	1966.3	49	72

Source: Panama, *Censos Nacionales de 1980: resultados avanzados por muestra*, vol. II, *Población* (Panama, Dirección de Estadística y Censo, 1983), p. 53, table P-11a.

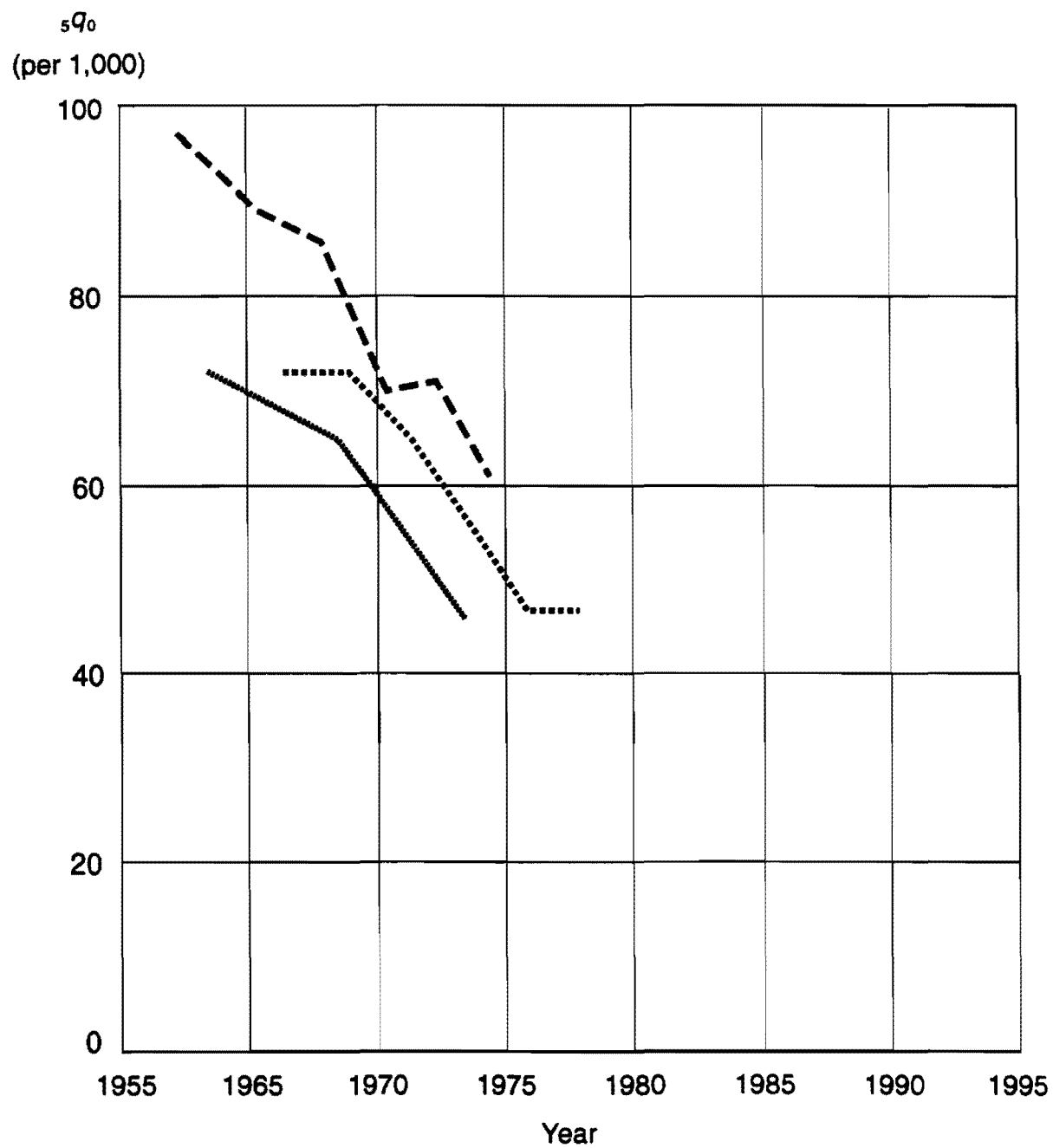
Infant mortality: Panama

${}_1q_0$
(per 1,000)



- Vital registration
- - Encuesta Demográfica Nacional Retrospectiva, 1976 (indirect)
- Encuesta Nacional de Fecundidad, 1976 (direct)
- Census, 1980 (indirect)

Under-five mortality: Panama



- Encuesta Demográfica Nacional Retrospectiva, 1976 (indirect)
- Encuesta Nacional de Fecundidad, 1976 (direct)
- Census, 1980 (indirect)

PAPUA NEW GUINEA

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1966, 1971 and 1980 censuses. Estimates from the 1966 census are not included here because they refer mainly to a period prior to 1960.

Sample surveys

No relevant information is available.

CENSUS, 7 JULY 1971 (Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19*	0.186	0.124	1970.6	141	210
20-24	1.343	0.161	1969.3	136	202
25-29	2.783	0.180	1967.3	132	195
30-34	3.836	0.198	1964.8	133	198
35-39	4.432	0.213	1962.1	134	198
40-44	4.662	0.239	1959.3	139	208
45-49	4.606	0.263	1956.3	141	211

Source: M. Rafiq, "Some evidence on recent demographic changes in Papua New Guinea", *Population Studies* (London), vol. 33, No. 2 (July 1979), pp. 307-312.

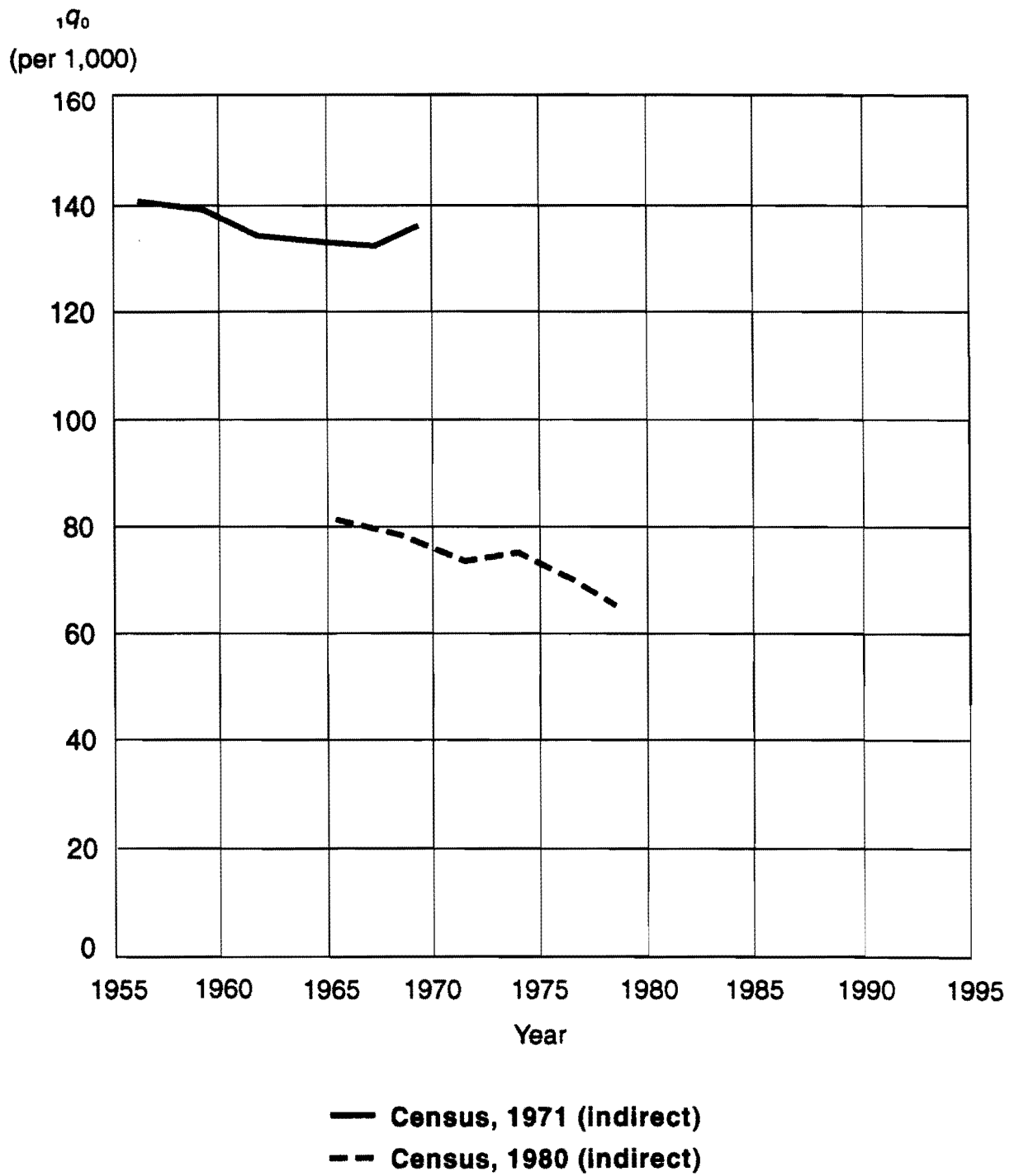
* Including children born to women under age 15.

CENSUS, 1 SEPTEMBER 1980 (Indirect estimates, West model)

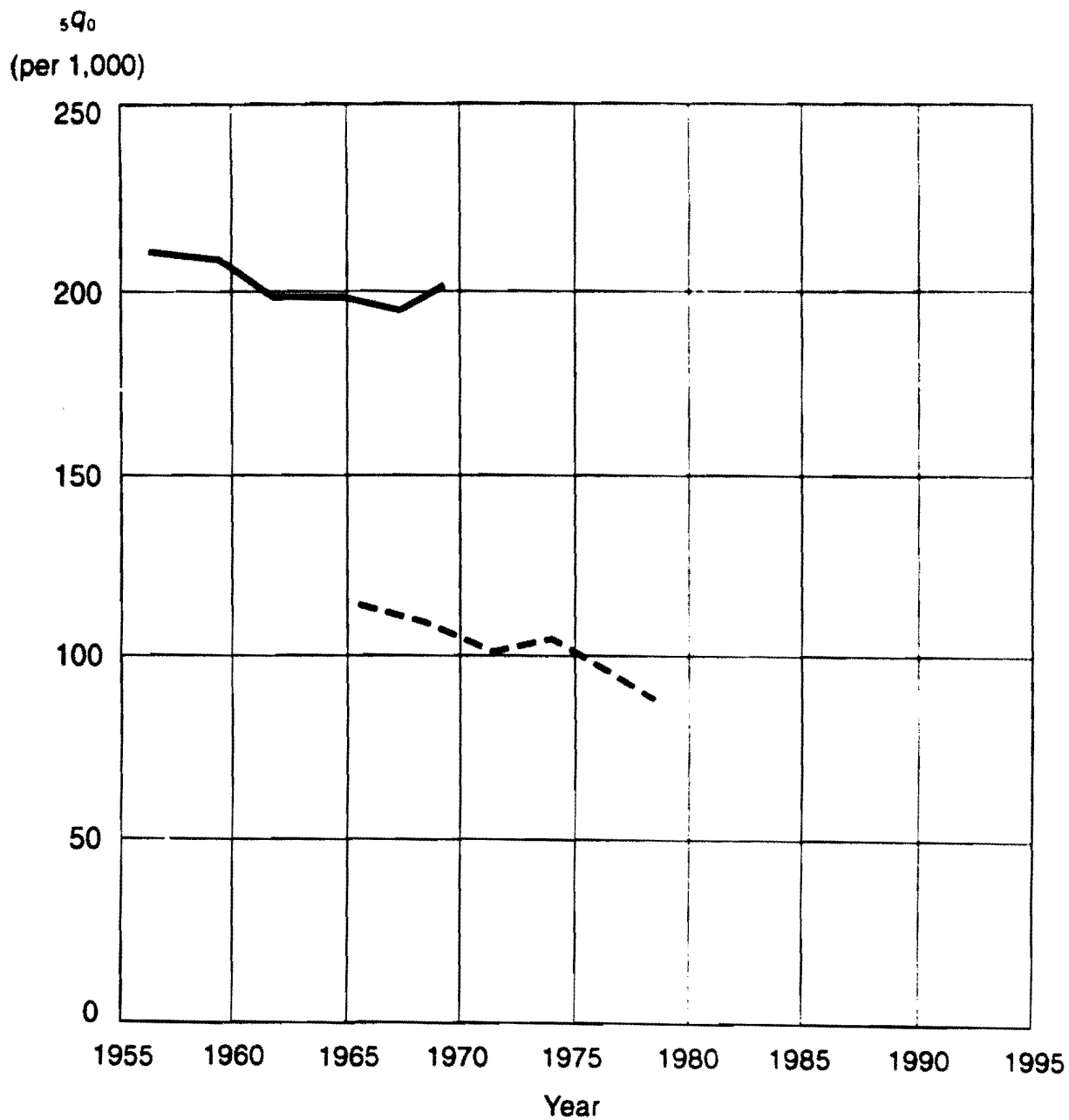
Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.106	0.067	1980.0	81	113
20-24	1.010	0.071	1978.7	65	88
25-29	2.175	0.089	1976.6	70	96
30-34	3.260	0.105	1974.1	75	105
35-39	4.178	0.109	1971.3	73	101
40-44	4.546	0.127	1968.4	78	109
45-49	4.475	0.145	1965.4	81	114

Source: Data provided to the United Nations Statistical Office.

Infant mortality: Papua New Guinea



Under-five mortality: Papua New Guinea



— Census, 1971 (indirect)
-- Census, 1980 (indirect)

PARAGUAY

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the censuses of 1972 and 1982; data from 1982 come from a 10 per cent sample.

Sample surveys

Maternity histories were collected in 1979 by the Encuesta Nacional de Fecundidad (WFS) and in 1990 by the Encuesta Nacional de Demografía y Salud (DHS). Brass questions were included in the Encuesta Demográfica Nacional of 1977. The data needed to derive indirect estimates on the basis of the 1990 DHS were not available.

CENSUS, 9 JULY 1972
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.145	0.079	1971.5	87	123
20-24	1.085	0.077	1970.4	70	96
25-29	2.563	0.077	1968.6	62	84
30-34	4.037	0.081	1966.5	61	83
35-39	5.308	0.092	1964.1	64	88
40-44	6.068	0.106	1961.4	68	94
45-49	6.219	0.120	1958.4	70	96

Source: Paraguay, *Censo Nacional de Población y Viviendas, 1972* (Asunción, Dirección General de Estadística y Censos, 1975), p. 340, table 27.

ENCUESTA DEMOGRÁFICA NACIONAL, JULY-OCTOBER 1977
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.161	0.078	1976.5	78	109
20-24	0.939	0.063	1975.3	57	77
25-29	2.211	0.058	1973.7	49	64
30-34	3.682	0.076	1971.7	59	79
35-39	4.975	0.081	1969.5	58	78
40-44	6.029	0.100	1967.1	65	89
45-49	6.495	0.088	1964.1	54	71

Source: Paraguay, *Principales resultados de la Encuesta Demográfica Nacional de 1977* (Asunción, Ministerio de Hacienda, Dirección General de Estadística y Censos, 1979), pp. 105 and 112, tables 13 and 15.

ENCUESTA NACIONAL DE FECUNDIDAD, FEBRUARY-MAY 1979
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1964-1969	58	77
1969-1974	53	73
1974-1979	61	85

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 92.

ENCUESTA NACIONAL DE FECUNDIDAD, FEBRUARY-MAY 1979
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.140	0.071	1978.3	77	108
20-24	0.960	0.062	1977.0	57	77
25-29	2.190	0.064	1975.2	53	70
30-34	3.510	0.074	1973.1	57	75
35-39	4.590	0.072	1970.7	52	68
40-44	5.800	0.093	1968.0	61	82
45-49	6.260	0.091	1965.1	55	73

Source: Paraguay, *Encuesta Nacional de Fecundidad, 1979* (Asunción, Dirección General de Estadísticas y Censos, 1981), pp. 59 and 307, tables 5.6 and 2.3.1c.

CENSUS, 11 JULY 1982
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.171	0.052	1981.5	56	75
20-24	1.052	0.056	1980.2	51	67
25-29	2.197	0.058	1978.3	48	62
30-34	3.373	0.064	1975.9	50	65
35-39	4.459	0.075	1973.4	53	71
40-44	5.297	0.081	1970.7	54	71
45-49	5.849	0.090	1967.7	54	71

Source: Paraguay, *Censo Nacional de Población y Viviendas, 1982 (muestra del 10%)* (Asunción, Dirección General de Estadísticas y Censos, 1984), p. 91, table 26.

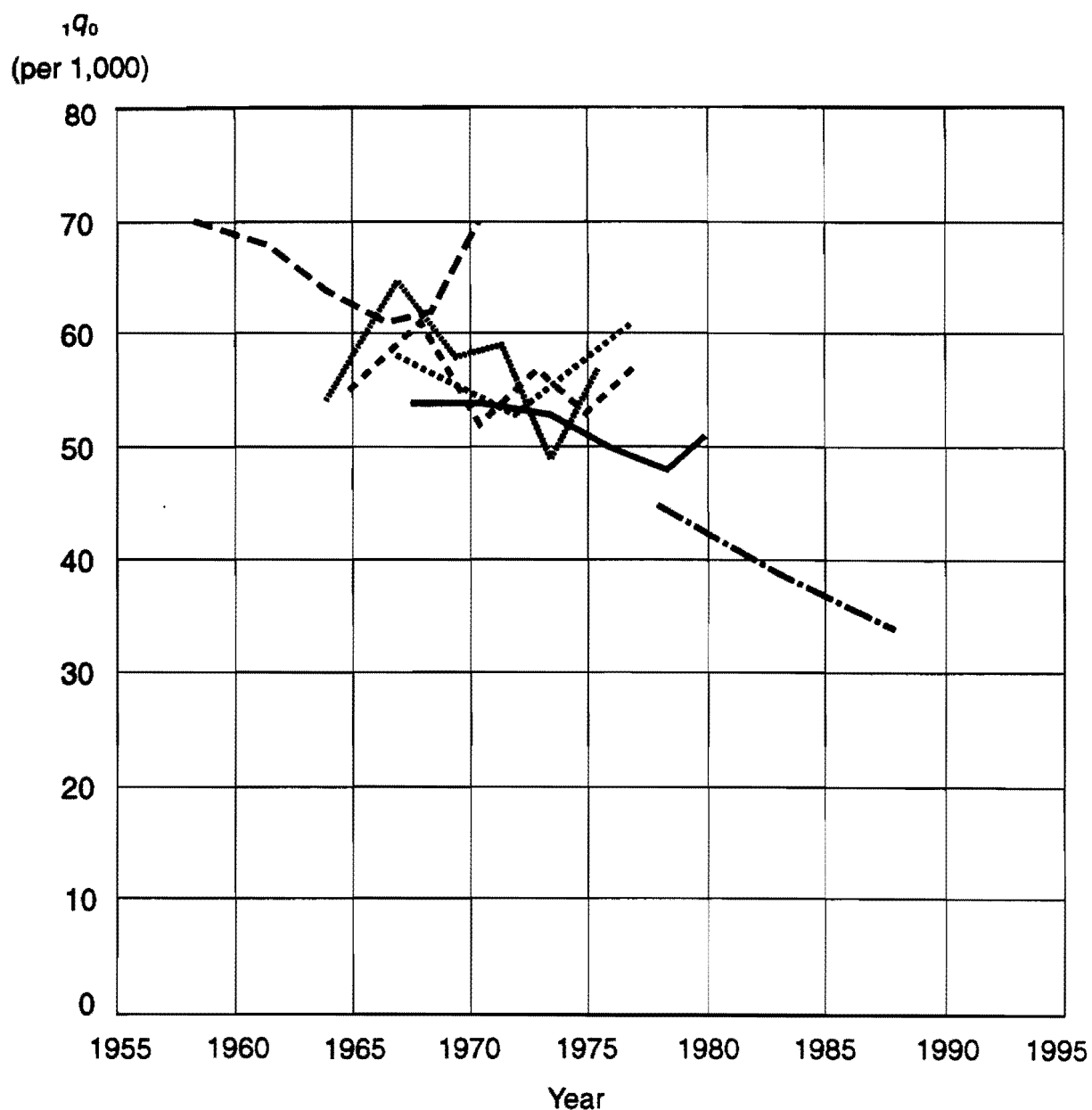
ENCUESTA NACIONAL DE DEMOGRAFÍA Y SALUD, MAY-AUGUST 1990
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1975-1980	45	64
1980-1985	39	51
1985-1990*	34	43

Source: Paraguay: *Encuesta Nacional de Demografía y Salud, 1990* (Asunción, Centro Paraguayo de Estudios de Población; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1991), p. 71, table 7.1.

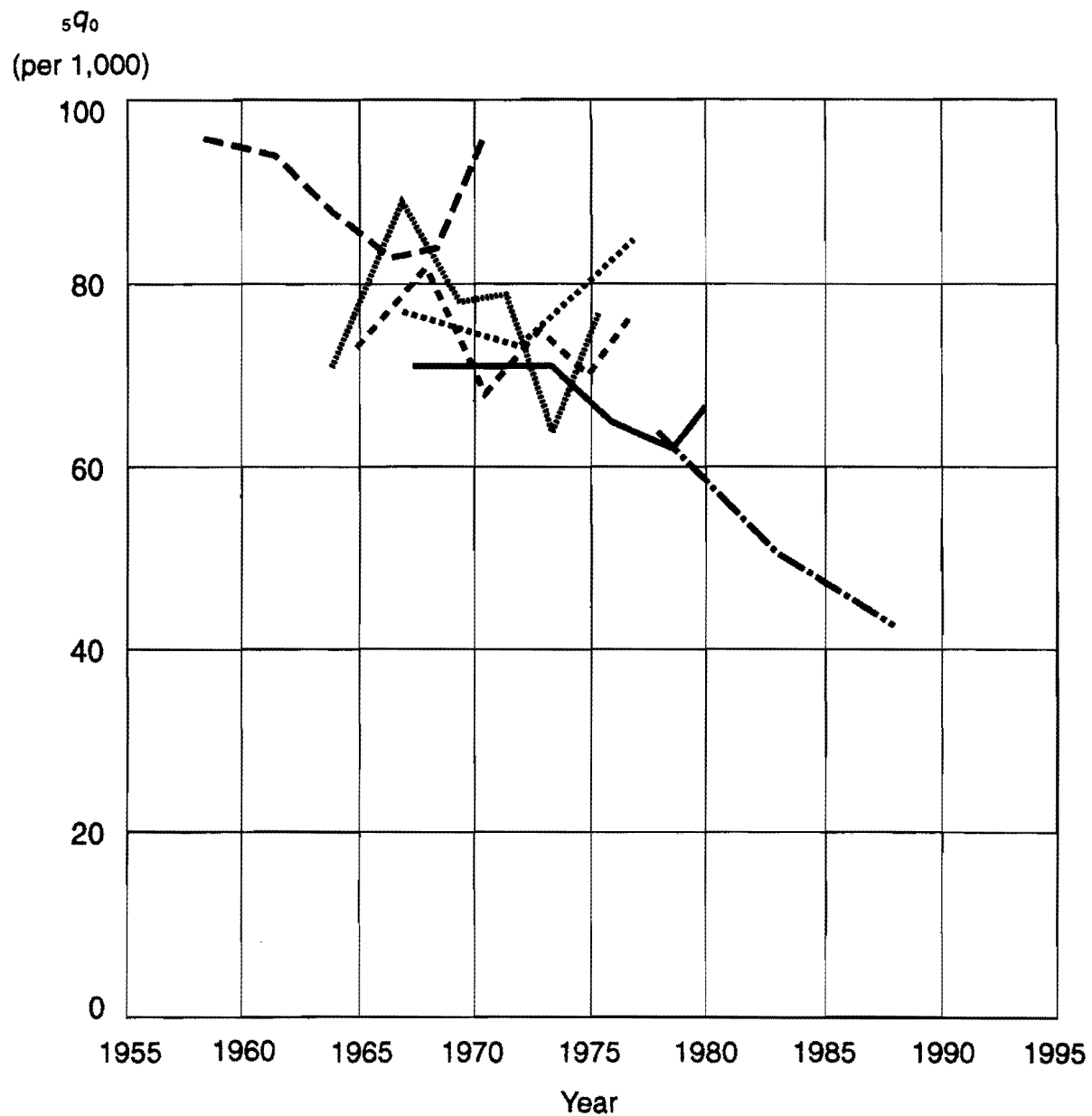
* Including events occurring in 1990 up to the month preceding the date of interview.

Infant mortality: Paraguay



- — Census, 1972 (indirect)
- Encuesta Demográfica Nacional, 1977 (indirect)
- Encuesta Nacional de Fecundidad, 1979 (direct)
- - - Encuesta Nacional de Fecundidad, 1979 (indirect)
- Census, 1982 (indirect)
- — Encuesta Nacional de Demografía y Salud, 1990 (direct)

Under-five mortality: Paraguay



- Census, 1972 (indirect)
- Encuesta Demográfica Nacional, 1977 (indirect)
- Encuesta Nacional de Fecundidad, 1979 (direct)
- Encuesta Nacional de Fecundidad, 1979 (indirect)
- Census, 1982 (indirect)
- Encuesta Nacional de Demografía y Salud, 1990 (direct)

PERU

Vital registration

Completeness of registration of deaths is not reported.

Censuses

Brass questions were included in the 1940, 1972 and 1981 censuses, although the 1940 data fall outside the scope of this study.

Sample surveys

Maternity histories were collected in 1977-1978 by the Encuesta Nacional de Fecundidad (WFS) and in 1986 by the Encuesta Demográfica y de Salud Familiar (DHS). The 1977-1978 survey collected maternity histories only from women who had ever been in union, whereas the household questionnaire included Brass questions for all women regardless of marital history. Brass questions were also included in the Encuesta Nacional de Prevalencia Anticonceptiva (CPS) of 1981. A multi-round survey, the Encuesta Demográfica Nacional, was carried out over four rounds from 1974 to 1976 and included Brass questions in the last round.

CENSUS, 4 JUNE 1972
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.151	0.148	1971.5	153	257
20-24	1.075	0.176	1970.3	139	227
25-29	2.474	0.187	1968.5	131	209
30-34	3.862	0.204	1966.3	132	211
35-39	5.019	0.231	1963.9	138	225
40-44	5.644	0.256	1961.1	143	235
45-49	5.919	0.290	1958.0	149	249

Source: Peru, *Censos Nacionales: VII de Población—II de Vivienda*, tomo I, *Resultados definitivos: nivel nacional* (Lima, Oficina Nacional de Estadística y Censos, 1974), pp. 289-300 and 317-325, tables 10 and 13.

ENCUESTA DEMOGRÁFICA NACIONAL, NOVEMBER 1974-DECEMBER 1976
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1975	120	164

Source: *Encuesta Demográfica Nacional del Perú*, fasc. No. 2, *La mortalidad en el Perú: diferenciales, niveles y aspectos metodológicos para su medición (1970-1975)* (Lima, Instituto Nacional de Estadística, 1978), Dirección General de Censos, Encuestas y Demografía, p. 15, table 4.

ENCUESTA DEMOGRÁFICA NACIONAL RETROSPECTIVA, APRIL-DECEMBER 1976
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.143	0.152	1975.5	151	253
20-24	1.005	0.133	1974.4	112	170
25-29	2.546	0.144	1972.9	108	162
30-34	3.928	0.159	1970.9	110	167
35-39	5.216	0.192	1968.7	122	191
40-44	6.023	0.222	1966.2	130	207
45-49	6.154	0.224	1963.0	124	196

Source: *Encuesta Demográfica Nacional del Perú*, fasc. No. 6, *Elaboración de datos y presentación de tabulaciones básicas* (Lima, Instituto Nacional de Estadística, Dirección General de Censos, Encuestas y Demografía, 1978), p. 75, table 44.

ENCUESTA NACIONAL DE FECUNDIDAD, JULY 1977-JUNE 1978
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1963-1968	117	194
1968-1973	109	168
1973-1978	96	149

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 95.

ENCUESTA NACIONAL DE FECUNDIDAD, JULY 1977-JUNE 1978
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.138	0.109	1977.0	112	170
20-24	1.010	0.125	1975.9	106	158
25-29	2.481	0.143	1974.2	107	160
30-34	3.997	0.156	1972.2	109	163
35-39	5.391	0.193	1969.9	122	191
40-44	6.246	0.214	1967.2	126	199
45-49	6.616	0.251	1964.1	135	217

Source: Kath Moser, "Levels and trends in child and adult mortality in Perú", London, London School of Hygiene and Tropical Medicine, 1982, pp. 23 and 28, tables 8 and 13, unpublished.

CENSUS, 12 JULY 1981
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.134	0.086	1980.6	90	125
20-24	0.960	0.105	1979.4	92	130
25-29	2.192	0.118	1977.6	92	129
30-34	3.409	0.127	1975.4	93	131
35-39	4.571	0.153	1972.9	103	151
40-44	5.265	0.170	1970.1	106	158
45-49	5.604	0.193	1967.0	111	167

Source: Unpublished tabulations provided by the Oficina Nacional de Estadística y Censos, Peru.

ENCUESTA NACIONAL DE PREVALENCIA DE ANTICONCEPTIVOS, AUGUST-DECEMBER 1981
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.180	0.115	1980.6	110	166
20-24	1.087	0.132	1979.5	109	164
25-29	2.540	0.136	1977.8	103	151
30-34	3.814	0.155	1975.8	108	161
35-39	5.119	0.170	1973.5	111	169
40-44	6.124	0.190	1970.9	115	177
45-49	6.421	0.229	1967.8	126	199

Source: Unpublished tabulations provided by the Oficina Nacional de Estadística y Censos, Peru.

ENCUESTA DEMOGRÁFICA Y DE SALUD FAMILIAR, SEPTEMBER-DECEMBER 1986
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1982-1986	76	112

Source: Peru, *Encuesta Demográfica y de Salud Familiar (ENDES 1986): informe general* (Lima, Instituto Nacional de Estadística, Dirección General de Demografía; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1988), p. 95.

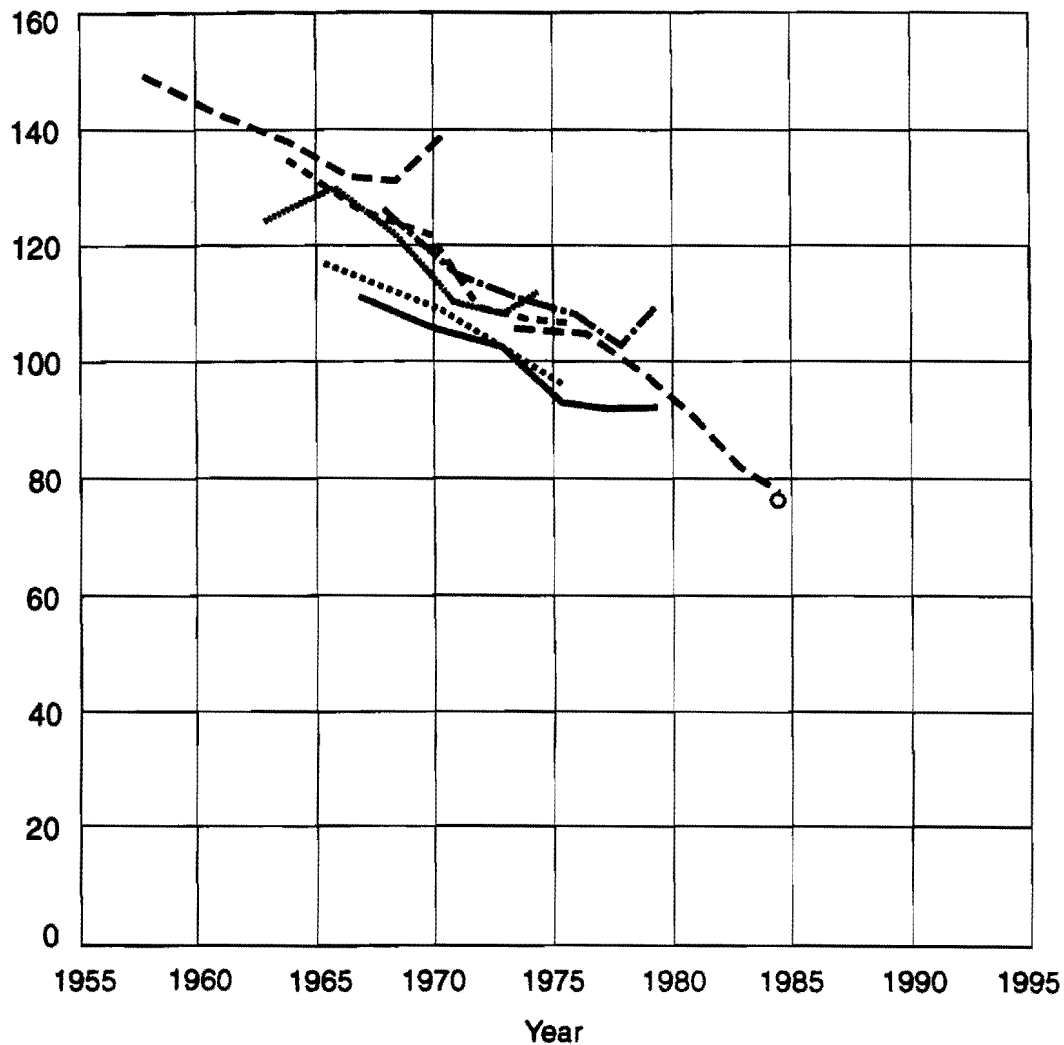
ENCUESTA DEMOGRÁFICA Y DE SALUD FAMILIAR, SEPTEMBER-DECEMBER 1986
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.141	0.122	1985.7	114	175
20-24	0.874	0.086	1984.6	78	104
25-29	2.218	0.099	1983.1	82	110
30-34	3.499	0.121	1981.2	91	128
35-39	4.882	0.140	1979.1	98	142
40-44	5.746	0.163	1976.7	105	155
45-49	6.328	0.177	1973.6	106	157

Source: Unpublished tabulations provided by the Oficina Nacional de Estadística y Censos, Peru.

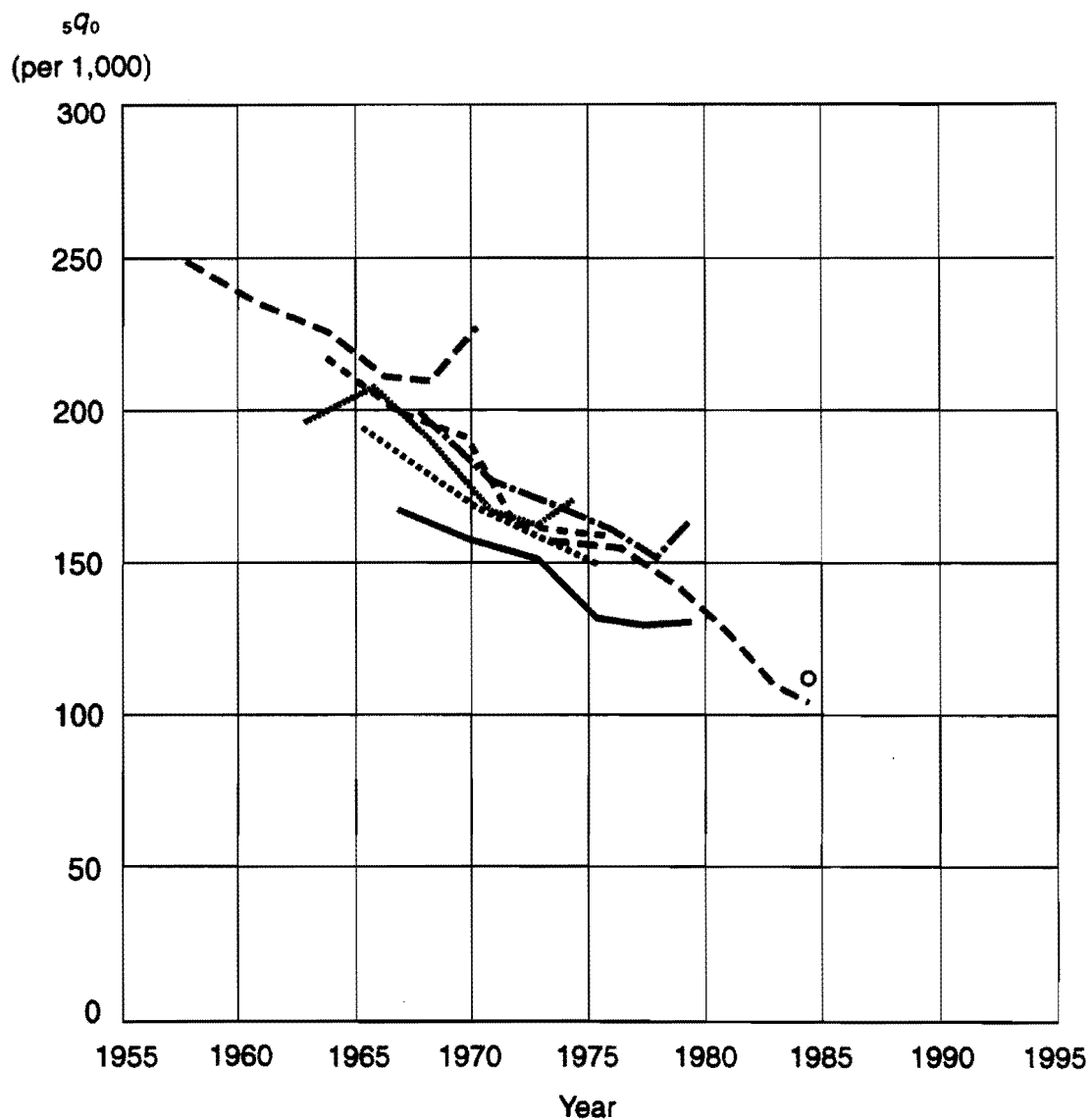
Infant mortality: Peru

‰
(per 1,000)



- Census, 1972 (Indirect)
- Encuesta Demográfica Nacional Retrospectivo, 1976 (Indirect)
- Encuesta Nacional de Fecundidad, 1978 (direct)
- - - Encuesta Nacional de Fecundidad, 1978 (indirect)
- Census, 1971 (Indirect)
- Encuesta Nacional de Prevalencia de Anticonceptivos, 1981 (Indirect)
- Encuesta Demográfica y de Salud Familiar, 1986 (direct)
- - - Encuesta Demográfica y de Salud Familiar, 1986 (indirect)

Under-five mortality: Peru



- Census, 1972 (Indirect)
- Encuesta Demográfica Nacional Retrospectivo, 1976 (Indirect)
- Encuesta Nacional de Fecundidad, 1978 (direct)
- - - Encuesta Nacional de Fecundidad, 1978 (Indirect)
- Census, 1971 (Indirect)
- - - Encuesta Nacional de Prevalencia de Anticonceptivos, 1981 (Indirect)
- Encuesta Demográfica y de Salud Familiar, 1986 (direct)
- - - Encuesta Demográfica y de Salud Familiar, 1986 (Indirect)

PHILIPPINES

Vital registration

Registration of births and deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1970 and 1980 censuses.

Sample surveys

Maternity histories were collected in 1978 by the Republic of the Philippines Fertility Survey (WFS).

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	85	1970	60	1980	45
1961	87	1971	62	1981	44
1962	73	1972	68	1982	42
1963	73	1973	74	1983	43
1964	70	1974	59	1984	38
1965	73	1975	53	1985	38
1966	72	1976	57	1986	35
1967	72	1977	57	1987	32
1968	71	1978	53		
1969	67	1979	50		

Source: Data provided to the United Nations Statistical Office.

CENSUS, 6 MAY 1970 (Indirect estimates, North model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1970</i>
15-19	0.096	0.049	1969.6	58	89
20-24	1.023	0.051	1968.5	46	68
25-29	2.571	0.052	1966.8	41	59
30-34	3.663	0.063	1964.7	44	64
35-39	4.276	0.076	1962.3	48	70
40-44	4.679	0.095	1959.7	54	80
45-49	5.109	0.116	1956.8	57	87

Source: *Demographic Yearbook—Special Issue: Historical Supplement* (United Nations publication, Sales No. E/F.79.XIII.8), pp. 256-257 and 519, tables 3 and 7.

REPUBLIC OF THE PHILIPPINES FERTILITY SURVEY, 27 FEBRUARY-18 JUNE 1978
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1963-1968	1968-1973
1963-1968	57	95
1968-1973	57	88
1973-1978	58	93

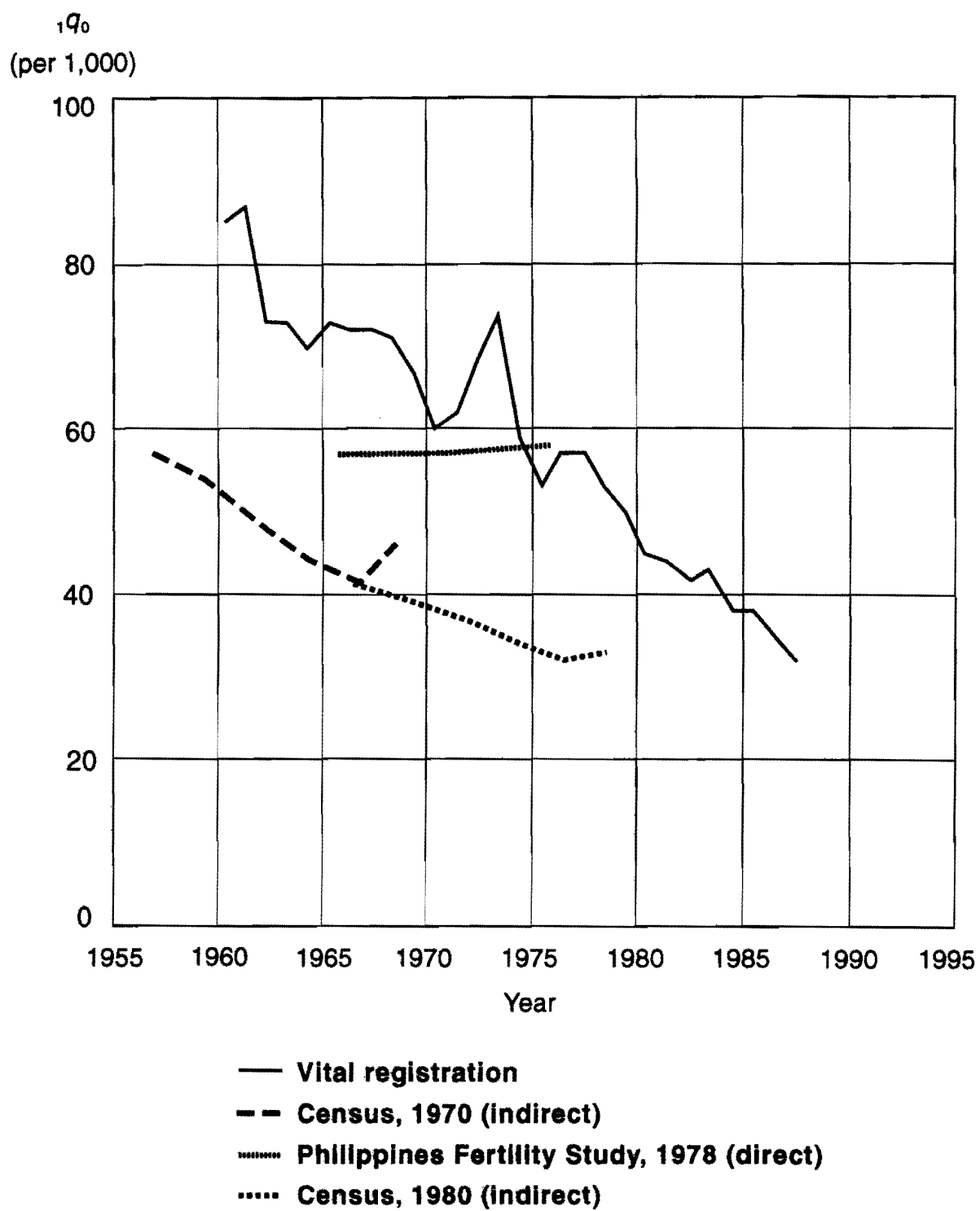
Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 83.

CENSUS, 1 MAY 1980
(Indirect estimates, North model)

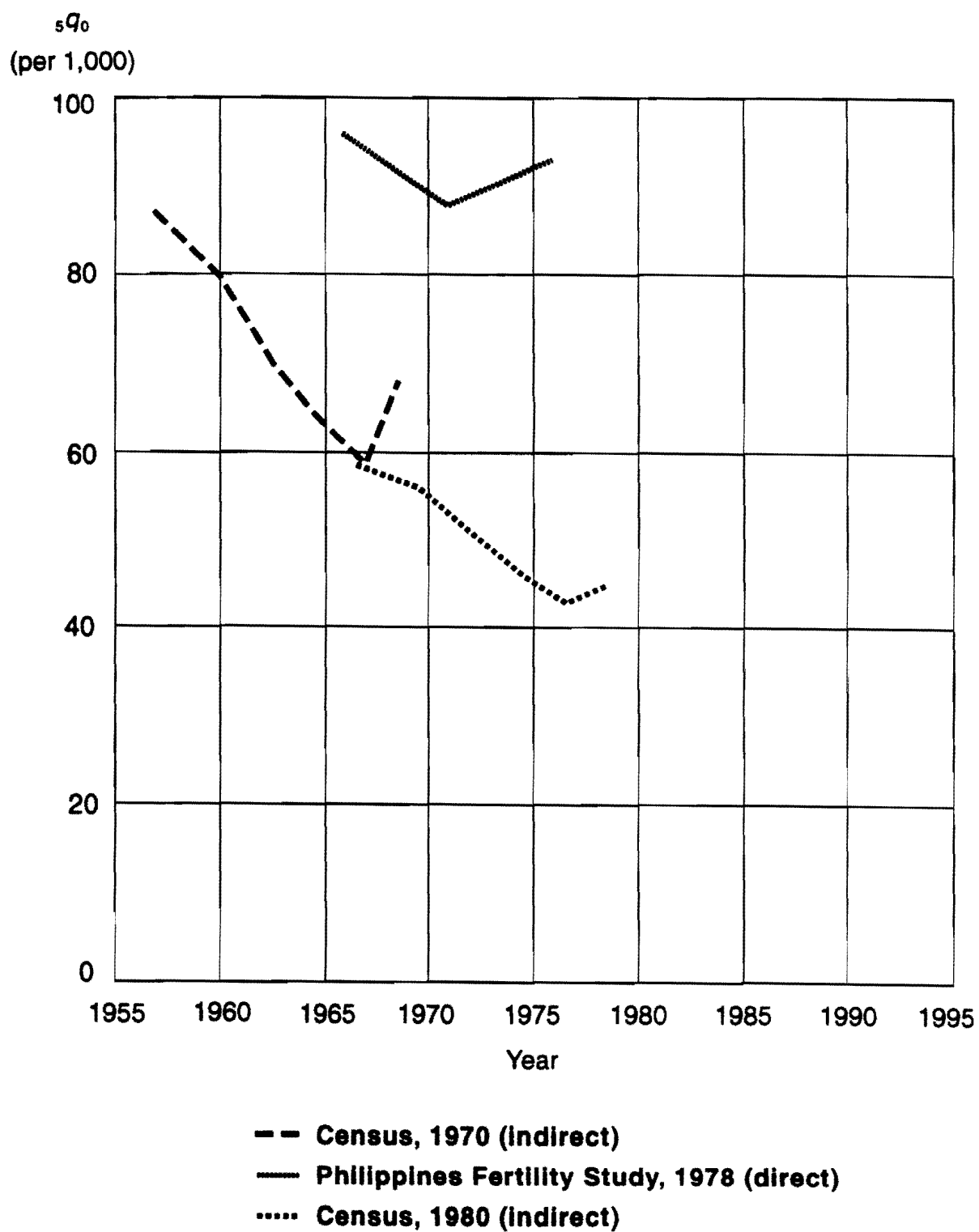
Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1963-1968	1968-1973
15-19	0.100	0.035	1979.5	40	56
20-24	0.868	0.036	1978.3	33	45
25-29	2.034	0.040	1976.6	32	43
30-34	3.205	0.046	1974.5	34	46
35-39	4.310	0.055	1972.1	37	51
40-44	4.987	0.066	1969.4	39	56
45-49	5.256	0.079	1966.5	41	59

Source: *Demographic Yearbook*, 1986 (United Nations publication, Sales No. E/F.87.XIII.1), pp. 246-247, 1070-1071 and 1142-1143, tables 7, 50 and 51.

Infant mortality: Philippines



Under-five mortality: Philippines



PUERTO RICO

Vital registration

Registration of births and deaths is reported to be complete.

Censuses

Brass questions have not been included in the censuses.

Sample surveys

No relevant data are available.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	44	1970	29	1980	19
1961	41	1971	28	1981	19
1962	42	1972	27	1982	17
1963	45	1973	24	1983	17
1964	52	1974	23	1984	16
1965	43	1975	21	1985	15
1966	38	1976	20	1986	14
1967	33	1977	20	1987	14
1968	29	1978	19	1988	13
1969	30	1979	20	1989	14

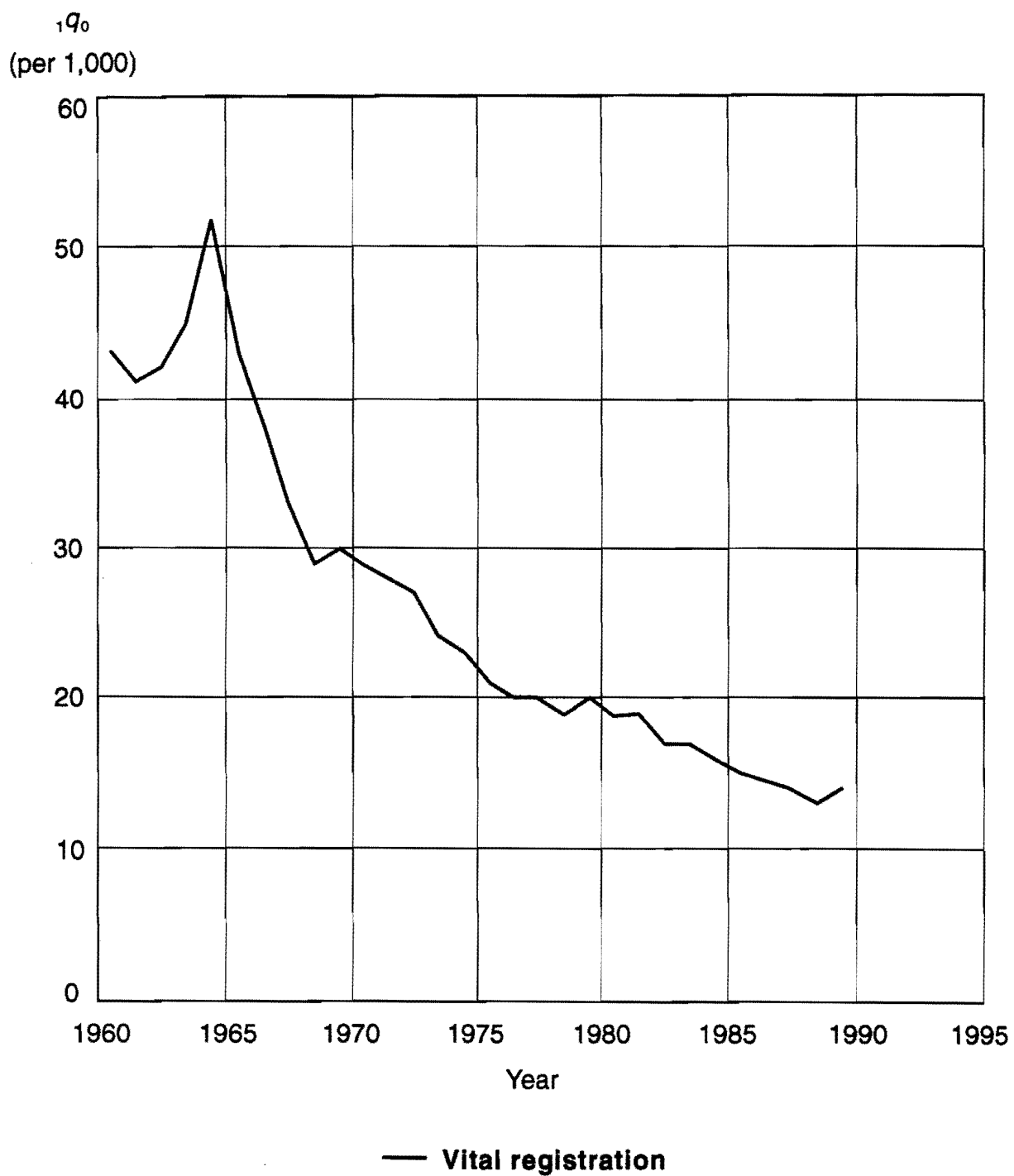
Sources: Puerto Rico, *Informe anual de estadísticas vitales, 1988* (San Juan, Departamento de Salud, Administración de Facilidades y Servicios de Salud, Oficina de Estadísticas de Salud, 1991); and data provided to the United Nations Statistical Office.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

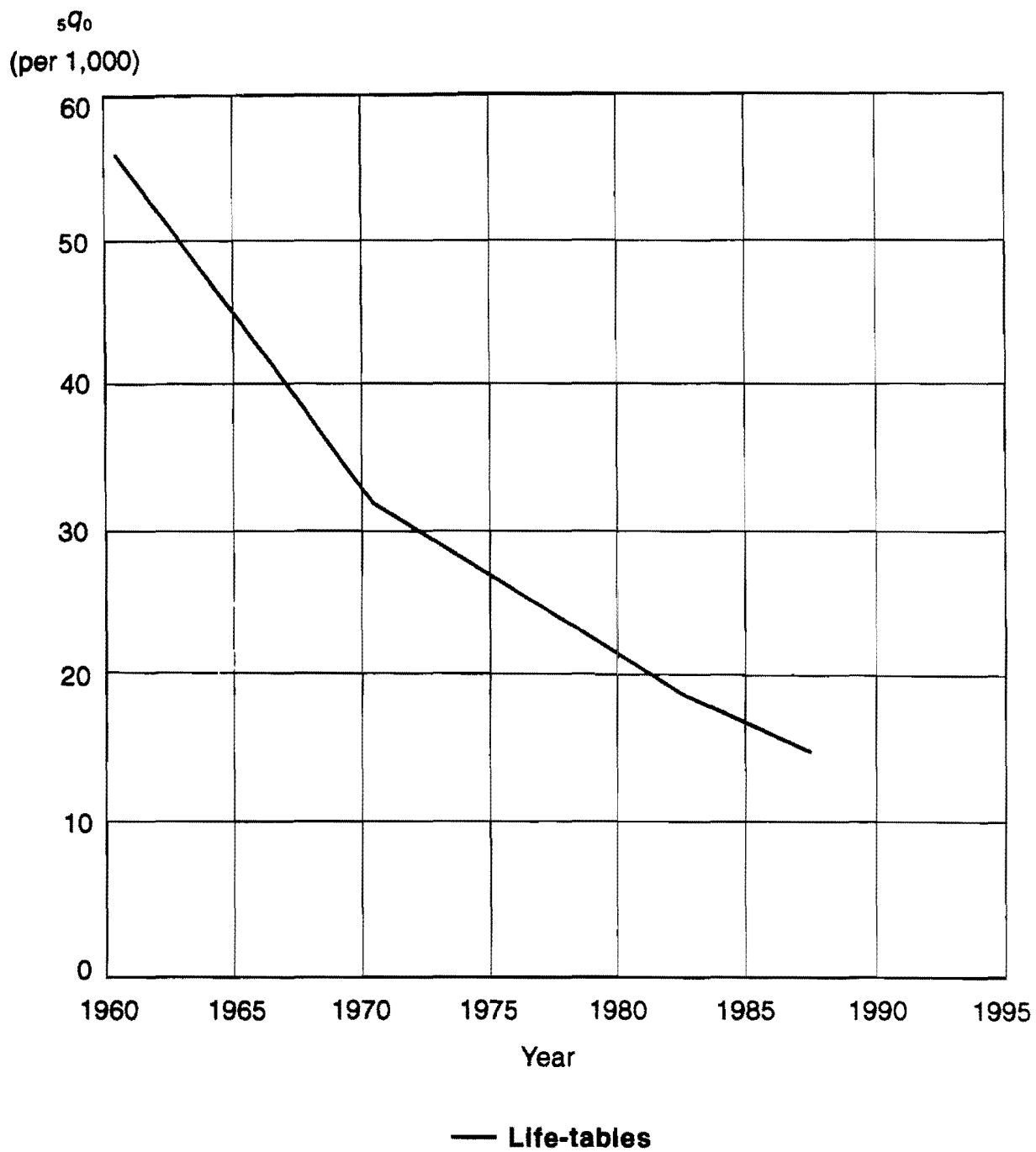
<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1980</i>
1959-1961	44	56
1969-1971	29	32
1979-1981	19	21
1981-1983	17	19
1986-1988	14	16

Sources: Puerto Rico, *Informe anual de estadísticas vitales, 1988* (San Juan, Departamento de Salud, Administración de Facilidades y Servicios de Salud, Oficina de Estadísticas de Salud, 1991); and data provided to the United Nations Statistical Office.

Infant mortality: Puerto Rico



Under-five mortality: Puerto Rico



REPUBLIC OF KOREA

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1966, 1970, 1975, 1980 and 1985 censuses. Estimates from the 1966 census are not included here because they refer mainly to a period before 1960.

Sample surveys

Maternity histories were collected in 1971 by the Fertility-Abortion Survey (although only estimates of infant mortality are available) and in 1974 by the Korean National Fertility Survey (WFS). The national life-table for 1978-1979 was based on data collected in the Continuous Demographic Surveys and Special Retrospective Surveys conducted in 1978 and 1979 (Republic of Korea, 1982).

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

Period	Mortality rate (per 1,000)	
	1960	1970
1978-1979	36	49

Source: Republic of Korea, *The Life Table of Korea (1978-79)* (Seoul, Economic Planning Board, National Bureau of Statistics, 1982), pp. 18-19, tables 6-7.

CENSUS, 1 OCTOBER 1970 (Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.014	0.039	1970.0	48	62
20-24	0.441	0.035	1969.2	37	46
25-29	1.944	0.048	1968.1	44	56
30-34	3.487	0.067	1966.5	54	72
35-39	4.529	0.093	1964.6	68	93
40-44	5.274	0.135	1962.3	88	125
45-49	5.620	0.177	1959.2	105	152

Source: *Demographic Yearbook—Special Issue: Historical Supplement* (United Nations publication, Sales No. E/F.79.XIII.8), pp. 252-253 and 515, tables 3 and 7.

FERTILITY-ABORTION SURVEY, 1971
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1965	67	
1966	66	
1967	50	
1968	49	
1969	53	
1970	47	

Source: Lee-Jay Cho and Griffith Feeney, "The mortality transition in Korea", paper presented to the Annual Meeting of the Population Association of America, Montreal, Canada, 29 April-1 May 1976. This paper refers to the Republic of Korea.

KOREAN NATIONAL FERTILITY SURVEY, 16 SEPTEMBER-5 DECEMBER 1974
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1959-1964	57	101
1964-1969	53	81
1969-1974	42	56

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 77.

KOREAN NATIONAL FERTILITY SURVEY, HOUSEHOLD SURVEY, 16 SEPTEMBER-5 DECEMBER 1974
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.017	0.071	1974.0	88	124
20-24	0.450	0.047	1973.2	49	63
25-29	1.813	0.048	1972.0	43	55
30-34	3.309	0.068	1970.3	55	74
35-39	4.356	0.093	1968.3	67	93
40-44	5.103	0.118	1965.9	78	110
45-49	5.746	0.182	1962.8	107	155

Source: Republic of Korea, *The Korean National Fertility Survey, 1974: First Country Report* (Seoul, Economic Planning Board, National Bureau of Statistics; and Korean Institute for Family Planning, 1977), pp. T16 and T36, tables II.4 and II.6.A.

CENSUS, 1 OCTOBER 1975
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.011	0.028	1974.9	34	41
20-24	0.369	0.020	1974.3	22	26
25-29	1.749	0.026	1973.2	25	30
30-34	3.117	0.038	1971.7	34	41
35-39	4.081	0.054	1969.9	43	54
40-44	4.778	0.074	1967.6	53	70
45-49	5.217	0.111	1964.5	69	94

Source: Republic of Korea, 1975 Population and Housing Census Report, vol. 2, Five Percent Sample Survey: 3-2 Fertility (Seoul, Economic Planning Board, National Bureau of Statistics), p. 18, table 1, and p. 48, table 2.

CENSUS, 1 NOVEMBER 1980
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.008	0.014	1980.1	17	20
20-24	0.316	0.014	1979.4	16	18
25-29	1.511	0.015	1978.3	15	17
30-34	2.597	0.023	1976.8	21	25
35-39	3.395	0.034	1974.9	28	34
40-44	4.142	0.047	1972.6	36	44
45-49	4.677	0.066	1969.5	44	55

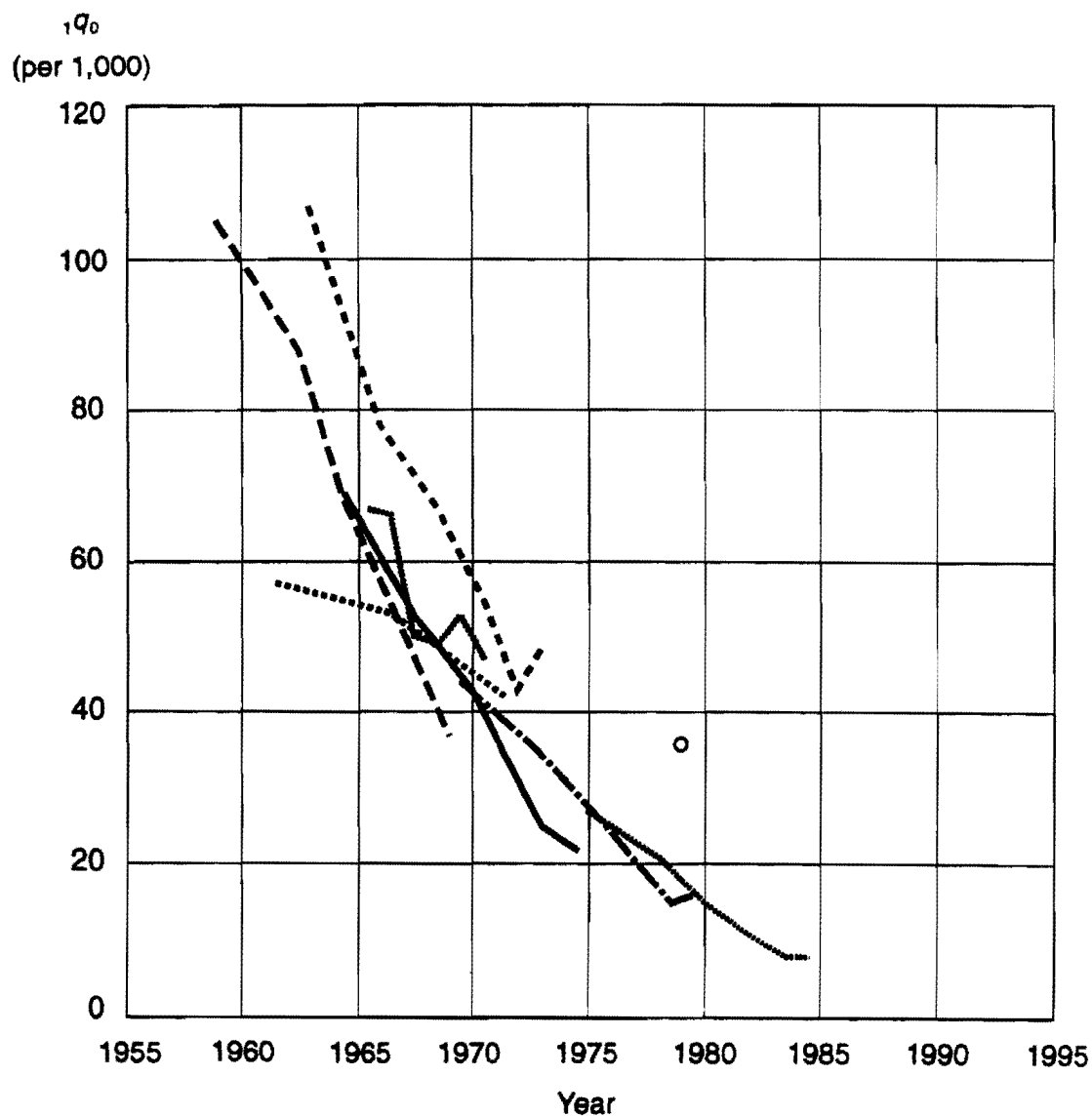
Source: Republic of Korea, 1980 Population and Housing Census Report, vol. 2, 15 Percent Sample Survey: 3-2 Fertility (Seoul, Economic Planning Board, National Bureau of Statistics), pp. 18 and 48, tables 1 and 2.

CENSUS, 1 NOVEMBER 1985
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.004	0.006	1985.1	7	8
20-24	0.239	0.007	1984.4	8	9
25-29	1.258	0.008	1983.4	8	9
30-34	2.189	0.011	1981.9	11	12
35-39	2.755	0.016	1980.2	15	17
40-44	3.420	0.025	1977.9	21	24
45-49	4.051	0.037	1974.8	27	32

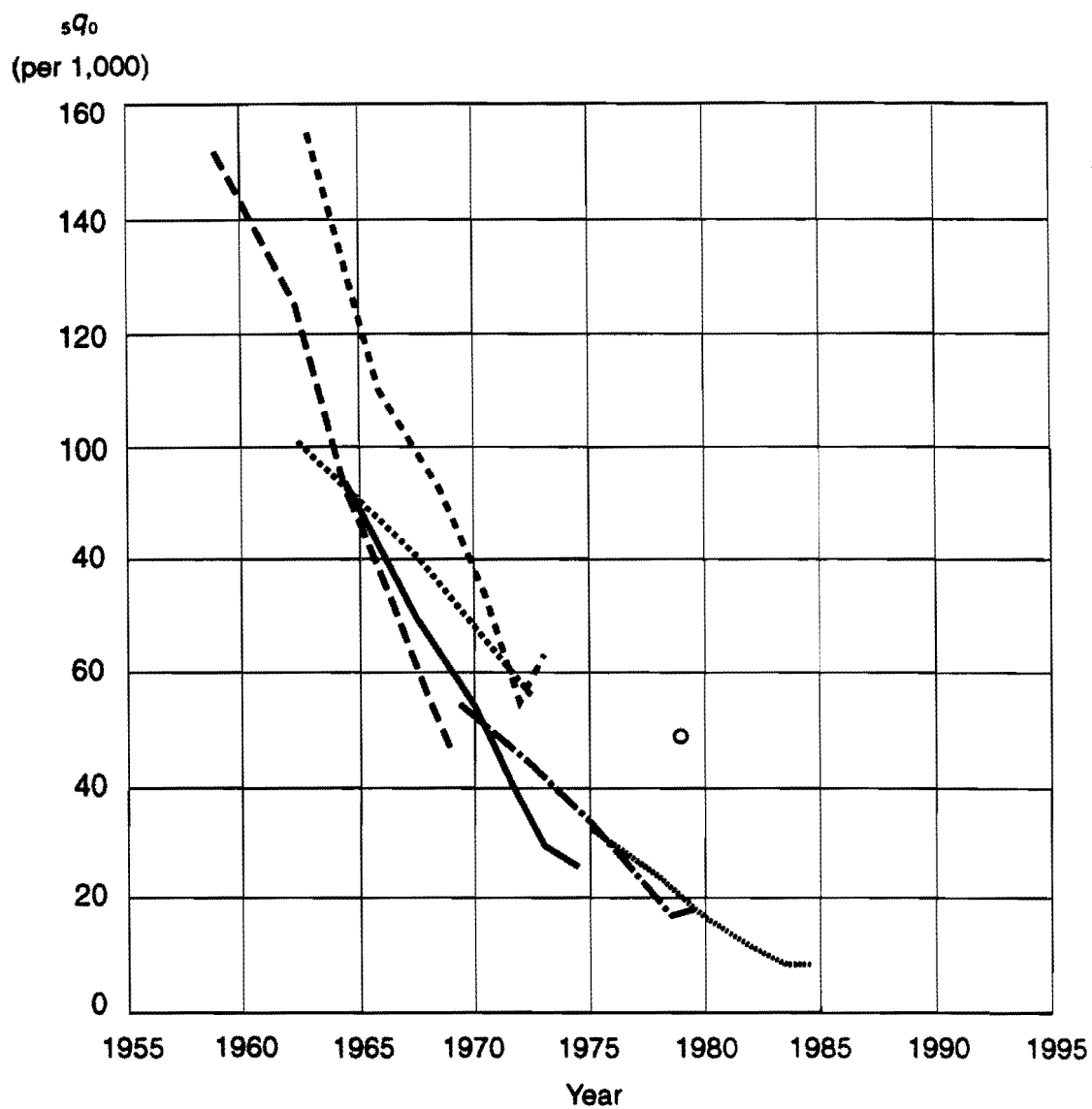
Source: Data provided to the United Nations Statistical Office.

Infant mortality: Republic of Korea



- Life-tables
- Census, 1970 (Indirect)
- Fertility-Abortion Survey, 1971 (direct)
- Korean National Fertility Survey, 1974 (direct)
- - - Korean National Fertility Survey, 1974 (Indirect)
- Census, 1975 (Indirect)
- Census, 1980 (Indirect)
- Census, 1985 (Indirect)

Under-five mortality: Republic of Korea



- Life-tables
- Census, 1970 (indirect)
- Korean National Fertility Survey, 1974 (direct)
- - - Korean National Fertility Survey, 1974 (indirect)
- Census, 1975 (indirect)
- - - - - Census, 1980 (indirect)
- Census, 1985 (indirect)

RWANDA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1978 census.

Sample surveys

Maternity histories were collected in 1983 by the Enquête nationale sur la fécondité. Brass questions were included in the Enquête démographique of 1970.

ENQUÊTE DÉMOGRAPHIQUE, 30 SEPTEMBER 1970 (Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.111	0.193	1969.9	230	380
20-24	1.236	0.137	1968.8	114	191
25-29	3.094	0.156	1967.1	107	178
30-34	4.794	0.178	1965.0	108	179
35-39	6.158	0.199	1962.6	110	182
40-44	6.634	0.248	1960.0	124	209
45-49	6.532	0.314	1957.0	145	245

Source: *Demographic Yearbook—Special Issue: Historical Supplement* (United Nations publication, Sales No. E/F.79.XIII.8), p. 494, table 7.

CENSUS, 15-16 AUGUST 1978 (Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.091	0.129	1977.8	150	254
20-24	1.041	0.168	1976.8	141	238
25-29	2.844	0.202	1975.2	139	235
30-34	4.802	0.217	1973.3	131	222
35-39	6.385	0.230	1971.0	127	215
40-44	7.386	0.243	1968.5	124	209
45-49	7.694	0.271	1965.6	126	212

Source: Rwanda, *Recensement général de la population et de l'habitat, 1978: Résultats définitifs*, vol. III, *Fécondité-mortalité* (Kigali, Bureau national de recensement, n.d.), tables 22 and 25.

ENQUÊTE NATIONALE SUR LA FÉCONDITÉ, AUGUST-DECEMBER 1983
(Direct estimates)

Period ^a	Mortality rate (per 1,000)	
	1960	1970
1964-1968	115	218
1969-1973	118	228
1974-1978	123	247

Source: Rwanda, *Enquête nationale sur la fécondité, 1983*, vol. I, *Analyse des résultats* (Kigali, Office national de la population, n.d.), p. 155, table 5.3.

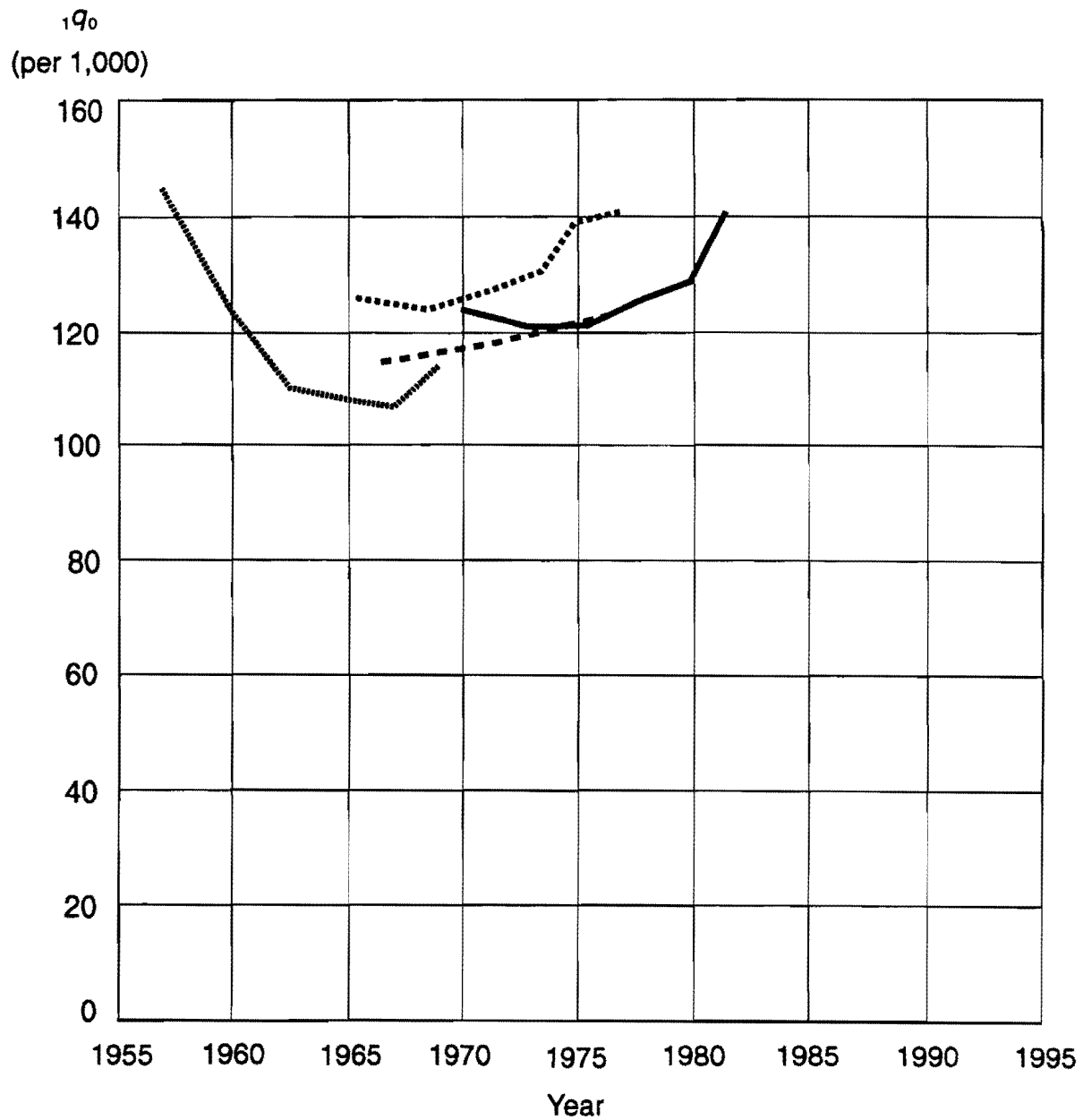
^a Figures refer to cohorts of births during periods shown.

ENQUÊTE NATIONALE SUR LA FÉCONDITÉ, AUGUST-DECEMBER 1983
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.11	0.10	1982.6	117	195
20-24	1.16	0.17	1981.5	141	238
25-29	2.97	0.19	1979.9	129	218
30-34	4.94	0.21	1977.9	126	213
35-39	6.34	0.22	1975.6	121	203
40-44	7.69	0.24	1973.0	121	204
45-49	8.29	0.27	1970.0	124	210

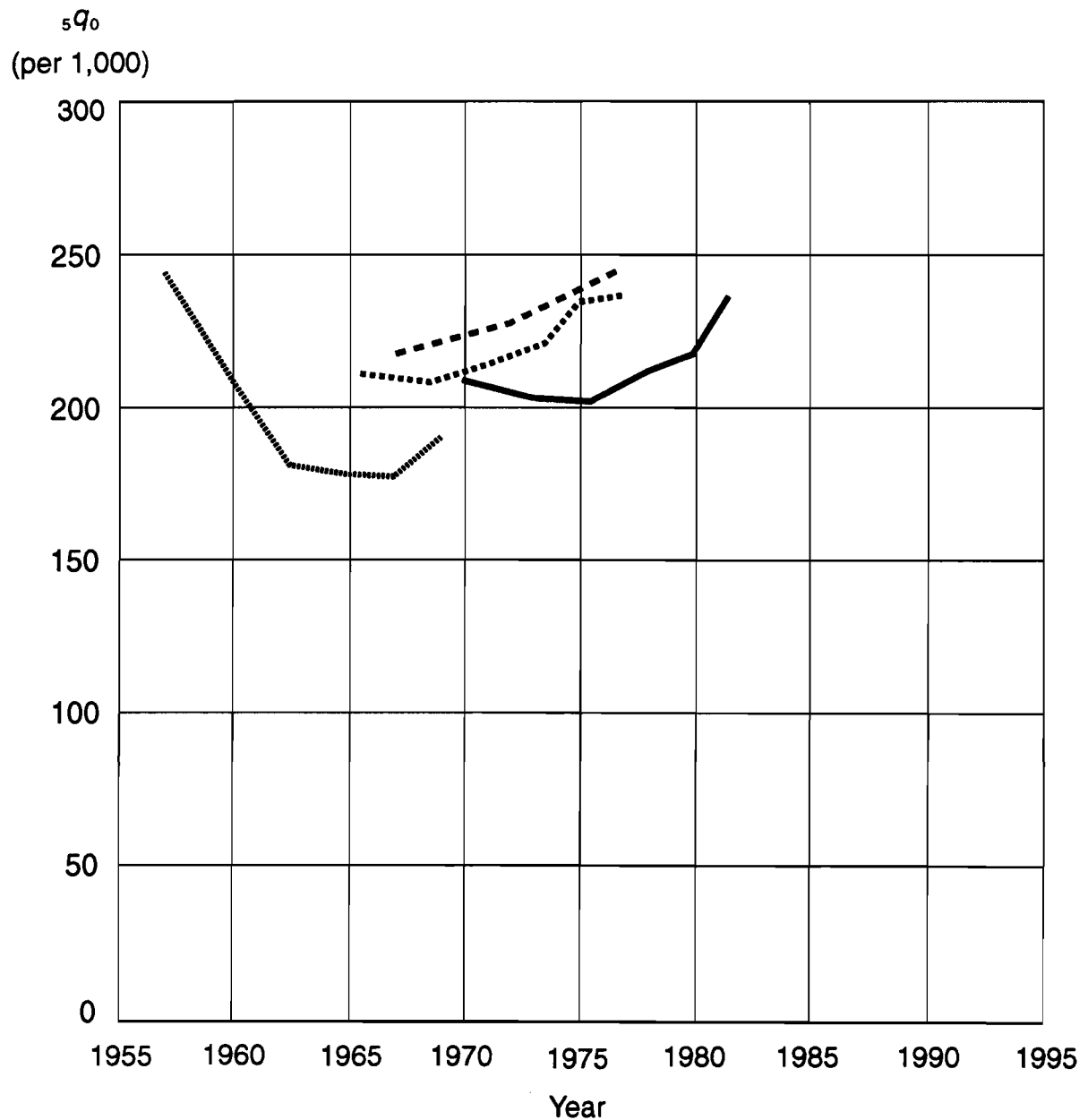
Source: Rwanda, *Enquête nationale sur la fécondité, 1983*, vol. I, *Analyse des résultats* (Kigali, Office national de la population, n.d.), tables 4.6 and 4.7.

Infant mortality: Rwanda



- Enquête démographique, 1970 (indirect)
- Census, 1978 (indirect)
- - - Enquête nationale sur la fécondité, 1983 (direct)
- Enquête nationale sur la fécondité, 1983 (indirect)

Under-five mortality: Rwanda



- Enquête démographique, 1970 (indirect)
- Census, 1978 (indirect)
- - - Enquête nationale sur la fécondité, 1983 (direct)
- Enquête nationale sur la fécondité, 1983 (indirect)

SENEGAL

Vital registration

Completeness of death registration is not reported.

Censuses

No relevant data are available.

Sample surveys

Maternity histories were collected in 1978 by the Enquête sénégalaise sur la fécondité (WFS) and in 1986 by the Enquête démographique et de santé au Sénégal (DHS). A multi-round survey was conducted in 1970-1971, but the data are not available.

Data from WFS, DHS and several small-scale surveys show an age pattern of mortality marked by very high child mortality in relation to infant mortality, which is different from any of the published model life-tables. Ewbank (1985) derived indirect estimates of infant and child mortality using WFS data and a Senegalese standard life-table. Both Ewbank's estimates and indirect estimates using South model life-tables are included here.

ENQUÊTE SÉNÉGALAISE SUR LA FÉCONDITÉ, APRIL-OCTOBER 1978
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1963-1968	118	293
1968-1973	122	283
1973-1978	112	262

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 44.

ENQUÊTE SÉNÉGALAISE SUR LA FÉCONDITÉ, APRIL-OCTOBER 1978
(Indirect estimates (1), Senegalese model)

Age of women	Reference date	Mortality rate (per 1,000)	
		1960	1970
15-19	1976.5	131	303
20-24	1974.5	119	281
25-29	1972.1	119	281
30-34	1969.5	111	266
35-39	1966.8	122	287
40-44	1963.6	128	299
45-49	1959.6	115	273

Source: Douglas C. Ewbank, "Senegal population sector report", unpublished paper commissioned by the World Bank; Philadelphia, Pennsylvania, University of Pennsylvania, Population Studies Centre, 1985.

ENQUÊTE SÉNÉGALAISE SUR LA FÉCONDITÉ, APRIL-OCTOBER 1978
(Indirect estimates (2), South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.420	0.169	1977.0	125	198
20-24	1.649	0.218	1975.7	156	263
25-29	3.375	0.247	1974.0	161	273
30-34	5.279	0.251	1972.1	155	261
35-39	5.940	0.291	1970.0	166	286
40-44	6.790	0.323	1967.6	173	299
45-49	7.131	0.320	1964.6	162	276

Source: *Enquête sénégalaise sur la fécondité, 1978: rapport national d'analyse*, vol. I, *Analyse des résultats définitifs*, p. 62, table 5.1; and vol. II, *Résultats définitifs* (Dakar, Ministère de l'économie et des finances, Direction de la statistique, 1981), pp. 107 and 183, tables 2.2.1A and 2.3.1.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ AU SÉNÉGAL, APRIL-JULY 1986
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1971-1975	120	287
1976-1980	96	236
1981-1985*	86	191

Source: Salif Ndiaye, Ibrahima Sarr and Mohamed Ayad, *Enquête démographique et de santé au Sénégal, 1986* (Dakar, Ministère de l'économie et des finances, Direction de la statistique; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 81, table 6.3.

* Including events occurring in 1986 up to the month preceding the date of interview.

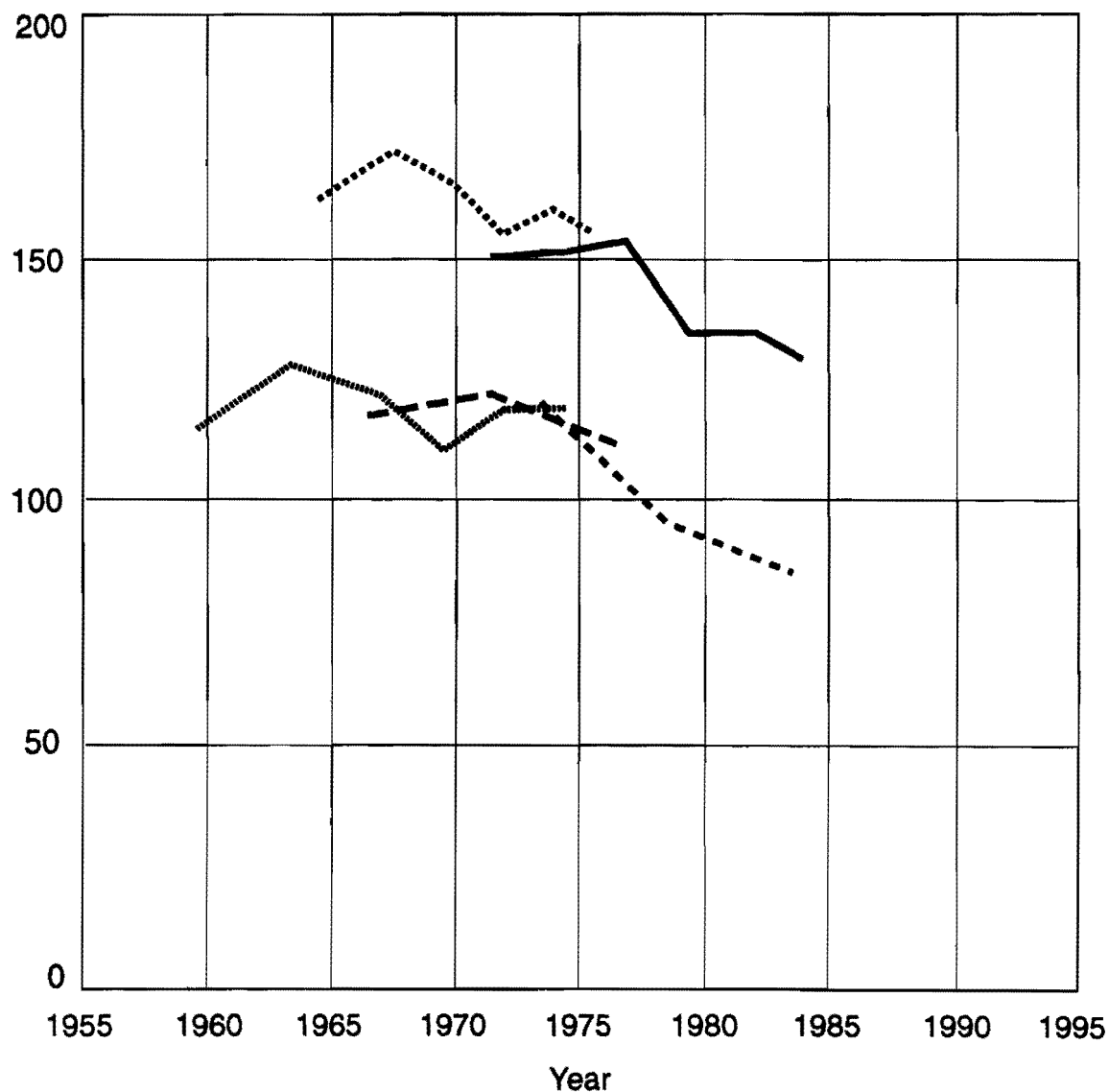
ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ AU SÉNÉGAL, APRIL-JULY 1986
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.32	0.153	1985.2	140	227
20-24	1.57	0.171	1983.8	130	207
25-29	3.09	0.201	1981.9	135	218
30-34	4.74	0.215	1979.6	135	218
35-39	6.17	0.269	1977.1	154	259
40-44	6.83	0.281	1974.3	152	255
45-49	7.27	0.297	1971.3	151	252

Source: Salif Ndiaye, Ibrahima Sarr and Mohamed Ayad, *Enquête démographique et de santé au Sénégal, 1986* (Dakar, Ministère de l'économie et des finances, Direction de la statistique; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 80, table 6.2.

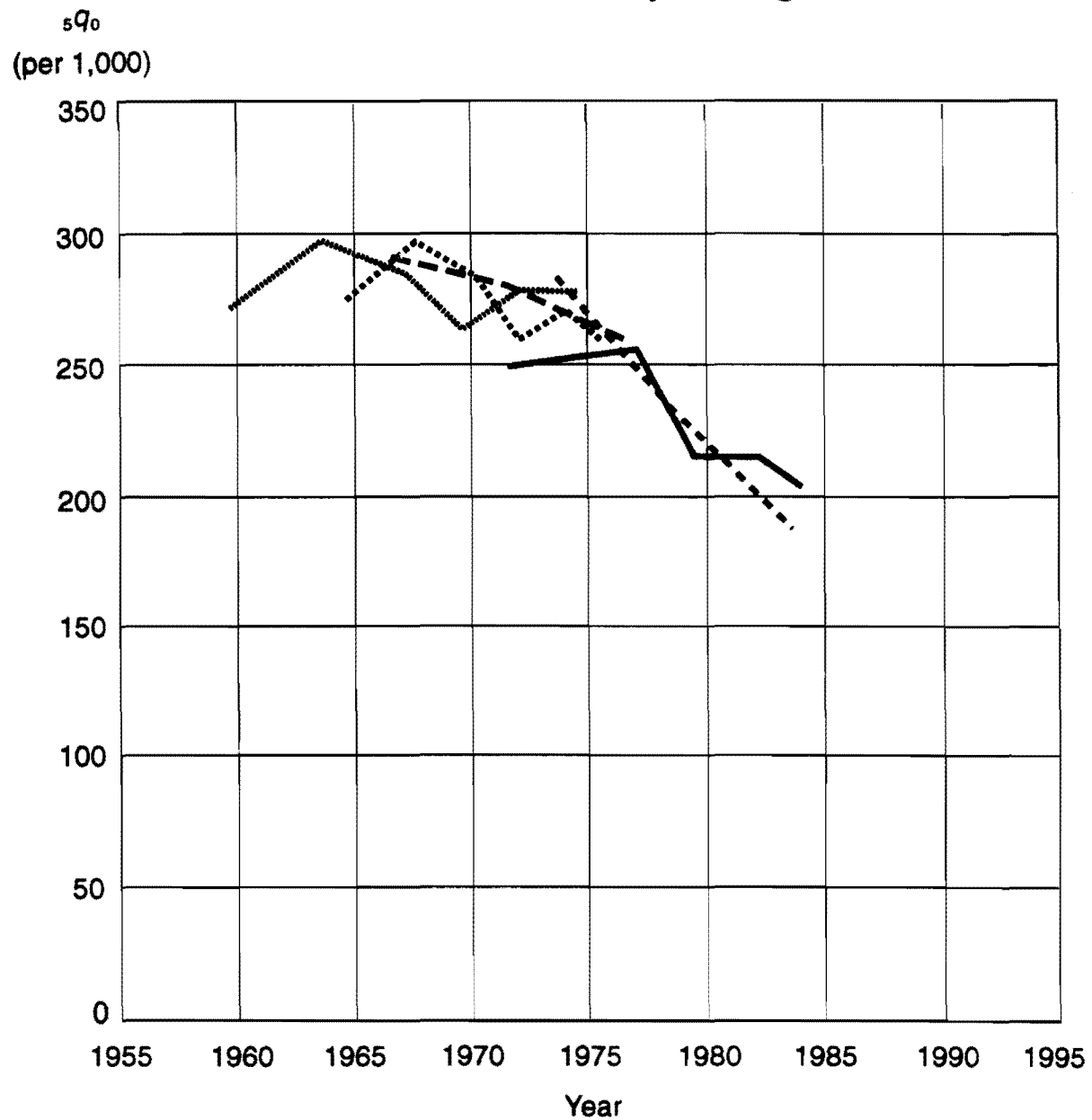
Infant mortality: Senegal

${}_1q_0$
(per 1,000)



- Enquête sénégalaise sur la fécondité, 1978 (direct)
- Enquête sénégalaise sur la fécondité, 1978 (indirect-1)
- Enquête sénégalaise sur la fécondité, 1978 (indirect-2)
- Enquête démographique et de santé au Sénégal, 1986 (direct)
- Enquête démographique et de santé au Sénégal, 1986 (indirect)

Under-five mortality: Senegal



- — Enquête sénégalaise sur la fécondité, 1978 (direct)
- Enquête sénégalaise sur la fécondité, 1978 (indirect-1)
- Enquête sénégalaise sur la fécondité, 1978 (indirect-2)
- - - Enquête démographique et de santé au Sénégal, 1986 (direct)
- Enquête démographique et de santé au Sénégal, 1986 (indirect)

SIERRA LEONE

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1974 and 1985 censuses. However, results from the 1985 census are not yet available.

Sample surveys

Brass questions were included in a pilot census for the 1974 census; the pilot census was conducted in 1973 in a probability sample of areas.

PILOT CENSUS, 8-24 APRIL 1973
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.879	0.349	1971.3	154	259
20-24	2.147	0.338	1969.6	198	348
25-29	3.174	0.370	1967.5	216	381
30-34	4.068	0.389	1965.3	219	387
35-39	4.799	0.416	1963.0	224	396
40-44	4.814	0.436	1960.5	223	394
45-49	4.652	0.438	1957.7	210	371

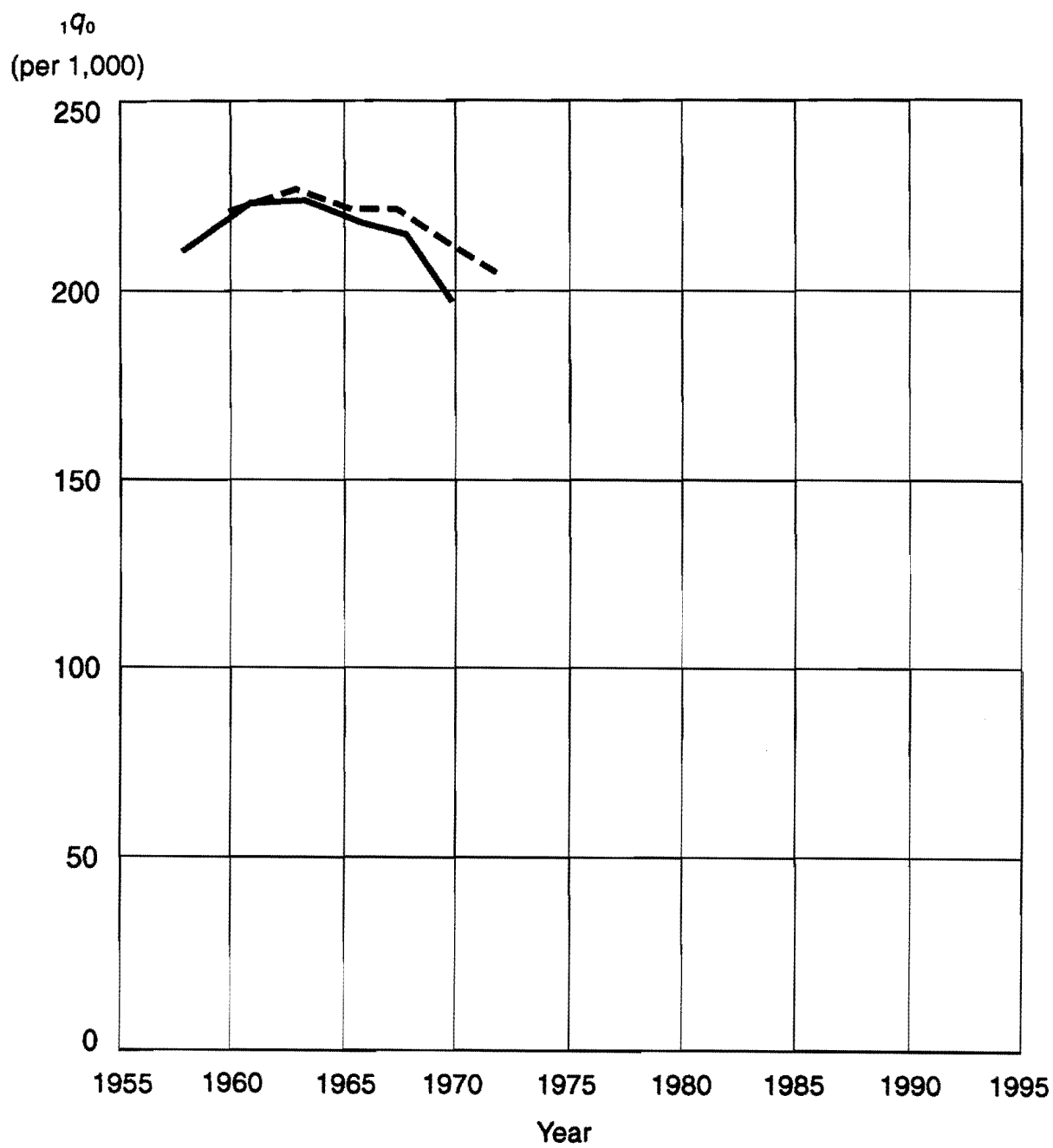
Source: J. G. C. Blacker, Thomas E. Dow, Jr. and Toma J. Makannah, "A note on fertility and mortality in Sierra Leone", London, London School of Hygiene and Tropical Medicine, n.d., mimeographed.

CENSUS, 8 DECEMBER 1974
(Indirect estimates, South model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.750	0.315	1973.2	178	309
20-24	2.102	0.335	1971.5	206	364
25-29	3.301	0.360	1969.5	213	377
30-34	4.311	0.394	1967.2	222	393
35-39	4.931	0.411	1964.9	222	392
40-44	5.017	0.444	1962.3	227	402
45-49	5.165	0.460	1959.4	221	391

Source: *A Summary of the Findings of the Sierra Leone 1974 Population Census Analysis* (Freetown, United Nations Census Analysis Project and Central Statistics Office, 1981), p. 8, table 3.

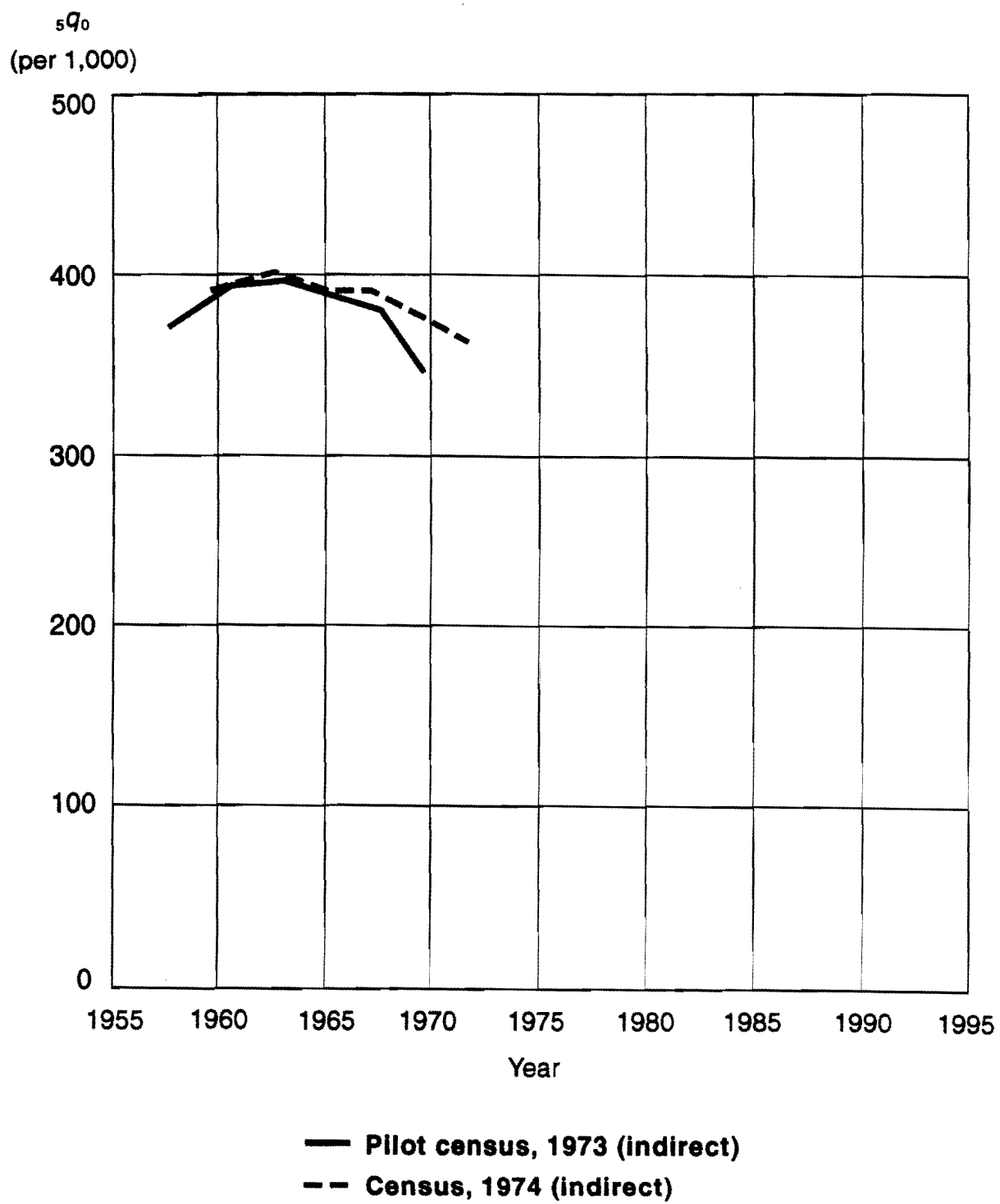
Infant mortality: Sierra Leone



— Pilot census, 1973 (Indirect)

-- Census, 1974 (Indirect)

Under-five mortality: Sierra Leone



SINGAPORE

Vital registration

Registration of births and deaths is reported to be complete.

Censuses

Brass questions were included in the 1970 census, but sufficient data to derive indirect mortality estimates have not been published.

Sample surveys

No relevant information is available.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	35	1970	20	1980	12
1961	32	1971	20	1981	11
1962	31	1972	19	1982	11
1963	28	1973	20	1983	9
1964	30	1974	17	1984	9
1965	26	1975	14	1985	9
1966	26	1976	12	1986	9
1967	25	1977	12	1987	7
1968	23	1978	13	1988	7
1969	21	1979	13	1989	7

Source: Yearbook of Statistics, Singapore (Singapore, Department of Statistics, various years).

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

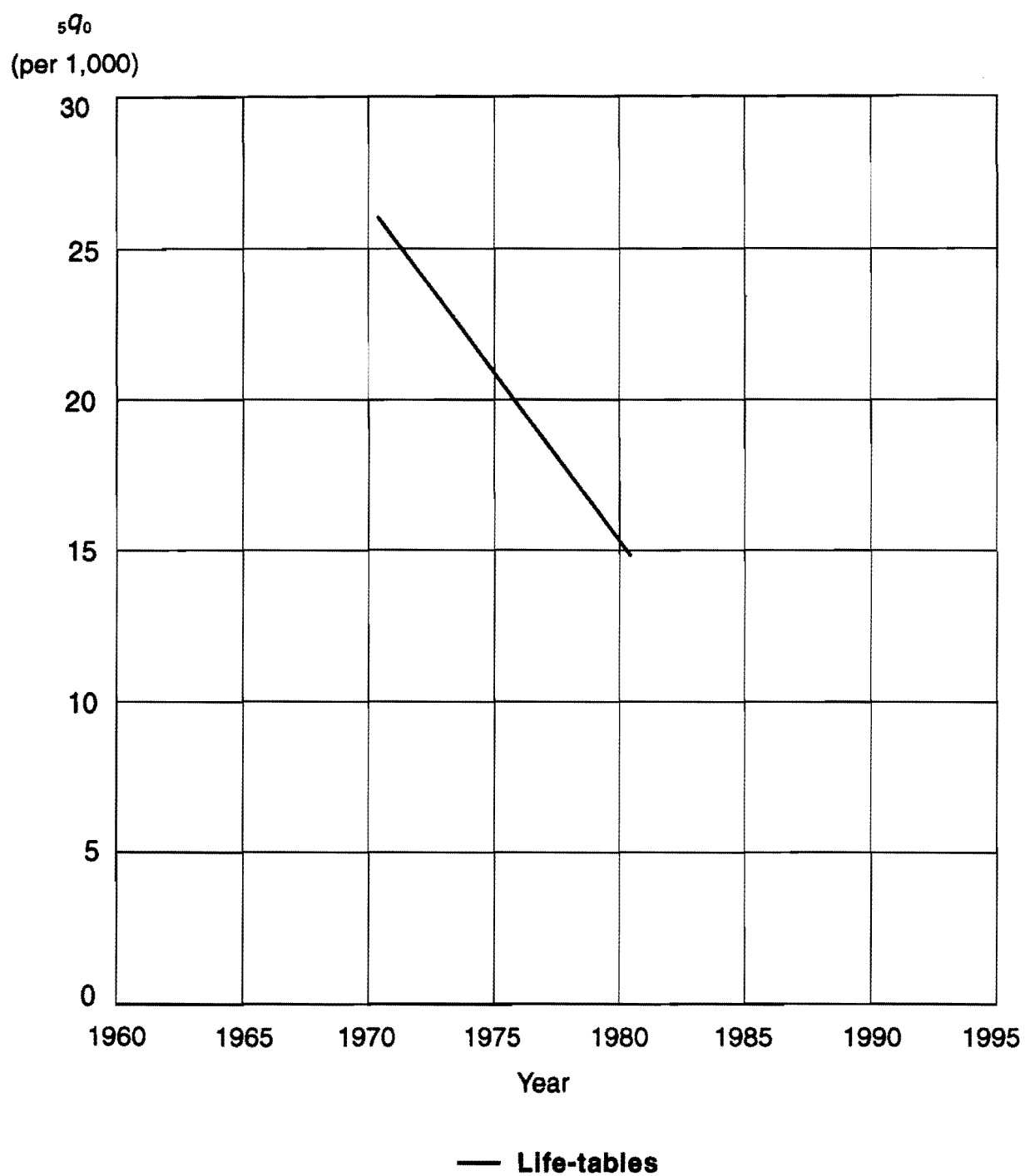
<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1970</i>	<i>1980</i>
1970	20	26
1980	12	15

Source: Demographic Yearbook, 1985 (United Nations publication, Sales No. E/F.86.XIII.1), p. 1012, table 36.

Infant mortality: Singapore



Under-five mortality: Singapore



SRI LANKA

Vital registration

Registration of births and deaths is reported to be complete.

Censuses

Brass questions were included in the 1971 census.

Sample surveys

Maternity histories were collected in 1975 by the World Fertility Survey Sri Lanka (WFS) and in 1987 by the Sri Lanka Demographic and Health Survey (DHS). Because of civil disturbances, two zones (mainly the northern and eastern provinces) containing approximately 14 per cent of the population were excluded from the 1987 survey (Sri Lanka, 1988).

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	57	1970	48	1980	34
1961	52	1971	45	1981	30
1962	53	1972	46	1982	31
1963	56	1973	46	1983	28
1964	55	1974	51	1984	27
1965	53	1975	45	1985	24
1966	54	1976	44	1986	..
1967	48	1977	42	1987	24
1968	50	1978	37	1988	19
1969	53	1979	38		

Sources: Statistical Abstract of Ceylon, 1967-1968 (Colombo, Department of Census and Statistics, 1970); Bulletin on Vital Statistics, 1976 (Colombo, Department of Census and Statistics, n.d.); Statistical Abstract of the Democratic Socialist Republic of Sri Lanka, 1985 and 1986 (Colombo, Department of Census and Statistics, 1987 and 1989); Statistical Pocket Book of the Democratic Socialist Republic of Sri Lanka (Colombo, Department of Census and Statistics, 1988); and data provided to the United Nations Statistical Office.

INFANT AND CHILD MORTALITY RATES FROM
NATIONAL LIFE-TABLES

Period	Mortality rate (per 1,000)	
	1960	1980
1964	57	89
1965	53	80
1966	54	84
1967	48	73
1971	46	67
1981	30	41

Sources: *Statistical Abstract of Ceylon, 1967-1968* (Colombo, Department of Census and Statistics, 1970); *Bulletin on Vital Statistics, 1976* (Colombo, Department of Census and Statistics, n.d.); *Statistical Abstract of the Democratic Socialist Republic of Sri Lanka, 1985 and 1986* (Colombo, Department of Census and Statistics, 1987 and 1989); *Statistical Pocket Book of the Democratic Socialist Republic of Sri Lanka* (Colombo, Department of Census and Statistics, 1988); and data provided to the United Nations Statistical Office.

CENSUS, 9 OCTOBER 1971
(Indirect estimates, general pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.058	0.093	1970.7	96	143
20-24	0.647	0.093	1969.8	85	123
25-29	1.559	0.096	1968.5	76	109
30-34	3.304	0.103	1966.7	74	105
35-39	4.530	0.115	1964.6	76	109
40-44	5.136	0.143	1961.9	85	123
45-49	5.266	0.165	1958.7	90	133

Source: Data provided to the United Nations Statistical Office.

WORLD FERTILITY SURVEY SRI LANKA, AUGUST-NOVEMBER 1975
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1980
1960-1965	60	86
1965-1970	59	83
1970-1975	60	86

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, International Statistical Institute, 1983), p. 68.

WORLD FERTILITY SURVEY SRI LANKA, AUGUST-NOVEMBER 1975
(Indirect estimates, general pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.045	0.044	1974.5	48	63
20-24	0.606	0.079	1973.7	73	104
25-29	1.728	0.086	1972.3	69	97
30-34	3.279	0.084	1970.4	62	85
35-39	4.608	0.095	1968.1	65	90
40-44	5.259	0.115	1965.2	71	100
45-49	5.850	0.132	1962.0	75	107

Source: World Fertility Survey standard recode tapes and *World Fertility Survey Sri Lanka, 1975: First Report* (Colombo, Ministry of Plan Implementation, Department of Statistics, 1978), p. 57, table 4.1.

SRI LANKA DEMOGRAPHIC AND HEALTH SURVEY, JANUARY-MARCH 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1972-1977	40	59
1977-1981	39	49
1982-1987*	25	35

Source: *Sri Lanka Demographic and Health Survey, 1987* (Colombo, Ministry of Plan Implementation, Department of Census and Statistics; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 95, table 6.1.

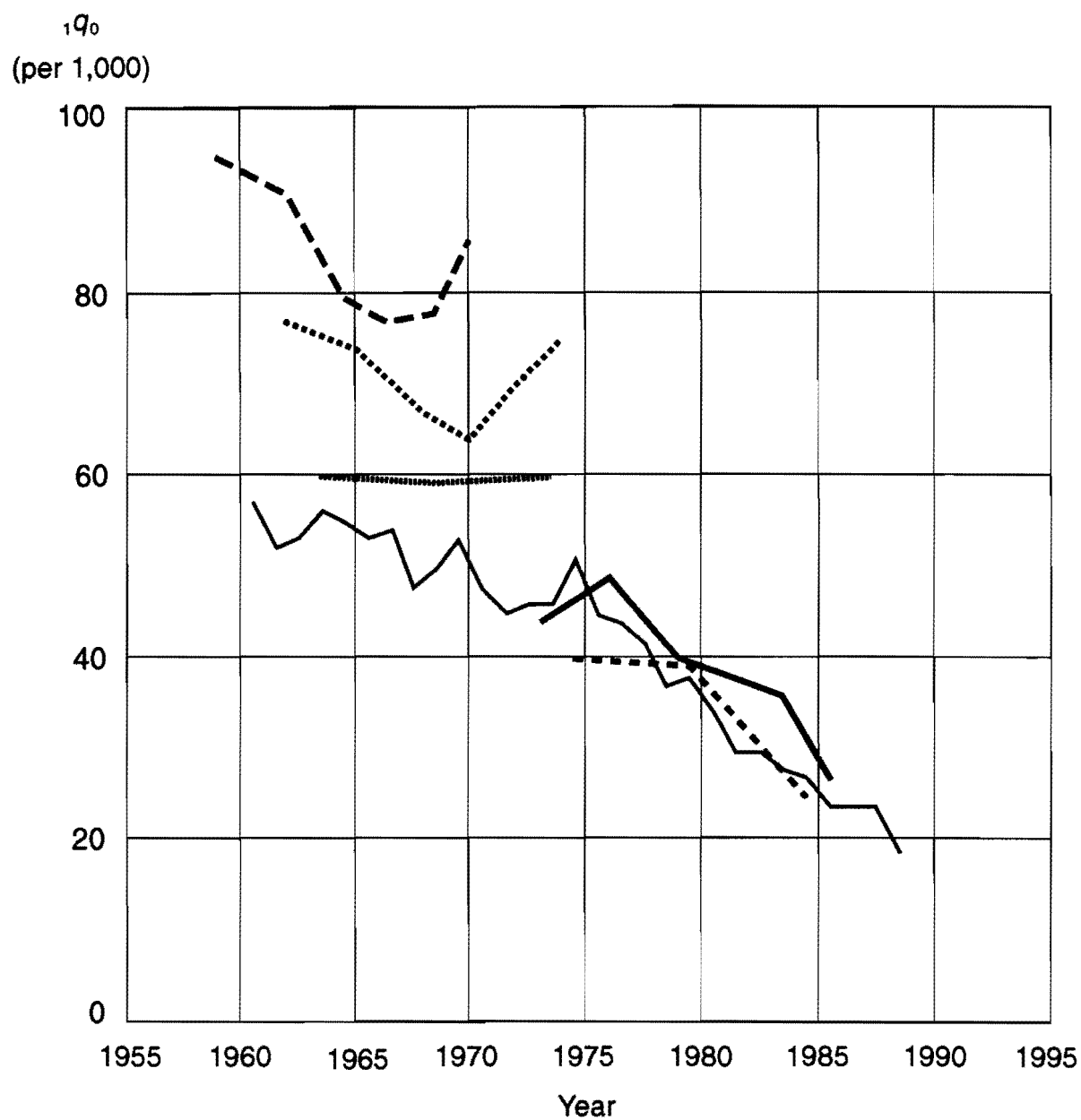
* Including events occurring in 1987 up to the month preceding the date of interview.

SRI LANKA DEMOGRAPHIC AND HEALTH SURVEY, JANUARY-MARCH 1987
(Indirect estimates, general pattern)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.045	0.060	1986.0	65	90
20-24	0.553	0.026	1985.1	26	32
25-29	1.435	0.040	1983.7	35	44
30-34	2.385	0.046	1981.6	37	47
35-39	3.036	0.052	1979.1	39	50
40-44	4.052	0.071	1976.2	47	63
45-49	4.902	0.078	1972.8	49	65

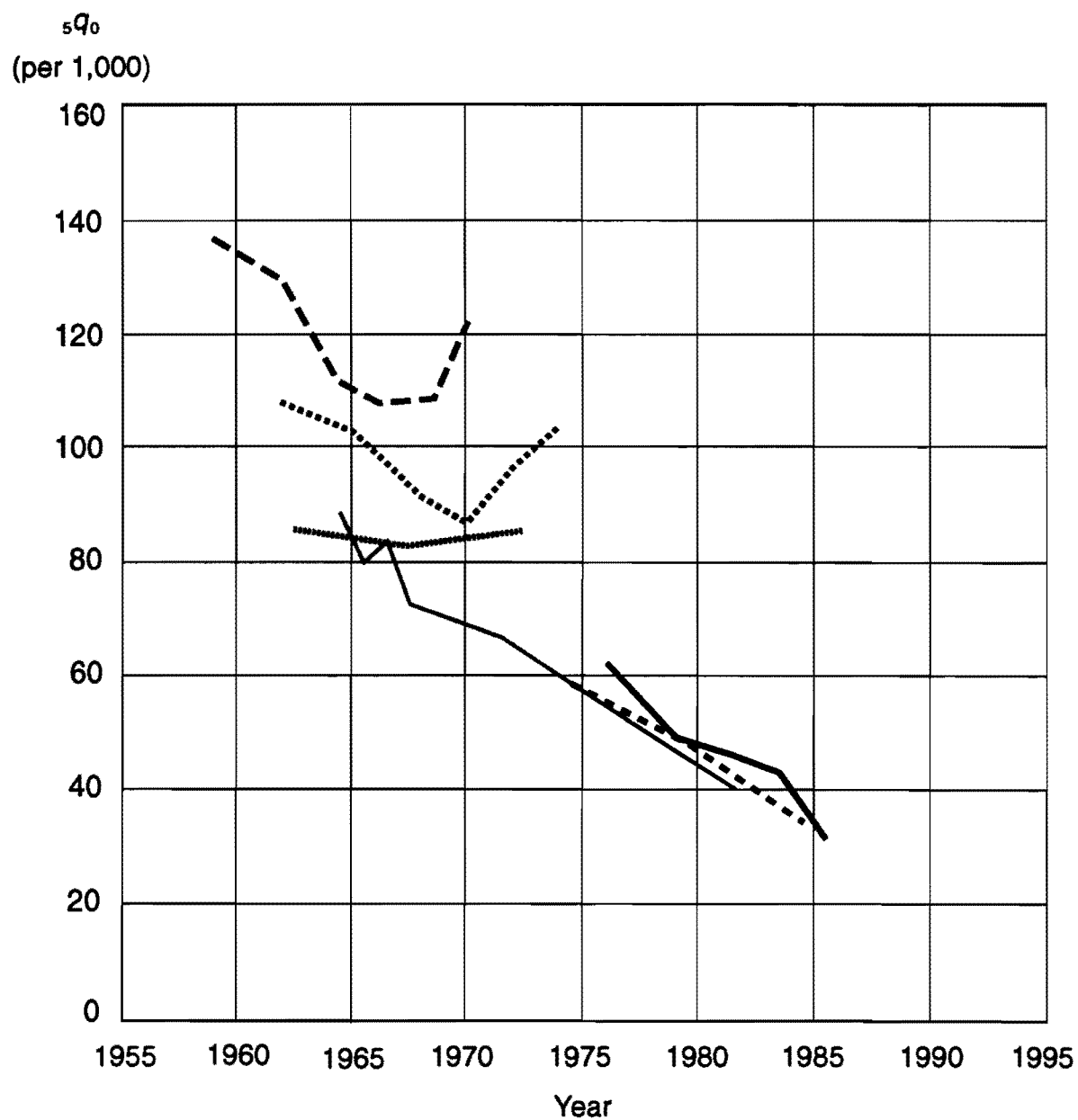
Source: *Sri Lanka Demographic and Health Survey, 1987* (Colombo, Ministry of Plan Implementation, Department of Census and Statistics; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), pp. 21 and 99, tables 2.2 and 6.4.

Infant mortality: Sri Lanka



- Vital registration
- - Census, 1973 (indirect)
- World Fertility Survey Sri Lanka, 1975 (direct)
- World Fertility Survey Sri Lanka, 1975 (indirect)
- - - Sir Lanka Demographic and Health Survey, 1987 (direct)
- Sir Lanka Demographic and Health Survey, 1987 (indirect)

Under-five mortality: Sri Lanka



- Life-tables
- - Census, 1973 (Indirect)
- World Fertility Survey Sri Lanka, 1975 (direct)
- World Fertility Survey Sri Lanka, 1975 (indirect)
- . - Sir Lanka Demographic and Health Survey, 1987 (direct)
- Sir Lanka Demographic and Health Survey, 1987 (indirect)

SUDAN

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1973 and 1983 censuses, although these questions were not asked of the nomadic population, consisting of approximately 12 per cent of the total population (Sudan, 1989).

Sample surveys

Maternity histories were collected by the Sudan Fertility Survey in 1979 (WFS) and the Sudan Demographic and Health Survey in 1989/1990 (DHS), but these surveys covered only the northern part of the country and are not included here.

CENSUS, 3 APRIL 1973
(Indirect estimates, North model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1970</i>
15-19	0.369	0.175	1972.1	170	287
20-24	1.792	0.185	1970.7	136	231
25-29	3.284	0.192	1968.8	121	203
30-34	4.358	0.205	1966.4	117	196
35-39	5.010	0.215	1963.9	114	190
40-44	4.942	0.246	1961.2	120	201
45-49	4.845	0.269	1958.3	120	202

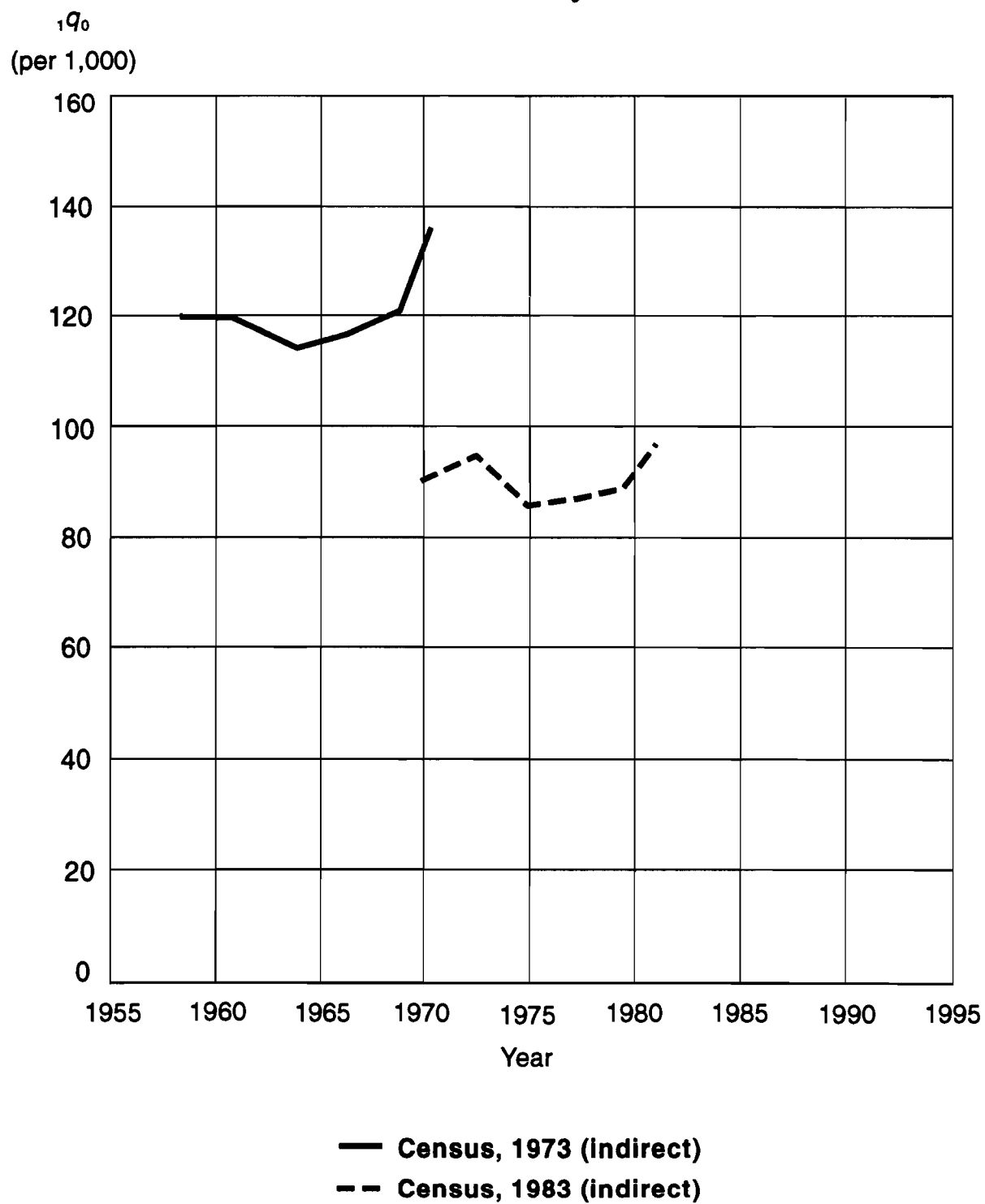
Source: Sudan, *Population and Housing Census, 1983* (Khartoum, Ministry of Finance and National Economy, Population Census Office, 1989), p. 1.38, table IV.11.

CENSUS, 1 FEBRUARY 1983
(Indirect estimates, North model)

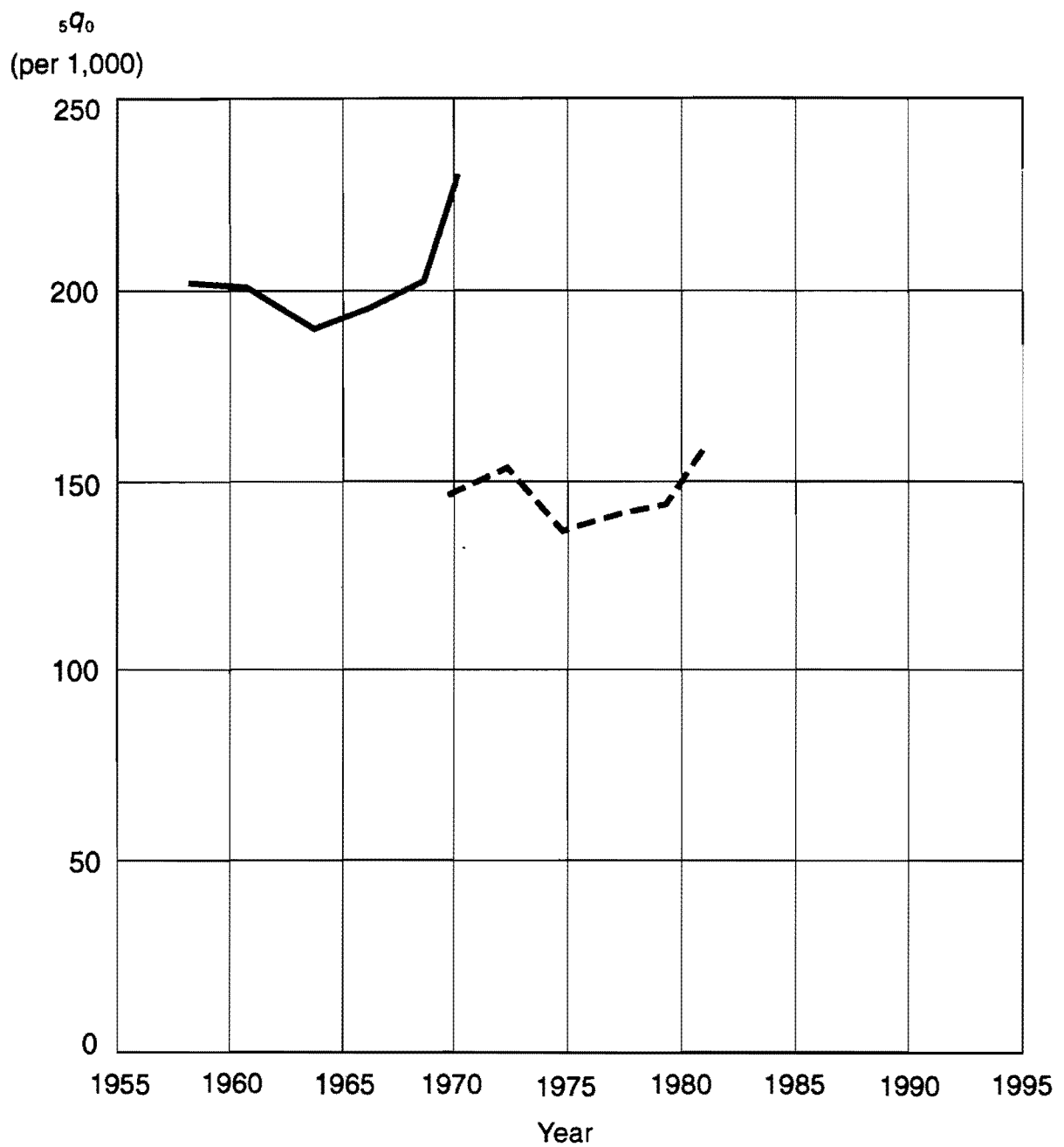
<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1970</i>
15-19	0.189	0.105	1982.0	107	178
20-24	1.225	0.120	1980.9	97	158
25-29	2.874	0.128	1979.3	89	144
30-34	4.246	0.140	1977.3	88	142
35-39	5.232	0.149	1975.1	86	138
40-44	5.652	0.181	1972.7	95	154
45-49	5.743	0.192	1969.8	91	147

Source: Sudan, *Population and Housing Census, 1983* (Khartoum, Ministry of Finance and National Economy, Population Census Office, 1989), p. 1.38, table IV.11.

Infant mortality: Sudan



Under-five mortality: Sudan



— Census, 1973 (indirect)

-- Census, 1983 (indirect)

SYRIAN ARAB REPUBLIC

Vital registration

Registration of births and deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1970 and 1981 censuses, as well as in the 1976 sample census.

Sample surveys

Maternity histories were collected in 1978 by the Syria Fertility Survey (WFS). Brass questions were included in the household survey of the Syria Fertility Survey in 1978 and in the Syria EPI/CDD and Child Mortality Survey in 1990. A seven-round multi-round survey, the Pregnancy Follow-up Survey, was held from 1976 to 1979.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	31	1969	25	1978	12
1961	26	1970	25	1979	13
1962	33	1971	24	1980	..
1963	31	1972	22	1981	9
1964	..	1973	..	1982	7
1965	22	1974	..	1983	9
1966	28	1975	14	1984	7
1967	26	1976	15	1985	6
1968	25	1977	13		

Source: Data provided to the United Nations Statistical Office.

CENSUS, 23 SEPTEMBER 1970 (Indirect estimates, West model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1970</i>
15-19	0.203	0.108	1969.7	119	174
20-24	1.440	0.127	1968.5	110	159
25-29	3.249	0.148	1966.6	112	162
30-34	4.934	0.172	1964.4	119	175
35-39	6.348	0.202	1962.0	129	191
40-44	7.118	0.239	1959.3	142	212
45-49	7.503	0.275	1956.3	151	226

Source: *Demographic Yearbook—Special Issue: Historical Supplement* (United Nations publication, Sales No. E/F.79.XIII.8), pp. 256-257 and 520.

SAMPLE CENSUS, SEPTEMBER 1976
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.185	0.079	1975.6	82	115
20-24	1.212	0.090	1974.4	80	112
25-29	2.989	0.104	1972.8	82	116
30-34	4.709	0.122	1970.9	89	126
35-39	6.255	0.156	1968.7	104	151
40-44	7.102	0.187	1966.2	116	169
45-49	7.537	0.215	1963.2	121	178

Source: M. Nader al' Hallak and others, *Composition and Growth of Population in the Syrian Arab Republic* (Damascus, State Planning Commission, Central Bureau of Statistics, in collaboration with The Population Council, 1979), tables 1.0 and 8.0.

FOLLOW-UP DEMOGRAPHIC SURVEY, OCTOBER 1976-OCTOBER 1979
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1976-1979	54	

Source: *Pregnancy Follow-up Study in Syria, 1976-1979*, No. 480-2-221-84 (Damascus, Office of the Prime Minister, Central Bureau of Statistics, 1984), p. 54.

SYRIA FERTILITY SURVEY, JUNE-AUGUST 1978
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1963-1968	79	116
1968-1973	69	91
1973-1978	65	87

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 53.

SYRIA FERTILITY SURVEY, HOUSEHOLD SURVEY, JUNE-AUGUST 1978
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.184	0.077	1977.5	82	115
20-24	1.256	0.083	1976.3	74	103
25-29	3.024	0.086	1974.6	69	95
30-34	5.018	0.102	1972.6	75	105
35-39	6.529	0.112	1970.3	77	107
40-44	7.495	0.139	1967.7	87	124
45-49	7.970	0.168	1964.8	96	137

Source: *Syria Fertility Survey 1978: Principal Report*, vol. I (Damascus, Office of the Prime Minister, Central Bureau of Statistics, in collaboration with the World Fertility Survey, 1982), p. 63, table 6.1.

CENSUS, 8 SEPTEMBER 1981
(Indirect estimates, West model)

Period	Reference date	Mortality rate (per 1,000)	
		1990	1990
15-19	..	..	..
20-24	1979	66	90
25-29	1977	67	92
30-34	1975	74	101
35-39	1973	75	105
40-44	1970	92	131
45-49	1967	101	146

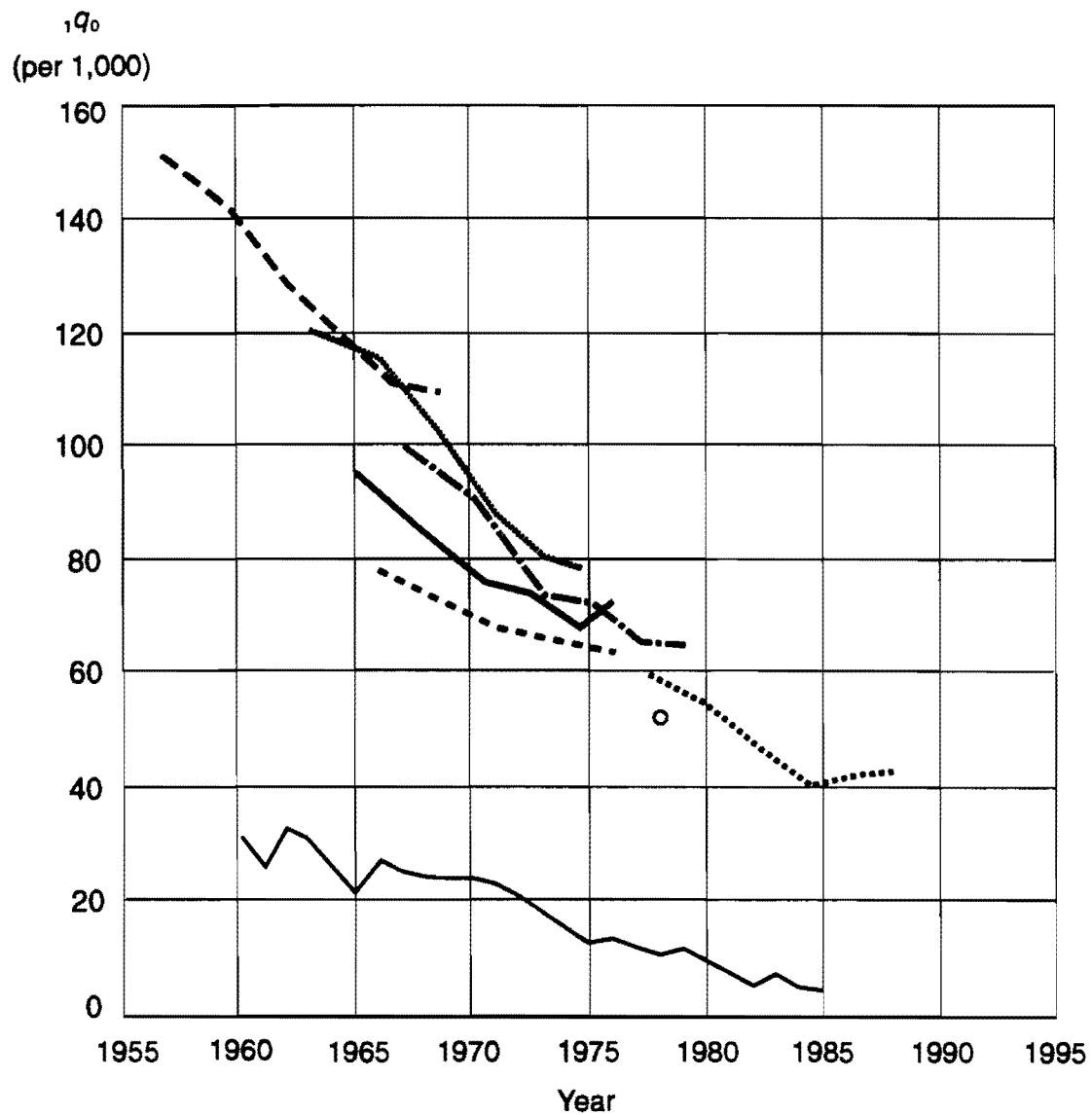
Source: *Infant and Childhood Mortality in Western Asia*, E/ESCWA/SD/89/10 (Baghdad, United Nations, Economic and Social Commission for Western Asia, 1989), p. 62, table 16.

SYRIA EPI/CDD AND CHILD MORTALITY SURVEY, SEPTEMBER 1990
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.231	0.043	1989.4	41	52
20-24	1.218	0.048	1988.2	45	57
25-29	2.845	0.051	1986.6	44	56
30-34	4.526	0.052	1984.7	42	53
35-39	6.092	0.063	1982.6	48	61
40-44	7.123	0.083	1980.2	56	75
45-49	7.556	0.102	1977.3	61	83

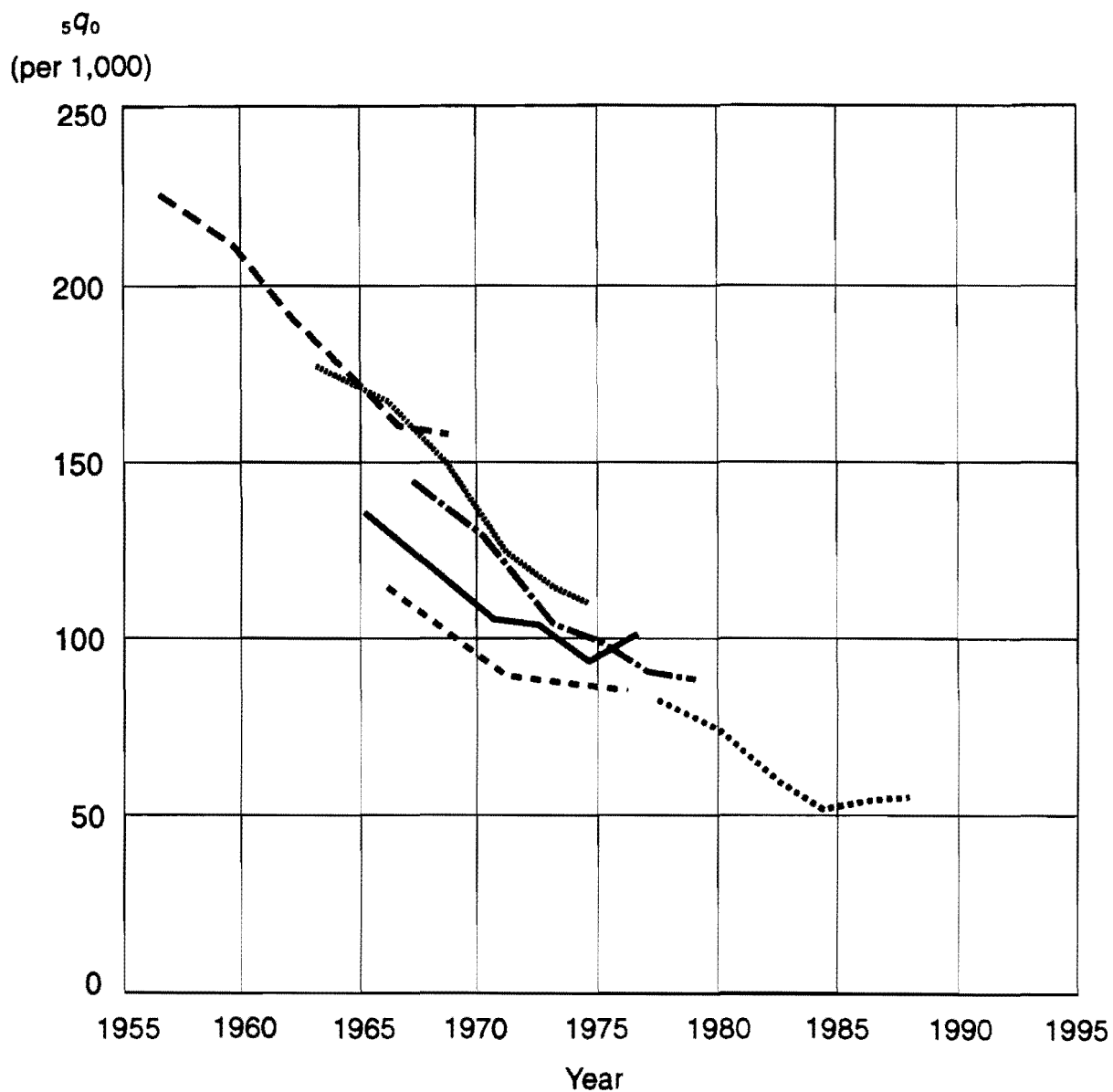
Source: Syrian Arab Republic, *Report on the EPI/CDD/Mortality Survey* (Damascus, Ministry of Health; World Health Organization and United Nations Children's Fund, 1990), p. 117, annex III.

Infant mortality: Syrian Arab Republic



- Vital registration
- - - Census, 1970 (indirect)
- Sample census, 1976 (indirect)
- Follow-up Demographic Survey, 1977 (direct)
- - - Syria Fertility Survey, 1978 (direct)
- Syria Fertility Survey, 1978 (indirect)
- - - Census, 1981 (indirect)
- Syria EPI/Cdd and Child Mortality Survey, 1990 (indirect)

Under-five mortality: Syrian Arab Republic



- Census, 1970 (indirect)
- Sample census, 1976 (Indirect)
- Syria Fertility Survey, 1978 (direct)
- Syria Fertility Survey, 1978 (indirect)
- ..— Census, 1981 (indirect)
- Syria EPI/Cdd and Child Mortality Survey, 1990 (indirect)

THAILAND

Vital registration

Registration of births and deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1970 and 1980 censuses.

Sample surveys

Maternity histories were collected in 1975 by the Survey of Fertility in Thailand (WFS) and in 1987 by the Thailand Demographic and Health Survey (DHS). Brass questions were included in the Survey of Population Change during 1974-1976, 1984-1986 and 1989, and the Thailand Contraceptive Prevalence Surveys in 1981 and 1984. The Survey of Population Change was a multi-round survey; and for the 1974-1976 and 1984-1986 surveys, dual-record procedures were applied to estimate the total numbers of births and deaths. A number of other surveys have been conducted since 1960, but they are not included here because the available data are insufficient for the derivation of mortality estimates.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1980</i>
1964-1965	84	..
1974-1976	52	81
1985-1986	41	47
1989	39	44

Sources: Thailand, *The Survey of Population Change, 1974-1976, 1985-1986 and 1989* (Bangkok, Office of the Prime Minister, National Statistical Office, 1978, 1987 and n.d.), p. 50, table 10; p. 31, table 11; and p. 50, table 12, respectively.

CENSUS, 1 APRIL 1970 (Indirect estimates, West model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1980</i>
15-19	0.132	0.062	1969.4	71	97
20-24	1.083	0.073	1968.2	67	91
25-29	2.575	0.098	1966.4	78	108
30-34	4.013	0.121	1964.2	87	123
35-39	5.304	0.148	1961.7	98	141
40-44	6.139	0.182	1959.1	111	161
45-49	6.330	0.210	1956.1	116	170

Source: Unpublished census tabulations provided by the National Statistical Office, Thailand.

SURVEY OF POPULATION CHANGE, JULY 1974-JUNE 1976
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.128	0.077	1974.5	81	115
20-24	0.868	0.070	1973.3	64	86
25-29	2.077	0.079	1971.6	64	87
30-34	3.481	0.103	1969.5	76	106
35-39	4.596	0.118	1967.3	80	113
40-44	5.661	0.147	1964.7	92	131
45-49	6.209	0.181	1961.7	102	148

Source: Thailand, *The Survey of Population Change, 1974-1976*, Publication series E-Sur-No. 5-78 (Bangkok, National Statistical Office, 1978), tables 1 and 8.

SURVEY OF FERTILITY IN THAILAND, APRIL-JUNE 1975
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1960-1965	91	130
1965-1970	83	114
1970-1975	65	91

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 86.

SURVEY OF FERTILITY IN THAILAND, APRIL-JUNE 1975
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.113	0.088	1974.4	98	141
20-24	0.882	0.077	1973.2	70	97
25-29	2.126	0.090	1971.5	72	100
30-34	3.515	0.114	1969.4	83	116
35-39	4.614	0.122	1967.0	82	116
40-44	5.847	0.177	1964.3	108	157
45-49	6.541	0.174	1961.4	98	141

Source: World Fertility Survey standard recode tapes.

CENSUS, 1 APRIL 1980
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.094	0.039	1979.3	44	56
20-24	0.727	0.046	1978.1	44	56
25-29	1.729	0.056	1976.4	47	61
30-34	2.773	0.066	1974.2	52	68
35-39	3.805	0.080	1971.8	57	76
40-44	4.608	0.098	1969.2	63	86
45-49	5.079	0.119	1966.2	69	96

Source: Thailand, *Preliminary Report: 1980 Population and Housing Census, Whole Kingdom* (Bangkok, Office of the Prime Minister, National Statistical Office, n.d.), tables 7 and 8.

THAILAND CONTRACEPTIVE PREVALENCE SURVEY, 25 MARCH-10 JUNE 1981
(Indirect estimates, West model)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.109	0.046	1980.0	42	54
20-24	0.604	0.055	1979.0	51	67
25-29	1.696	0.071	1977.6	60	81
30-34	2.758	0.088	1976.1	68	93
35-39	3.921	0.097	1974.4	70	96
40-44	5.024	0.139	1972.2	90	128
45-49	5.881	0.162	1969.3	95	136

Source: Peerasit Kamnuasilpa and Apichat Chamratrithirong, *A New Decade of Fertility and Family Planning in Thailand: 1981 Contraceptive Prevalence Survey* (Bangkok, Ministry of Public Health; and Columbia, Maryland, Westinghouse Applied Systems Analysis, 1982).

^a Average parity for ever-married women adjusted by applying the proportion ever married from the 1980 census.

CONTRACEPTIVE PREVALENCE SURVEY, 1984
(Indirect estimates, West model)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.136	0.074	1983.0	62	84
20-24	0.628	0.045	1981.9	41	52
25-29	1.691	0.058	1980.6	50	65
30-34	2.491	0.060	1979.2	49	64
35-39	3.460	0.085	1977.6	63	85
40-44	4.515	0.097	1975.6	66	90
45-49	5.317	0.144	1972.7	86	122

Source: *Contraceptive Use and Fertility in Thailand: Results from the 1984 Contraceptive Prevalence Survey* (Bangkok, National Institute of Development Administration, Research Center; Mahidol University, Institute for Population and Social Research; and Ministry of Public Health, National Family Planning Programme, 1986).

^a Average parity for ever-married women adjusted by applying the proportion ever married from the 1980 census.

SURVEY OF POPULATION CHANGE, JULY 1985-SEPTEMBER 1986
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.111	0.038	1985.1	41	51
20-24	0.710	0.036	1983.8	34	42
25-29	1.563	0.047	1982.0	40	50
30-34	2.440	0.059	1979.8	47	60
35-39	3.305	0.080	1977.3	56	75
40-44	4.280	0.098	1974.7	63	86
45-49	5.106	0.127	1971.7	73	101

Source: *The Survey of Population Change, 1985-1986*, Publication series E-Sur-Pop-No. 1-87, (Bangkok, Office of the Prime Minister, National Statistical Office, 1987), pp. 71 and 77, tables 3 and 4.

THAILAND DEMOGRAPHIC AND HEALTH SURVEY, MARCH-JUNE 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1972-1976	55	67
1977-1981	41	53
1982-1987*	35	45

Source: Napaporn Chayovan, Peerasit Kamnuansilpa and John Knodel, *Thailand Demographic and Health Survey 1987* (Bangkok, Chulalongkorn University, Institute of Population Studies; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), p. 90, table 6.1.

* Including events occurring in 1987 up to the month preceding the date of interview.

THAILAND DEMOGRAPHIC AND HEALTH SURVEY, MARCH-JUNE 1987
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.087	0.011	1986.3	12	14
20-24	0.600	0.043	1985.1	41	52
25-29	1.394	0.038	1983.4	33	41
30-34	2.185	0.059	1981.2	47	61
35-39	3.036	0.072	1978.9	52	68
40-44	3.912	0.100	1976.3	65	89
45-49	4.988	0.123	1973.3	72	99

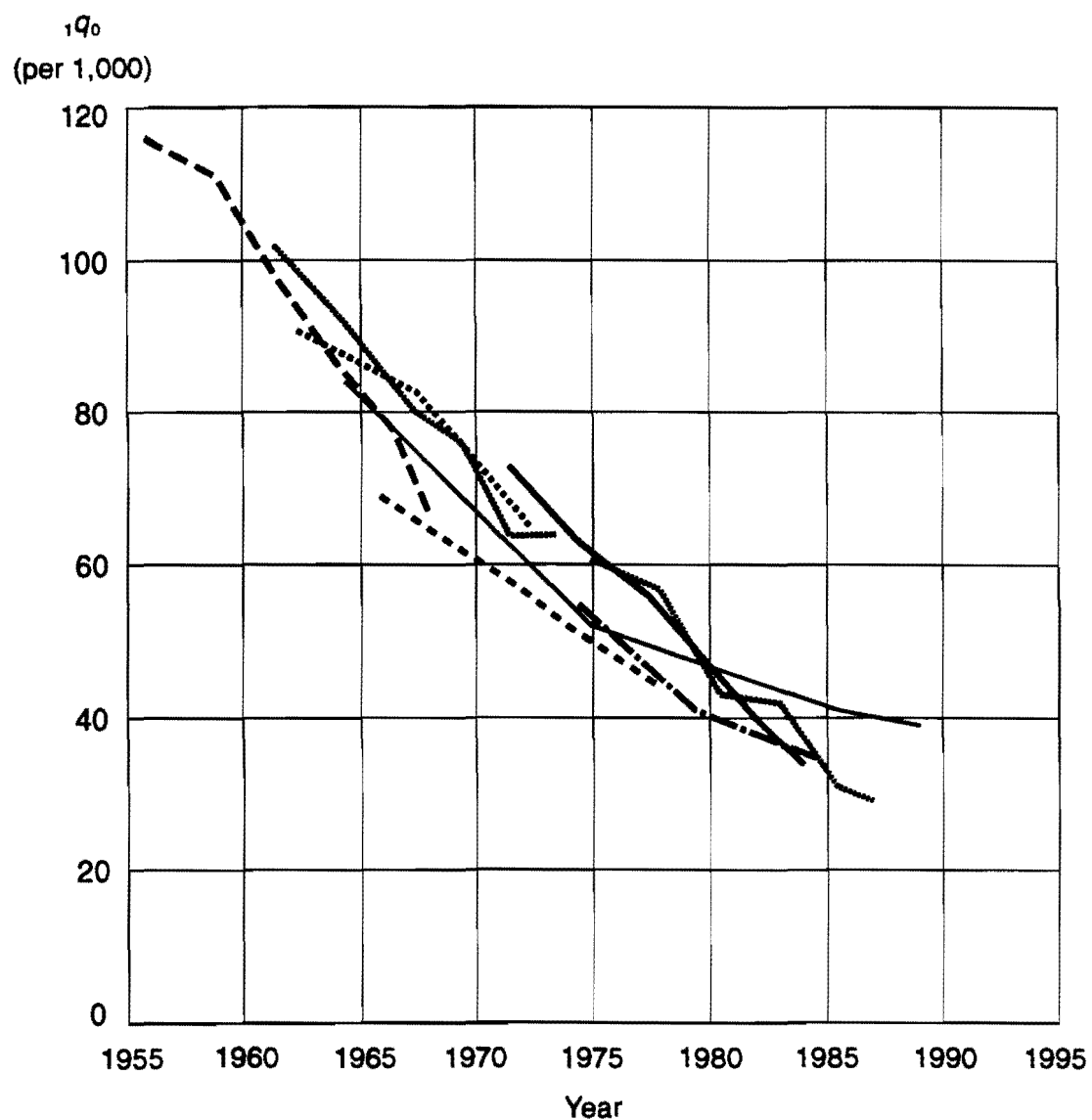
Source: Napaporn Chayovan, Peerasit Kamnuansilpa and John Knodel, *Thailand Demographic and Health Survey, 1987* (Bangkok, Chulalongkorn University, Institute of Population Studies; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988), pp. 26 and 94, tables 2.1 and 6.4.

SURVEY OF POPULATION CHANGE, 1989
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.087	0.027	1988.5	29	35
20-24	0.569	0.030	1987.2	29	35
25-29	1.234	0.036	1985.4	31	38
30-34	1.939	0.053	1983.1	42	54
35-39	2.569	0.059	1980.6	43	55
40-44	3.323	0.087	1977.9	57	77
45-49	4.073	0.103	1975.0	61	82

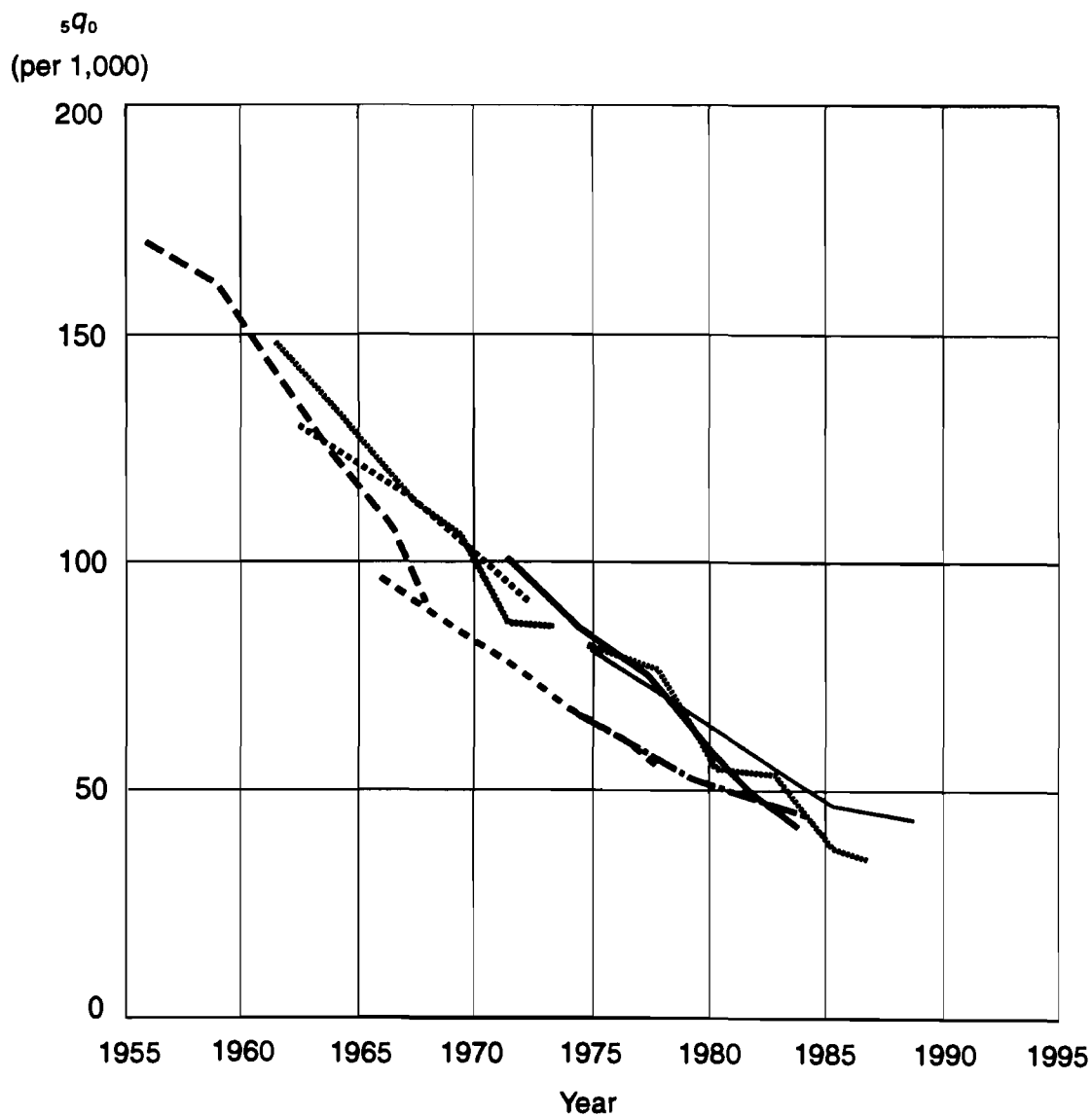
Source: Thailand, *The Survey of Population Change, 1989* (Bangkok, Office of the Prime Minister, National Statistical Office), pp. 14 and 20, tables 7 and 8.

Infant mortality: Thailand



- Life-tables
- - - Census, 1970 (indirect)
- Survey of Population Change, 1974 (indirect)
- Survey of Fertility in Thailand, 1975 (direct)
- - - Census, 1980 (indirect)
- Survey of Population Change, 1985 (indirect)
- Thailand Demographic and Health Survey, 1987 (direct)
- Survey of Population Change, 1989 (indirect)

Under-five mortality: Thailand



- Life-tables
- - - Census, 1970 (indirect)
- Survey of Population Change, 1974 (indirect)
- Survey of Fertility in Thailand, 1975 (direct)
- . - . - Census, 1980 (indirect)
- Survey of Population Change, 1985 (indirect)
- - - - Thailand Demographic and Health Survey, 1987 (direct)
- Survey of Population Change, 1989 (indirect)

TOGO

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

No relevant data are available.

Sample surveys

Maternity histories were collected in 1988 by the Enquête démographique et de santé au Togo (DHS). Brass questions were included in the demographic sample surveys of 1961 and 1971; the results of the 1961 survey are not included here as they are outside the scope of this study, although they confirm the decline in child mortality indicated by the 1971 and 1988 data.

ENQUÊTE DÉMOGRAPHIQUE, MARCH-APRIL 1971 (Indirect estimates, North model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				1960	1970
15-19	0.25	0.080	1970.2	81	128
20-24	1.42	0.169	1968.9	130	219
25-29	2.94	0.221	1967.1	143	242
30-34	4.12	0.245	1965.0	143	241
35-39	4.98	0.285	1962.6	154	260
40-44	5.44	0.313	1960.0	156	264
45-49	5.68	0.354	1957.1	164	276

Source: Koffi Adognon, "L'évolution de la fécondité dans les années soixante (1961-1971) au Togo", in *Actes du colloque de démographie d'Abidjan (22-26 janvier 1979)*, vol. 1, *Fécondité* (Abidjan, Institut de formation et de recherche démographiques, 1980), p. 212, table 7.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ AU TOGO, JUNE-OCTOBER 1988 (Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	1960	1970
1973-1977	107	206
1978-1982	87	159
1983-1988	80	158

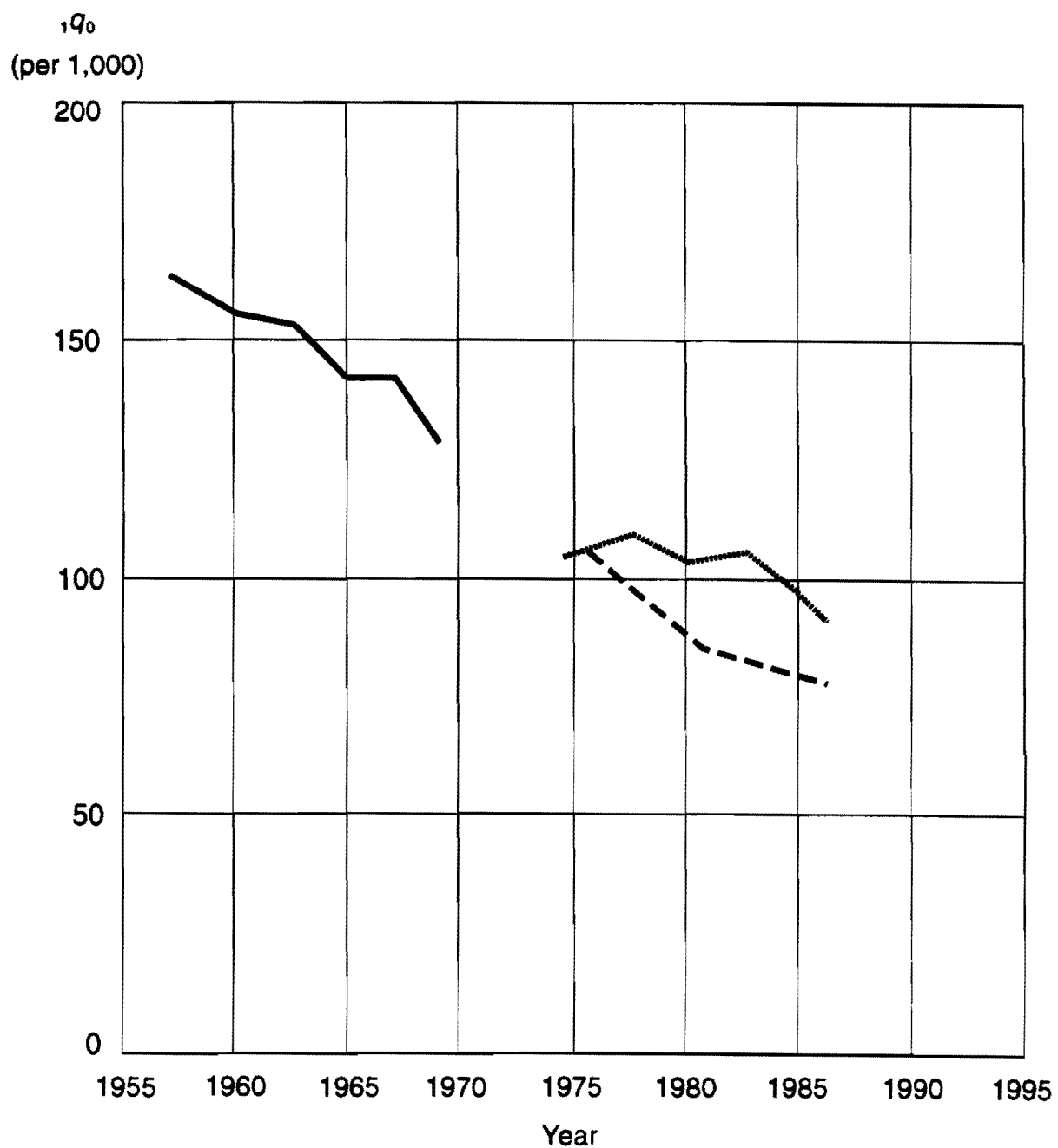
Source: Akoua Agounké, Mensan Assogba and Kodjo Anipah, *Enquête démographique et de santé au Togo, 1988* (Lomé, Direction générale de la santé, Direction de la statistique, Unité de recherche démographique; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 68, table 6.1.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ AU TOGO, JUNE-OCTOBER 1988
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.26	0.11	1987.4	107	176
20-24	1.38	0.12	1986.2	93	152
25-29	2.87	0.15	1984.4	100	164
30-34	4.60	0.18	1982.4	108	178
35-39	5.73	0.19	1980.1	105	173
40-44	6.89	0.22	1977.5	111	185
45-49	7.28	0.23	1974.7	106	175

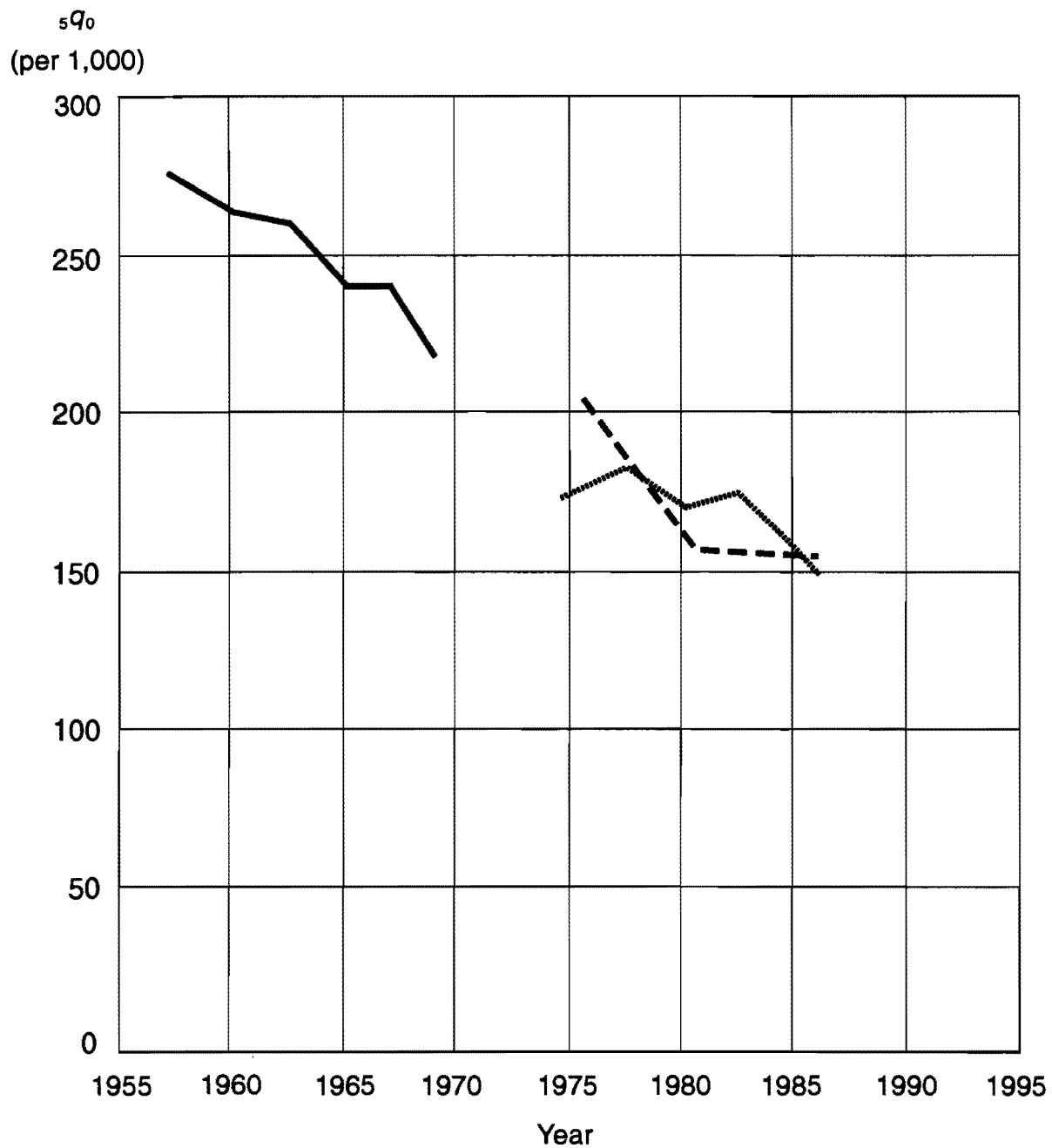
Source: Akoua Agounké, Mensan Assogba and Kodjo Anipah, *Enquête démographique et de santé au Togo, 1988* (Lomé, Direction générale de la santé, Direction de la statistique, Unité de recherche démographique; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 69, table 6.2.

Infant mortality: Togo



- Enquête démographique, 1971 (indirect)
- - Enquête démographique et de santé au Togo, 1988 (direct)
- Enquête démographique et de santé au Togo, 1988 (indirect)

Under-five mortality: Togo



- Enquête démographique, 1971 (indirect)
- - Enquête démographique et de santé au Togo, 1988 (direct)
- Enquête démographique et de santé au Togo, 1988 (indirect)

TRINIDAD AND TOBAGO

Vital registration

Registration of births and deaths is reported to be complete.

Censuses

Brass questions have not been included in the censuses.

Sample surveys

Maternity histories were collected in 1977 by the Trinidad and Tobago Fertility Survey (WFS) and in 1987 by the Trinidad and Tobago Demographic and Health Survey (DHS).

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	45	1970	35	1980	22
1961	45	1971	31	1981	16
1962	38	1972	25	1982	16
1963	41	1973	26	1983	13
1964	35	1974	26	1984	14
1965	38	1975	26	1985	..
1966	42	1976	25	1986	..
1967	36	1977	21	1987	11
1968	37	1978	24		
1969	40	1979	26		

Source: Data provided to the United Nations Statistical Office.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1980</i>
1960	49	58
1970	34	42
1980-1985	19	24

Sources: Trinidad and Tobago, *Annual Statistical Digest, 1971/72*, No. 21 (Port-of-Spain, General Statistical Office, n.d.), p. 34, table 30; and *Demographic Yearbook, 1985* (United Nations publication, Sales No. E/F.86.XIII.1), pp. 1008-1009, table 36.

TRINIDAD AND TOBAGO FERTILITY SURVEY, 26 MARCH-30 JUNE 1977
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1962-1967	38	48
1967-1972	44	51
1972-1977	43	50

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, International Statistical Institute, 1983), p. 122.

TRINIDAD AND TOBAGO FERTILITY SURVEY, 26 MARCH-30 JUNE 1977
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.117	0.065	1976.4	73	90
20-24	0.865	0.044	1975.2	44	51
25-29	1.982	0.043	1973.3	39	46
30-34	3.201	0.058	1971.1	50	59
35-39	4.320	0.068	1968.5	56	67
40-44	5.213	0.069	1965.6	54	64
45-49	5.831	0.082	1962.4	58	69

Source: World Fertility Survey standard recode tapes.

TRINIDAD AND TOBAGO DEMOGRAPHIC AND HEALTH SURVEY, MAY-SEPTEMBER 1987
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1972-1976	47	53
1977-1981	37	41
1982-1987*	26	30

Source: Kenneth Heath, Dona Da Costa-Martinez and Amy R. Sheon, *Trinidad and Tobago Demographic and Health Survey, 1987* (Port-of-Spain, Family Planning Association of Trinidad and Tobago; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988).

* Including events occurring in 1987 up to the month preceding the date of interview.

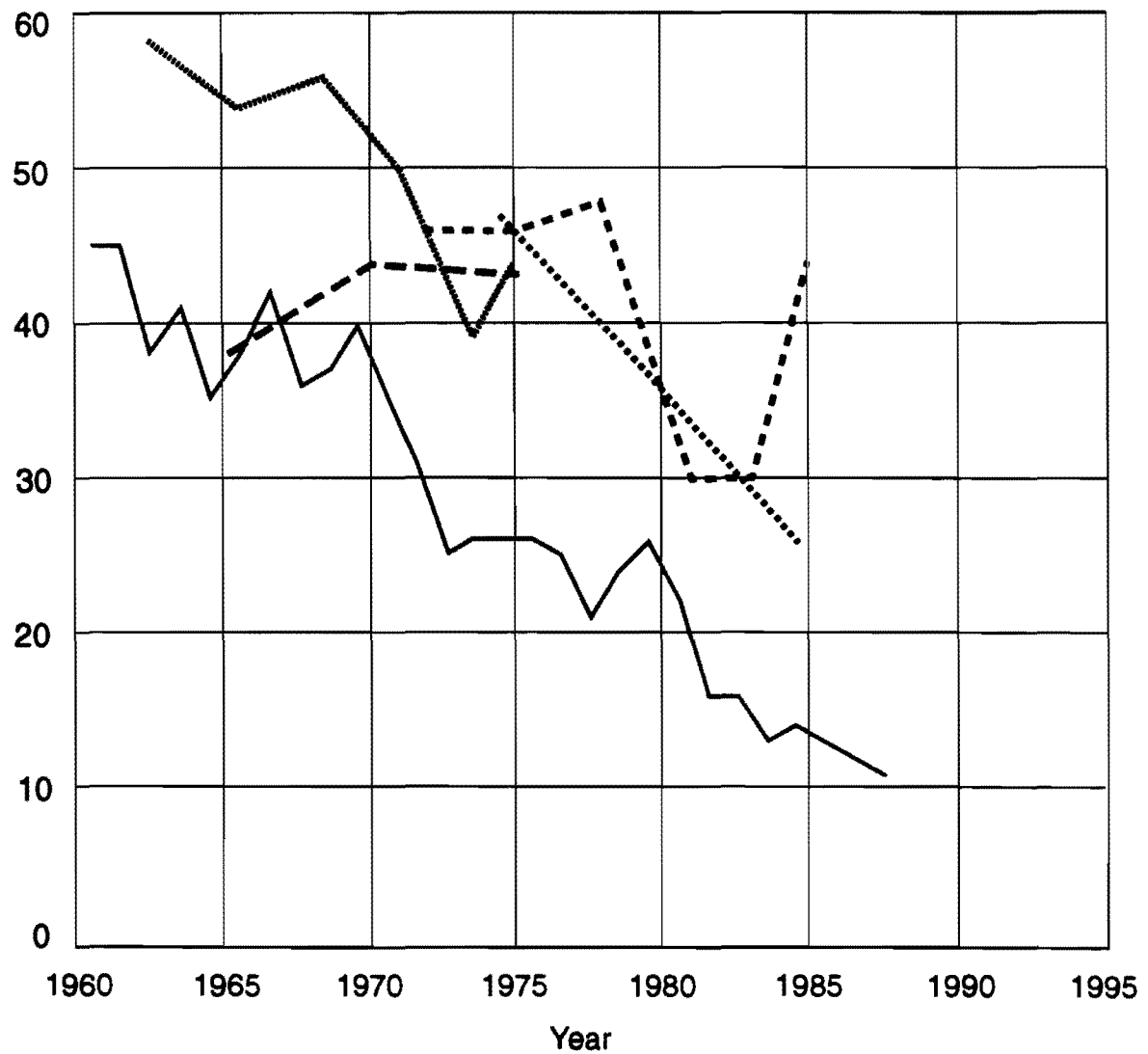
TRINIDAD AND TOBAGO DEMOGRAPHIC AND HEALTH SURVEY, MAY-SEPTEMBER 1987
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1985
15-19	0.140	0.071	1986.5	78	98
20-24	0.890	0.045	1985.2	44	51
25-29	1.860	0.032	1983.2	30	34
30-34	2.690	0.033	1980.8	30	34
35-39	3.240	0.059	1978.2	48	57
40-44	3.870	0.059	1975.2	46	54
45-49	4.950	0.065	1972.0	46	54

Source: Kenneth Heath, Dona Da Costa-Martinez and Amy R. Sheon, *Trinidad and Tobago Demographic and Health Survey, 1987* (Port-of-Spain, Family Planning Association of Trinidad and Tobago; and Columbia, Maryland, Institute for Resource Development/Westinghouse, 1988).

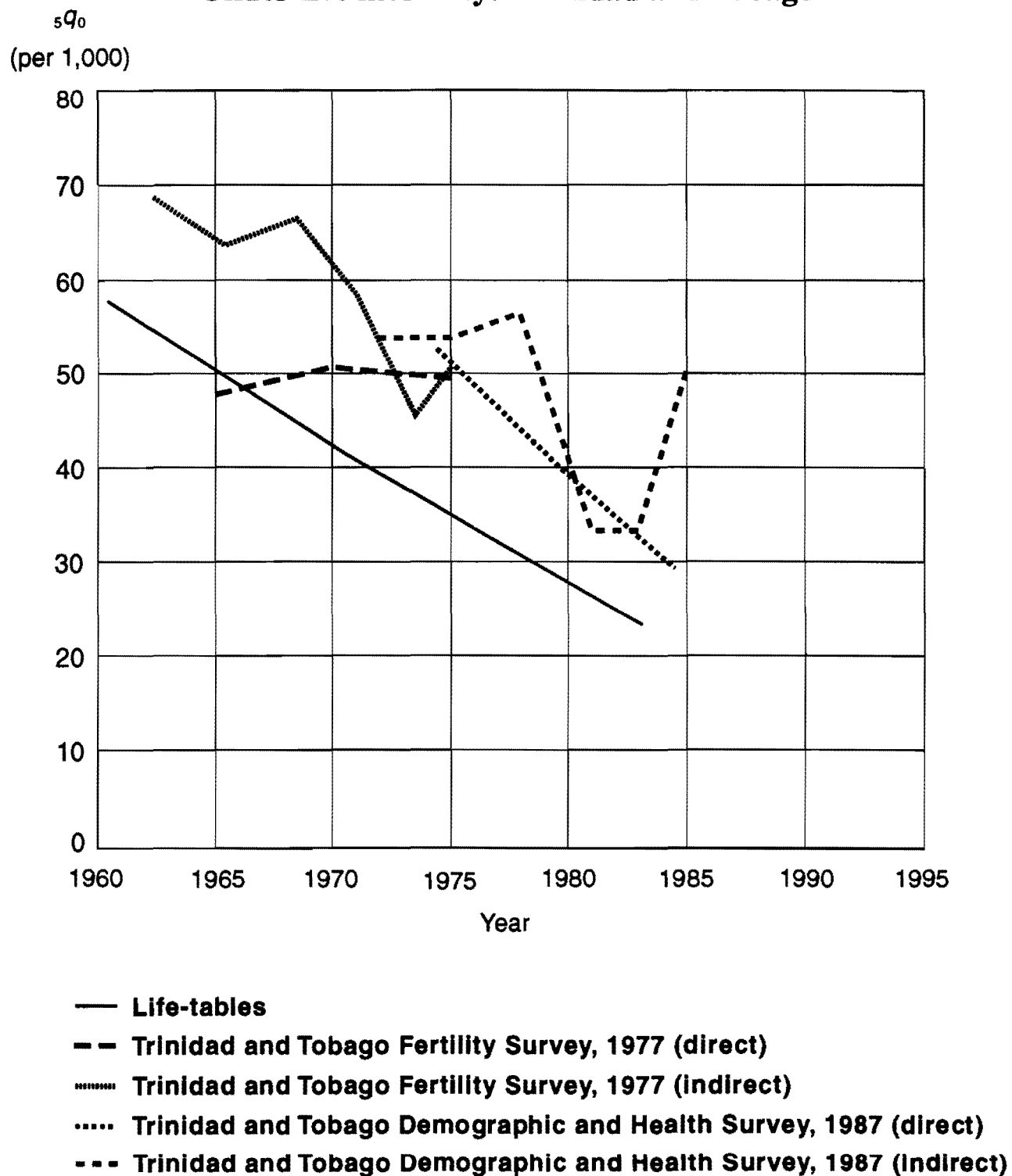
Infant mortality: Trinidad and Tobago

‰
(per 1,000)



- Vital registration
- - Trinidad and Tobago Fertility Survey, 1977 (direct)
- Trinidad and Tobago Fertility Survey, 1977 (indirect)
- Trinidad and Tobago Demographic and Health Survey, 1987 (direct)
- - - Trinidad and Tobago Demographic and Health Survey, 1987 (indirect)

Under-five mortality: Trinidad and Tobago



TUNISIA

Vital registration

Registration of deaths is reported to be incomplete.

Censuses

Brass questions were included in the 1966, 1975 and 1984 censuses. Estimates from the 1966 census are not included here because they refer mainly to a period prior to 1960.

Sample surveys

Maternity histories were included in the Enquête Tunisienne sur la fécondité (WFS) of 1978 and in the Enquête démographique et de santé en Tunisie (DHS) of 1988. Brass questions were included in the Enquête Tunisienne sur la prévalence de la contraception (CPS) of 1983. A multi-round follow-up survey, the Enquête nationale démographique, was conducted in 1968-1969.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	74	1968	68	1976	47
1961	..	1969	78	1977	45
1962	..	1970	71	1978	32
1963	..	1971	75	1979	43
1964	..	1972	58	1980	39
1965	..	1973	62	1981	39
1966	70	1974	52	1982	36
1967	77	1975	55		

Source: Data provided to the United Nations Statistical Office.

ENQUÊTE NATIONALE DÉMOGRAPHIQUE, 1968-1969 (Direct estimates)

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1968</i>	<i>1969</i>
1968-1969	135	204

Source: *Model Life Tables for Developing Countries*, Population Studies, No. 77 (United Nations publication, Sales No. E.81.XIII.7), p. 357.

CENSUS, 8 MAY 1975
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.038	0.157	1974.5	189	282
20-24	0.692	0.141	1973.7	130	193
25-29	2.520	0.164	1972.4	130	192
30-34	4.236	0.185	1970.6	133	197
35-39	5.610	0.209	1968.6	139	208
40-44	6.690	0.244	1966.2	152	227
45-49	7.045	0.279	1963.1	161	240

Source: Unpublished census tabulations provided by the Institut national de la statistique, Tunisia.

ENQUÊTE TUNISIENNE SUR LA FÉCONDITÉ, MAY-AUGUST 1978
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1963-1968	79	141
1968-1973	76	130
1973-1978	80	108

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 43 (Voorburg, Netherlands, International Statistical Institute, 1984), p. 67.

ENQUÊTE TUNISIENNE SUR LA FÉCONDITÉ, MAY-AUGUST 1978
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.034	0.063	1977.7	77	108
20-24	0.664	0.072	1976.9	70	97
25-29	2.307	0.104	1975.5	85	121
30-34	4.258	0.121	1973.7	90	128
35-39	5.700	0.138	1971.6	95	136
40-44	6.488	0.180	1969.1	113	165
45-49	6.956	0.200	1966.0	115	168

Source: *Enquête tunisienne sur la fécondité, 1978*, vol. I, *Rapport principal* (Tunis, Office national du planning familial et de la population; and *Enquête mondiale sur la fécondité, 1982*), pp. 54 and 88, tables 4.2 and 5.27.

ENQUÊTE TUNISIENNE SUR LA PRÉVALENCE DE LA CONTRACEPTION, 1983
(Indirect estimates, West model)

Age of women	Average parity ^a	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.037	0.055	1982.8	69	95
20-24	0.729	0.102	1981.9	95	136
25-29	2.233	0.084	1980.3	70	96
30-34	3.892	0.109	1978.3	81	114
35-39	5.448	0.150	1975.9	101	145
40-44	6.335	0.191	1973.3	118	173
45-49	7.025	0.230	1970.2	129	191

Source: Mohamed Ayad and Younès Zoughlami, *Fécondité et planification familiale en Tunisie, 1983: rapport sur les résultats de l'Enquête tunisienne sur la prévalence de la contraception* (Tunis, Ministère de la famille et de la promotion de la femme, Office national de la famille et de la population; and Columbia, Maryland, Westinghouse Public Applied Systems, 1985), p. 67, table 4.9.

^a Average parity for ever-married women adjusted by applying the proportion ever married from the 1984 census.

CENSUS, 30 MARCH 1984
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.045	0.094	1983.3	109	158
20-24	0.577	0.076	1982.4	73	101
25-29	1.989	0.088	1981.1	74	102
30-34	3.588	0.105	1979.4	80	112
35-39	5.099	0.136	1977.4	94	135
40-44	6.067	0.170	1975.0	108	157
45-49	6.533	0.208	1972.0	120	177

Source: Data provided to the United Nations Statistical Office.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ EN TUNISIE, JUNE-OCTOBER 1988
(Direct estimates)

Period	Mortality rate (per 1,000)	
	190	190
1973-1977	70	104
1978-1982	64	86
1983-1987 ^a	50	65

Source: Touhami Aloui, Mohamed Ayad and Habib Fourati, *Enquête démographique et de santé en Tunisie, 1988* (Tunis, Office national de la famille et de la population, Direction de la population; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 98, table 8.2.

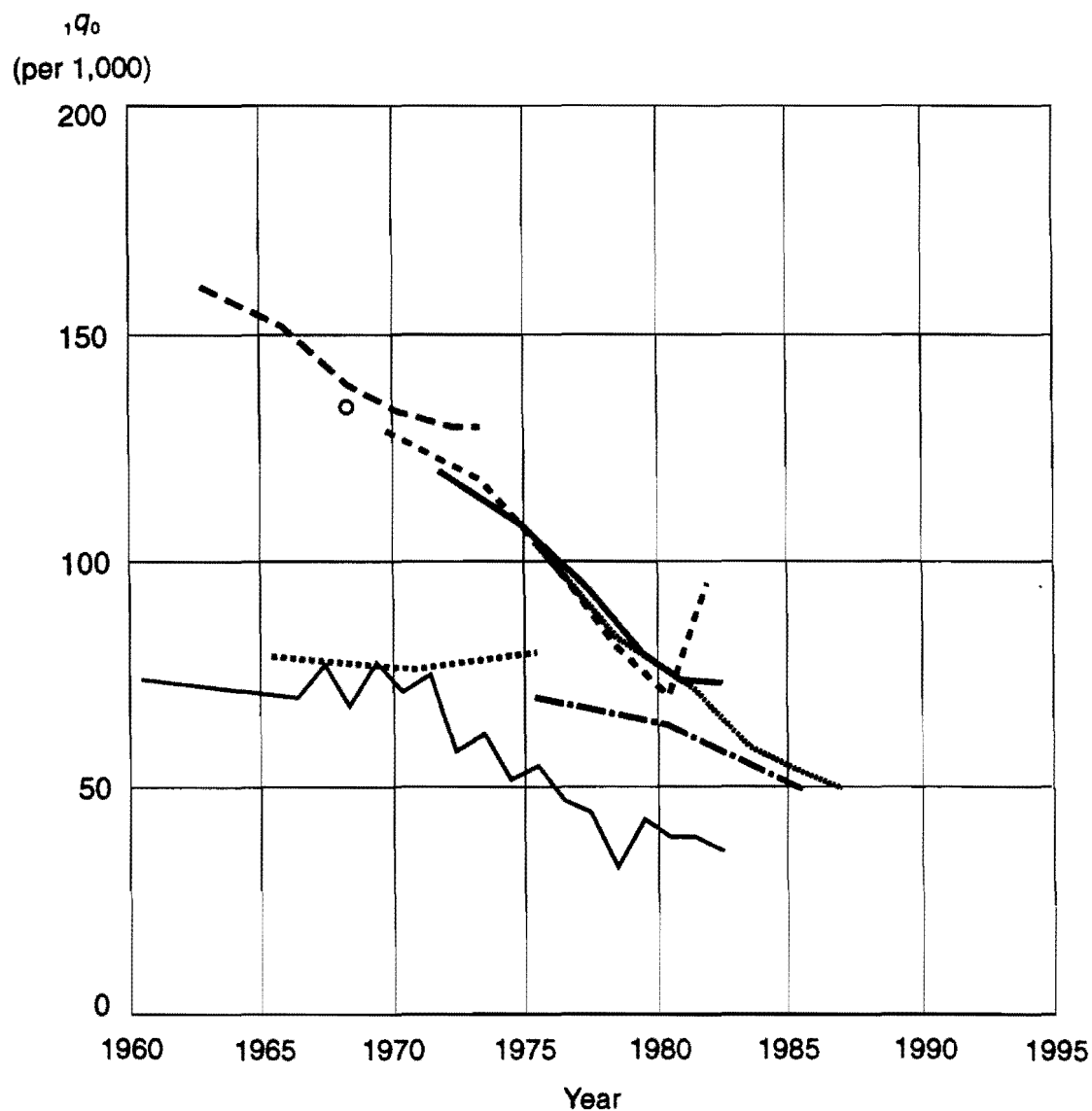
^a Including events occurring in 1988 up to the month preceding the date of interview.

ENQUÊTE DÉMOGRAPHIQUE ET DE SANTÉ EN TUNISIE, 1988
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.022	0.039	1987.9	49	64
20-24	0.517	0.049	1987.0	50	65
25-29	1.703	0.062	1985.5	54	71
30-34	3.385	0.076	1983.6	59	80
35-39	4.684	0.102	1981.3	72	99
40-44	5.535	0.129	1978.7	83	117
45-49	6.119	0.181	1975.6	104	150

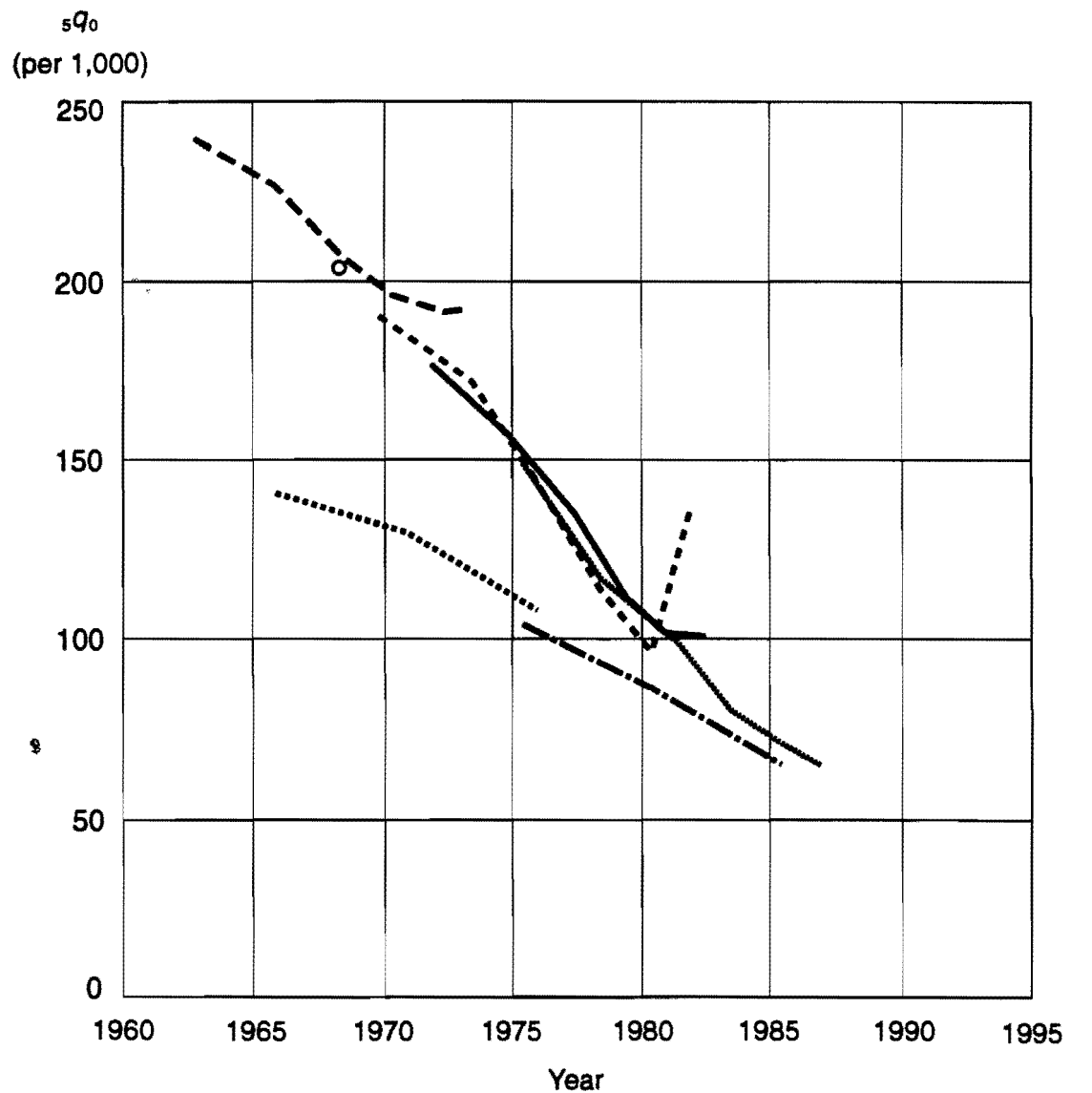
Source: Touhami Aloui, Mohamed Ayad and Habib Fourati, *Enquête démographique et de santé en Tunisie, 1988* (Tunis, Office national de la famille et de la population, Direction de la Population; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 96, table 8.1.

Infant mortality: Tunisia



- Vital registration
- Enquête nationale démographique, 1969 (direct)
- Census, 1975 (indirect)
- Enquête tunisienne sur la fécondité, 1978 (direct)
- - - Enquête sur la prévalence de la contraception, 1983 (indirect)
- Census, 1984 (indirect)
- ..— Enquête démographique et de santé en Tunisie, 1988 (direct)
- Enquête démographique et de santé en Tunisie, 1988 (indirect)

Under-five mortality: Tunisia



- Enquête nationale démographique, 1969 (direct)
- Census, 1975 (Indirect)
- Enquête tunisienne sur la fécondité, 1978 (direct)
- Enquête sur la prévalence de la contraception, 1983 (indirect)
- Census, 1984 (Indirect)
- Enquête démographique et de santé en Tunisie, 1988 (direct)
- Enquête démographique et de santé en Tunisie, 1988 (Indirect)

TURKEY

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1970, 1975, 1980 and 1985 censuses.

Sample surveys

Maternity histories were collected in 1968 by the Hacettepe Survey, but the only estimates available from this survey are infant mortality rates that were indirectly obtained (Shorter and Macura, 1982); in 1978 by the Turkish Fertility Survey (WFS), and in 1983 and 1988 by the Turkish Population and Health Survey. Brass questions were included in the Turkish Demographic Survey of 1966-1967, which was a multi-round dual-record survey.

TURKISH DEMOGRAPHIC SURVEY, 1966-1967
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1966-1967	153	203

Source: Frederic Shorter and Miroslav Macura, *Trends in Fertility and Mortality in Turkey, 1935-1975*, Committee on Population and Demography, Report No. 8 (Washington, D.C., National Academy Press, 1982), p. 60, table 16.

TURKISH DEMOGRAPHIC SURVEY, 1966-1967
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.183	0.120	1966.2	139	185
20-24	1.412	0.159	1964.9	143	191
25-29	2.944	0.163	1962.8	131	174
30-34	4.241	0.194	1960.2	145	193
35-39	5.002	0.212	1957.4	150	201
40-44	5.193	0.214	1954.3	144	192
45-49	5.357	0.238	1951.0	149	200

Source: *Vital Statistics from the Turkish Demographic Survey, 1966-67* (Ankara, Ministry of Health and Social Welfare, 1970), pp. 64 and 77, tables 26 and 30.

HACETTEPE SURVEY, 1968
(Indirect estimates)

Period	Mortality rate (per 1,000)	Period	Mortality rate (per 1,000)
	<i>i</i> ₉₀		<i>i</i> ₉₀
1953	235	1961	189
1955	224	1963	178
1957	212	1965	169
1959	199	1967	156

Source: Frederic Shorter and Miroslav Macura, *Trends in Fertility and Mortality in Turkey, 1935-1975*, Committee on Population and Demography, Report No. 8 (Washington, D.C., National Academy Press, 1982), p. 64, table 18.

CENSUS, 25 OCTOBER 1970
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				<i>i</i> ₉₀	<i>i</i> ₉₀
15-19	0.134	0.167	1970.0	198	271
20-24	1.190	0.171	1968.7	154	207
25-29	2.510	0.181	1966.6	144	193
30-34	3.898	0.215	1964.0	160	215
35-39	4.757	0.229	1961.1	161	217
40-44	5.149	0.245	1957.9	163	219
45-49	5.036	0.263	1954.6	165	222

Source: *Census of Population: Social and Economic Characteristics of Population* (Ankara, Prime Ministry, State Institute of Statistics, n.d.), pp. 112, 113 and 117, tables 22 and 24.

CENSUS, 26 OCTOBER 1975
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				<i>i</i> ₉₀	<i>i</i> ₉₀
15-19	0.141	0.201	1974.9	233	319
20-24	1.163	0.184	1973.7	166	224
25-29	2.545	0.186	1971.7	149	200
30-34	3.769	0.204	1969.2	153	205
35-39	4.764	0.226	1966.4	160	215
40-44	5.248	0.246	1963.4	165	222
45-49	5.347	0.258	1960.1	162	219

Source: Frederic Shorter, "Infant and child mortality estimates from the Turkish census", Istanbul, The Population Council, West Asia and North Africa, appendix 1, p. 31, mimeographed.

TURKISH FERTILITY SURVEY, SEPTEMBER-OCTOBER 1978
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1963-1968	1968-1973
1963-1968	156	217
1968-1973	141	188
1973-1978	133	166

Source: Shea Oscar Rutstein, *Infant and Child Mortality Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute; 1983), p. 56.

TURKISH FERTILITY SURVEY, SEPTEMBER-OCTOBER 1978
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1963-1968	1968-1973
15-19	0.15	0.070	1978.0	83	105
20-24	1.34	0.164	1976.7	149	199
25-29	2.84	0.166	1974.6	133	177
30-34	4.33	0.205	1972.0	153	205
35-39	5.24	0.229	1969.1	161	217
40-44	6.25	0.259	1966.0	172	233
45-49	5.81	0.266	1962.7	166	224

Source: Hacettepe Institute of Population Studies, *Turkish Fertility Survey, 1978: First Report*, vol. I, *Methodology and Findings* (Ankara, 1980), pp. 76 and 78, tables VII-10 and VIII-1.

CENSUS, 12 OCTOBER 1980
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1963-1968	1968-1973
15-19	0.153	0.132	1979.9	158	213
20-24	1.189	0.140	1978.6	127	168
25-29	2.594	0.155	1976.6	125	166
30-34	3.820	0.175	1974.2	132	176
35-39	4.845	0.204	1971.5	146	195
40-44	5.469	0.232	1968.5	156	209
45-49	5.714	0.252	1965.2	159	214

Source: Data provided to the United Nations Statistical Office.

TURKISH POPULATION AND HEALTH SURVEY, AUGUST-NOVEMBER 1983
(Direct estimates)

Period	Mortality rate (per 1,000)	Period	Mortality rate (per 1,000)
	1980		1980
1977-1978	107	1980-1981	91
1978-1979	90	1981-1982	112
1979-1980	84	1982-1983	73

Source: Institute of Population Studies, 1983 Turkish Population and Health Survey (Ankara, Hacettepe University, 1987), p. 74, table V-1.

TURKISH POPULATION AND HEALTH SURVEY, AUGUST-NOVEMBER 1983
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1980
15-19	0.11	0.091	1982.9	107	139
20-24	1.10	0.136	1981.8	127	168
25-29	2.72	0.132	1980.0	110	144
30-34	3.99	0.155	1977.7	120	158
35-39	4.80	0.181	1975.2	132	175
40-44	5.26	0.211	1972.3	144	193
45-49	5.31	0.237	1969.0	152	203

Source: Institute of Population Studies, 1983 Turkish Population and Health Survey (Ankara, Hacettepe University, 1987), p. 39, table IV-5.

CENSUS, 20 OCTOBER 1985
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1980
15-19	0.106	0.102	1985.0	122	160
20-24	1.041	0.117	1983.8	109	142
25-29	2.343	0.132	1981.8	108	141
30-34	3.501	0.152	1979.3	116	153
35-39	4.404	0.176	1976.5	127	168
40-44	5.144	0.207	1973.4	140	186
45-49	5.509	0.233	1970.1	147	197

Source: Data provided to the United Nations Statistical Office.

TURKISH POPULATION AND HEALTH SURVEY, AUGUST-SEPTEMBER 1988
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1980	1990
1973-1977	124	152
1978-1982	100	124
1985-1987	82	98

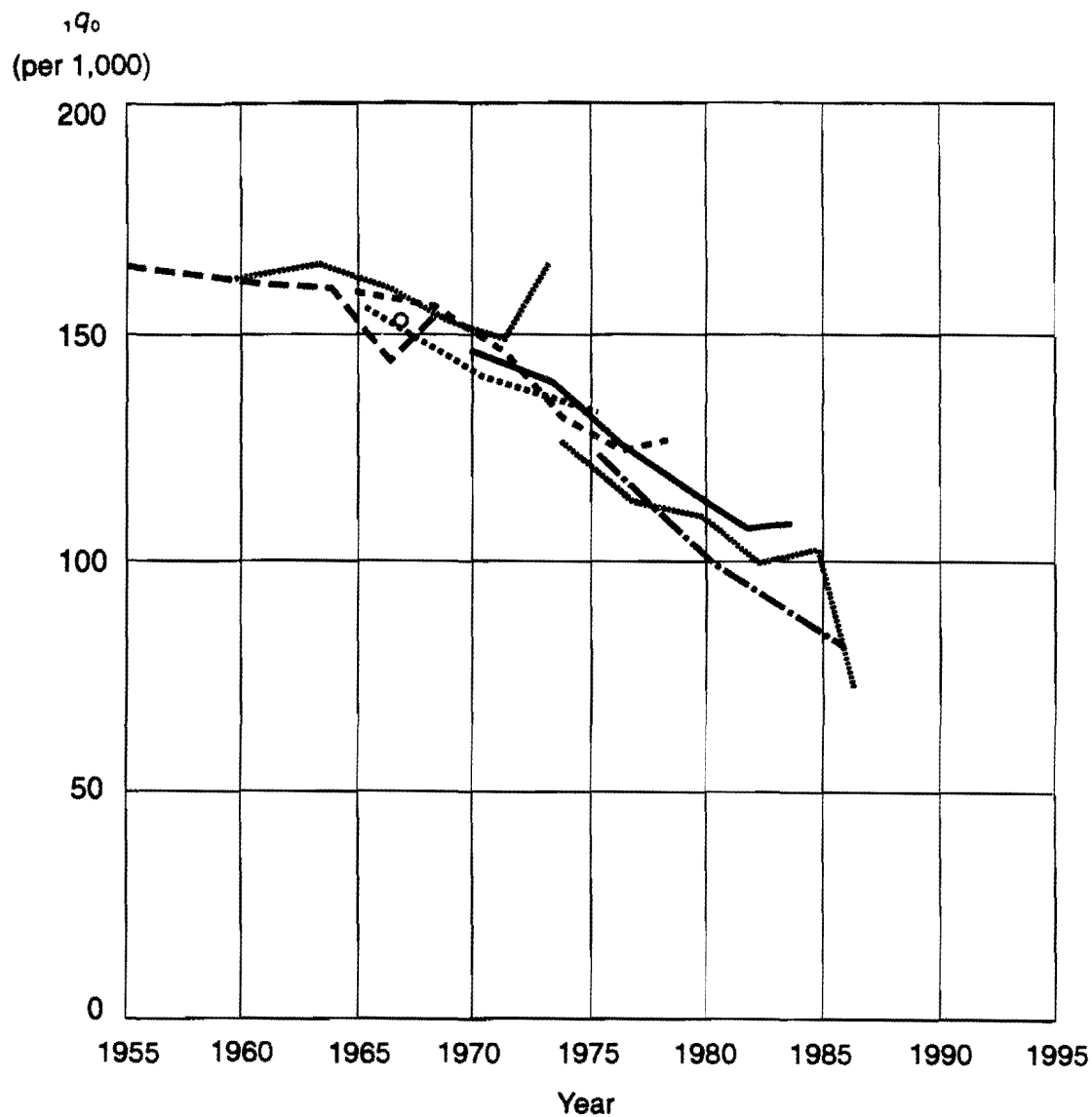
Source: Institute of Population Studies, 1988 Turkish Population and Health Survey (Ankara, Hacettepe University, 1989), p. 173, table V.5.1.

TURKISH POPULATION AND HEALTH SURVEY, AUGUST-SEPTEMBER 1988
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.094	0.128	1987.7	148	198
20-24	0.881	0.075	1986.6	73	90
25-29	2.188	0.122	1984.8	103	133
30-34	3.164	0.127	1982.6	100	129
35-39	3.933	0.150	1980.1	111	145
40-44	4.477	0.163	1977.2	114	149
45-49	4.860	0.196	1974.0	127	168

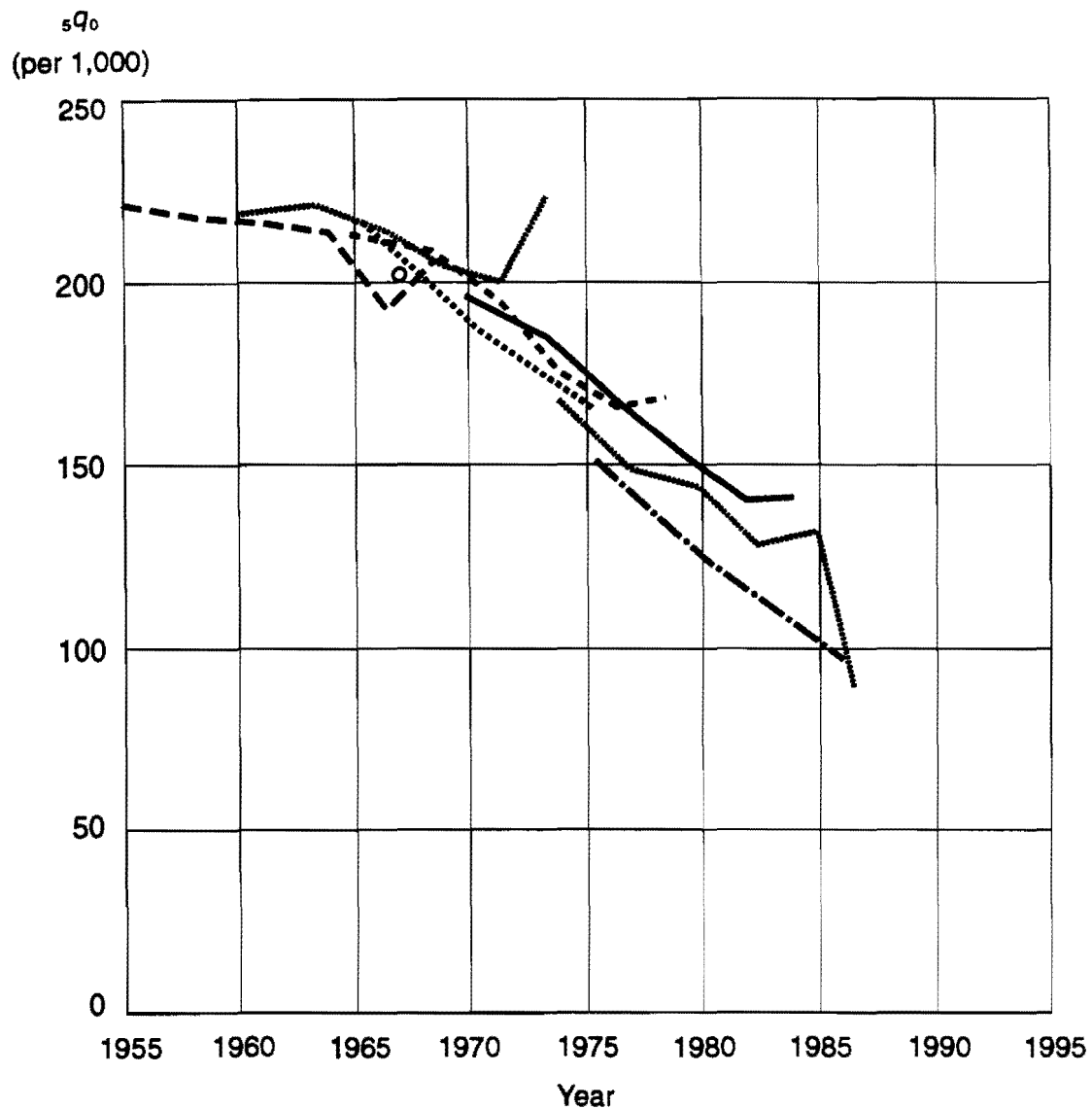
Source: Institute of Population Studies, 1988 Turkish Population and Health Survey (Ankara, Hacettepe University, 1989), p. 41, table II.4.4.

Infant mortality: Turkey



- Turkish Demographic Survey, 1967 (direct)
- Census, 1970 (indirect)
- Census, 1975 (indirect)
- Turkish Fertility Survey, 1978 (direct)
- - - Census, 1980 (indirect)
- Census, 1985 (indirect)
- Turkish Population and Health Survey, 1988 (direct)
- Turkish Population and Health Survey, 1988 (indirect)

Under-five mortality: Turkey



- Turkish Demographic Survey, 1967 (direct)
- — Census, 1970 (Indirect)
- — — Census, 1975 (Indirect)
- Turkish Fertility Survey, 1978 (direct)
- - - Census, 1980 (Indirect)
- — — Census, 1985 (Indirect)
- — — Turkish Population and Health Survey, 1988 (direct)
- — — Turkish Population and Health Survey, 1988 (Indirect)

UGANDA

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the censuses of 1948, 1959, 1969, 1980 and 1991. In 1948 and 1959, however, the information was only compiled for broad age groups of women (16-45 and 46 or over), and the mortality estimates derived from them are outside the period covered by this study. In 1969, the Brass questions were included in a sample of the census. The results of the 1980 census were never fully tabulated and analysed because the majority of the original census forms were lost. Results from the 1991 census are not yet available.

Sample surveys

Maternity histories were included in the Uganda Demographic and Health Survey (DHS) of 1988-1989, although this survey was unable to cover 9 of the 33 districts in the country for security reasons (Kaijuka and others, 1989). All the districts not included are in the northern part of Uganda.

CENSUS, 18 AUGUST 1969
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.477	0.135	1968.4	123	208
20-24	2.013	0.162	1966.9	116	194
25-29	3.438	0.192	1964.8	118	199
30-34	4.469	0.226	1962.5	126	213
35-39	5.036	0.255	1959.9	132	224
40-44	4.952	0.305	1957.1	148	249
45-49	5.047	0.348	1954.3	156	263

Source: Uganda, *Report on the 1969 Population Census*, vol. IV, *The Analytical Report* (Entebbe, 1976), table 2.

UGANDA DEMOGRAPHIC AND HEALTH SURVEY, SEPTEMBER 1988-FEBRUARY 1989
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1980
1973-1977	92	180
1978-1982	114	200
1983-1988*	101	180

Source: Emmanuel M. Kaijuka and others, *Uganda Demographic and Health Survey, 1988/1989* (Entebbe, Ministry of Health in collaboration with the Ministry of Planning and Economic Development; and Makerere University, Institute of Statistics and Applied Economics; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 54, table 6.1.

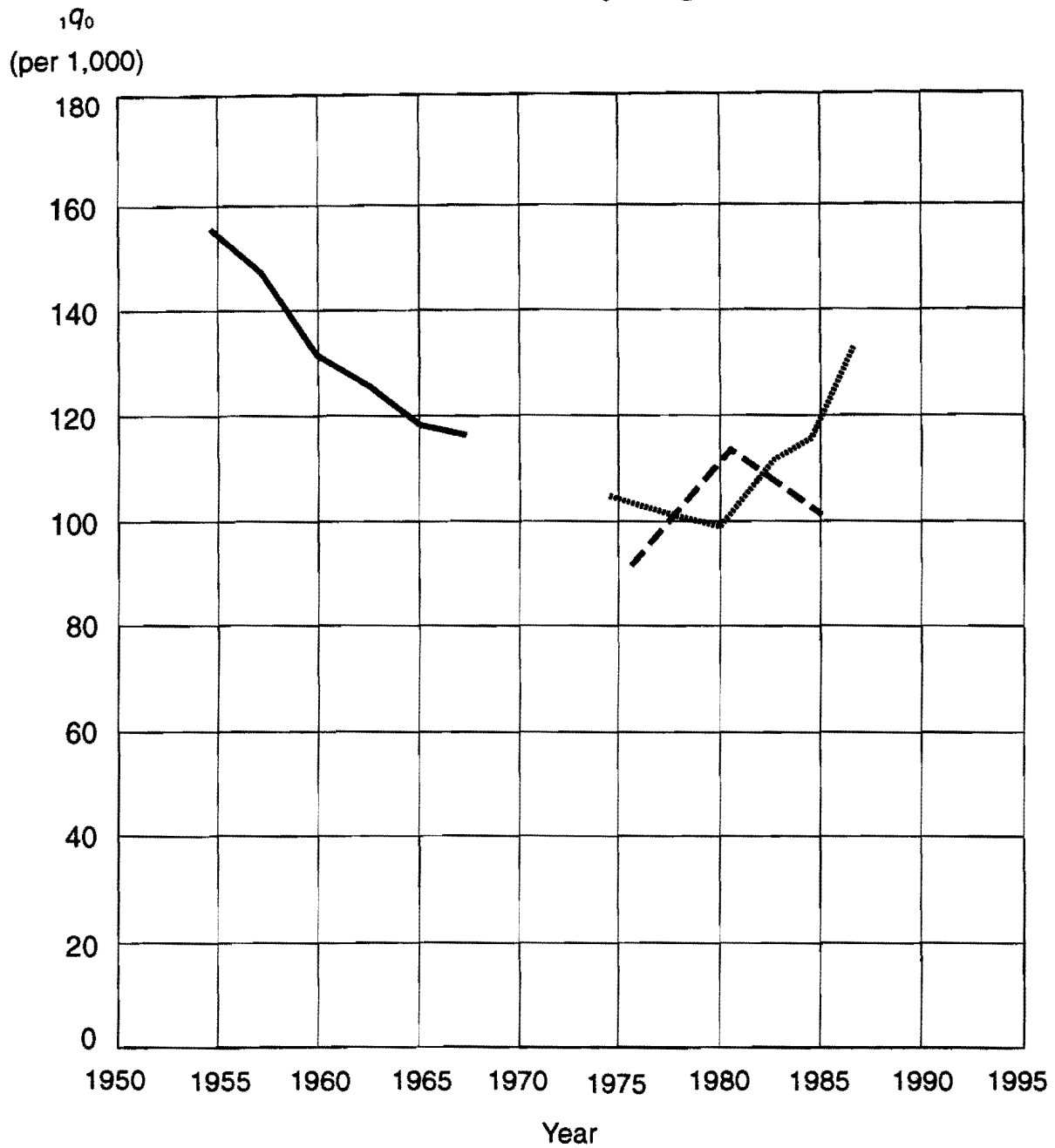
* Including events occurring in 1988 up to the month preceding the date of interview.

UGANDA DEMOGRAPHIC AND HEALTH SURVEY, SEPTEMBER 1988-FEBRUARY 1989
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				190	190
15-19	0.39	0.14	1987.6	130	220
20-24	1.86	0.18	1986.3	134	226
25-29	3.65	0.18	1984.5	116	194
30-34	5.04	0.19	1982.4	112	186
35-39	6.79	0.18	1980.0	99	163
40-44	7.24	0.20	1977.5	101	166
45-49	7.77	0.23	1974.7	105	174

Source: Emmanuel M. Kaijuka and others, *Uganda Demographic and Health Survey, 1988-1989* (Entebbe, Ministry of Health in collaboration with the Ministry of Planning and Economic Development and Department of Geography; and Makerere University; Institute of Statistics and Applied Economics; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 58, table 6.4.

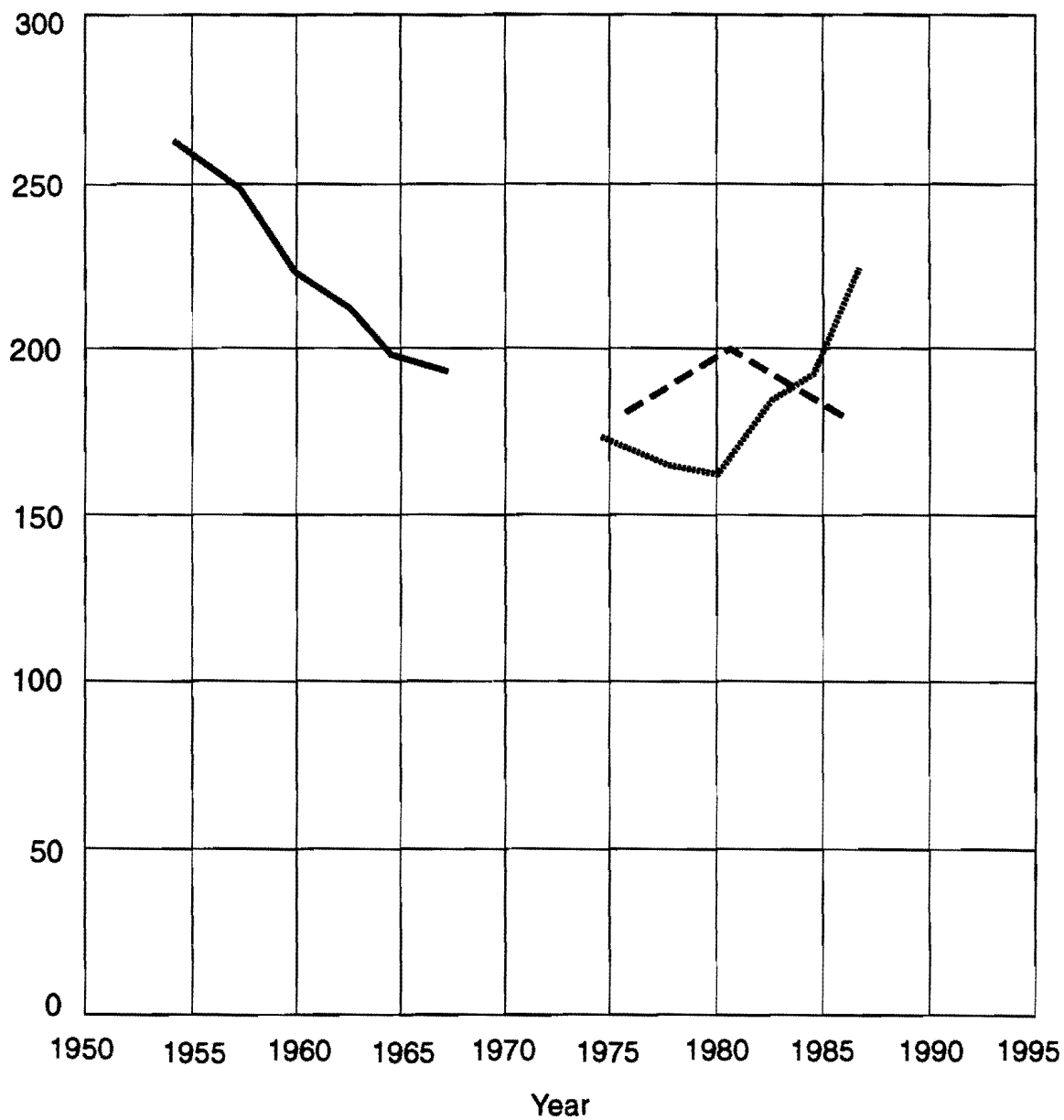
Infant mortality: Uganda



- Census, 1969 (indirect)
- - Uganda Demographic and Health Survey, 1988/89 (direct)
- Uganda Demographic and Health Survey, 1988/89 (indirect)

Under-five mortality: Uganda

${}_5q_0$
(per 1,000)



- Census, 1969 (indirect)
- - Uganda Demographic and Health Survey, 1988/89 (direct)
- Uganda Demographic and Health Survey, 1988/89 (indirect)

UNITED ARAB EMIRATES

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1975 and 1980 censuses. The estimates for the population of nationals of the United Arab Emirates, not included here, show a high degree of consistency and a rapid mortality decline. A high proportion of the population, 64 per cent in 1975, are non-nationals; and the discrepancy between the estimates for the total population from the two censuses may be due to a different composition of the population by nationality.

Sample surveys

No relevant data are available.

CENSUS, 31 DECEMBER 1975
(Indirect estimates, West model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				1960	1970
15-19	0.402	0.074	1974.4	60	82
20-24	1.450	0.069	1972.9	57	76
25-29	2.593	0.082	1971.0	63	86
30-34	3.704	0.108	1968.8	77	108
35-39	4.583	0.142	1966.5	93	133
40-44	4.466	0.201	1964.0	120	176
45-49	4.465	0.238	1961.2	129	192

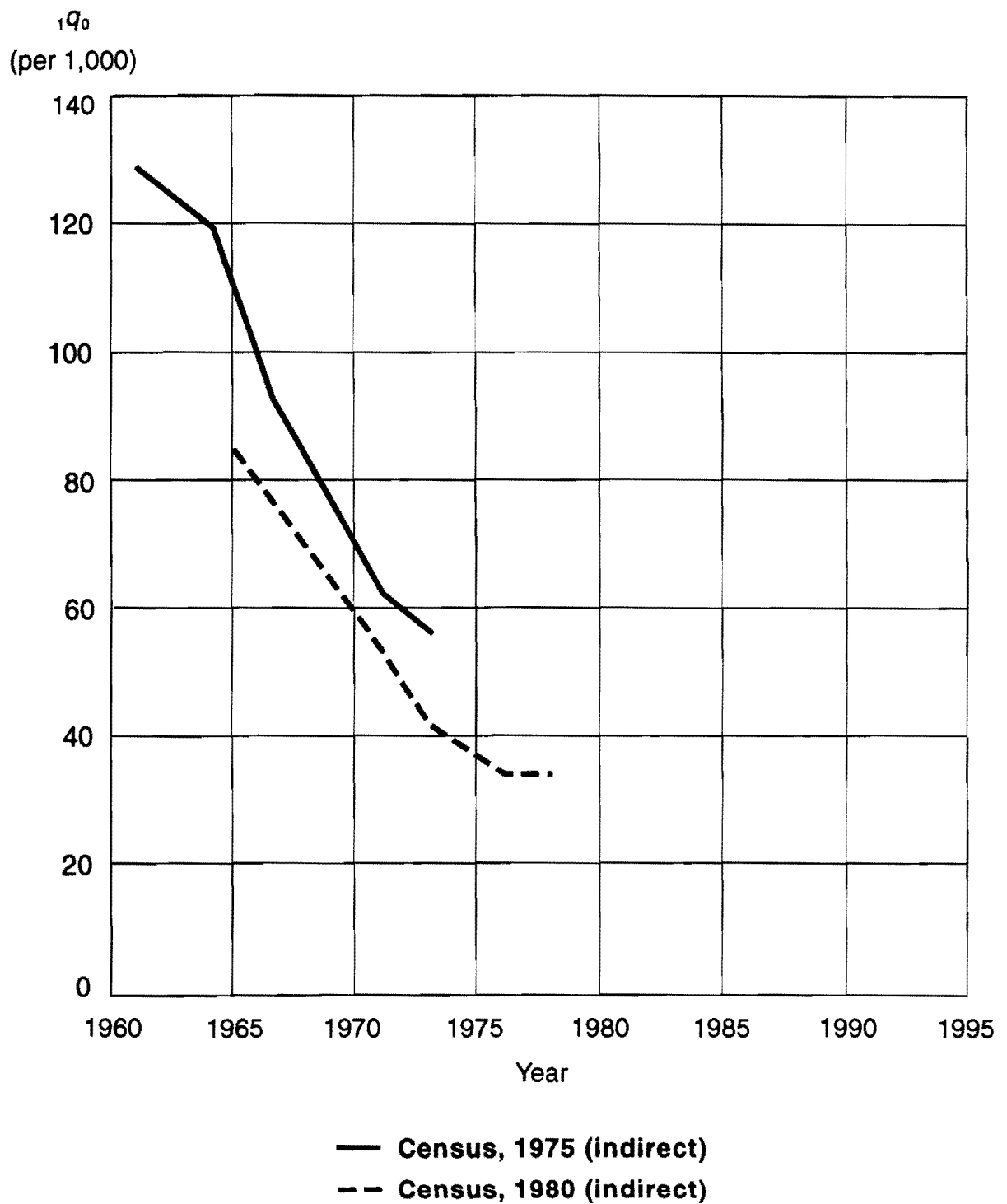
Source: Data provided to the United Nations Statistical Office.

CENSUS, 15 DECEMBER 1980
(Indirect estimates, West model)

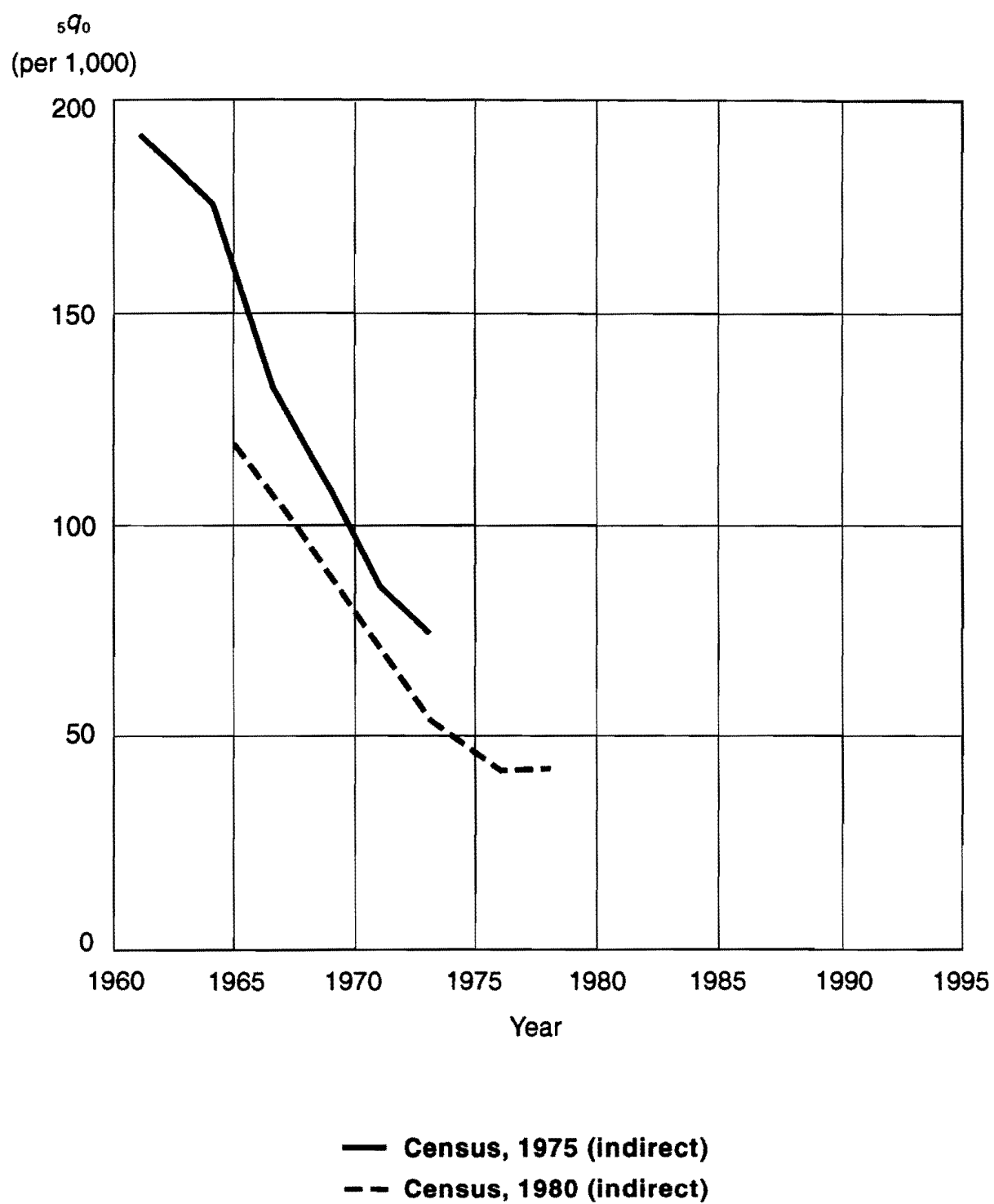
<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				1960	1970
15-19	0.352	0.044	1979.7	42	52
20-24	1.427	0.041	1978.1	35	44
25-29	2.350	0.043	1975.8	35	43
30-34	3.305	0.057	1973.2	43	55
35-39	4.428	0.083	1970.5	57	76
40-44	4.522	0.119	1967.6	72	100
45-49	4.599	0.156	1964.8	85	120

Source: United Arab Emirates, *Population Census, 1980*, vol. II (Abu Dhabi, Ministry of Planning, 1982).

Infant mortality: United Arab Emirates



Under-five mortality: United Arab Emirates



UNITED REPUBLIC OF TANZANIA

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in post-enumeration sample surveys following the 1948 and 1957-1958 censuses. The results were tabulated for broad age groups of women (16-45 and 46 and over) and are outside the reference period of this study. Brass questions were also included in samples of the 1967 census and the 1978 census. The 1978 census results were published in a disaggregated form; the national-level data used here were developed by the Population Studies Center of the University of Pennsylvania. Brass questions were also included in the 1988 census, but the data are not yet available.

Sample surveys

Maternity histories were collected in 1973 by the National Demographic Survey (NDS), conducted only on the mainland, excluding Zanzibar, but direct child mortality estimates have not been calculated from these maternity histories.

CENSUS, 26 AUGUST 1967
(Indirect estimates, North model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				1960	1970
15-19	0.527	0.189	1966.3	163	275
20-24	1.978	0.199	1964.7	137	232
25-29	3.181	0.222	1962.6	133	225
30-34	4.161	0.253	1960.2	140	237
35-39	4.777	0.283	1957.5	146	247
40-44	5.015	0.316	1954.8	152	257
45-49	5.204	0.354	1952.0	158	267

Source: United Republic of Tanzania, *1967 Population Census*, vol. 3, *Demographic Statistics* (Dar es Salaam, Ministry of Economic Affairs and Development Planning, Bureau of Statistics, 1971). p. 74.

NATIONAL DEMOGRAPHIC SURVEY OF TANZANIA, JULY-DECEMBER 1973
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1960
15-19	0.420	0.120	1972.5	107	177
20-24	1.763	0.115	1971.1	85	137
25-29	3.157	0.130	1969.1	85	136
30-34	4.255	0.153	1966.9	91	147
35-39	4.824	0.171	1964.4	94	152
40-44	4.879	0.202	1961.8	101	166
45-49	..	..	..	..	..

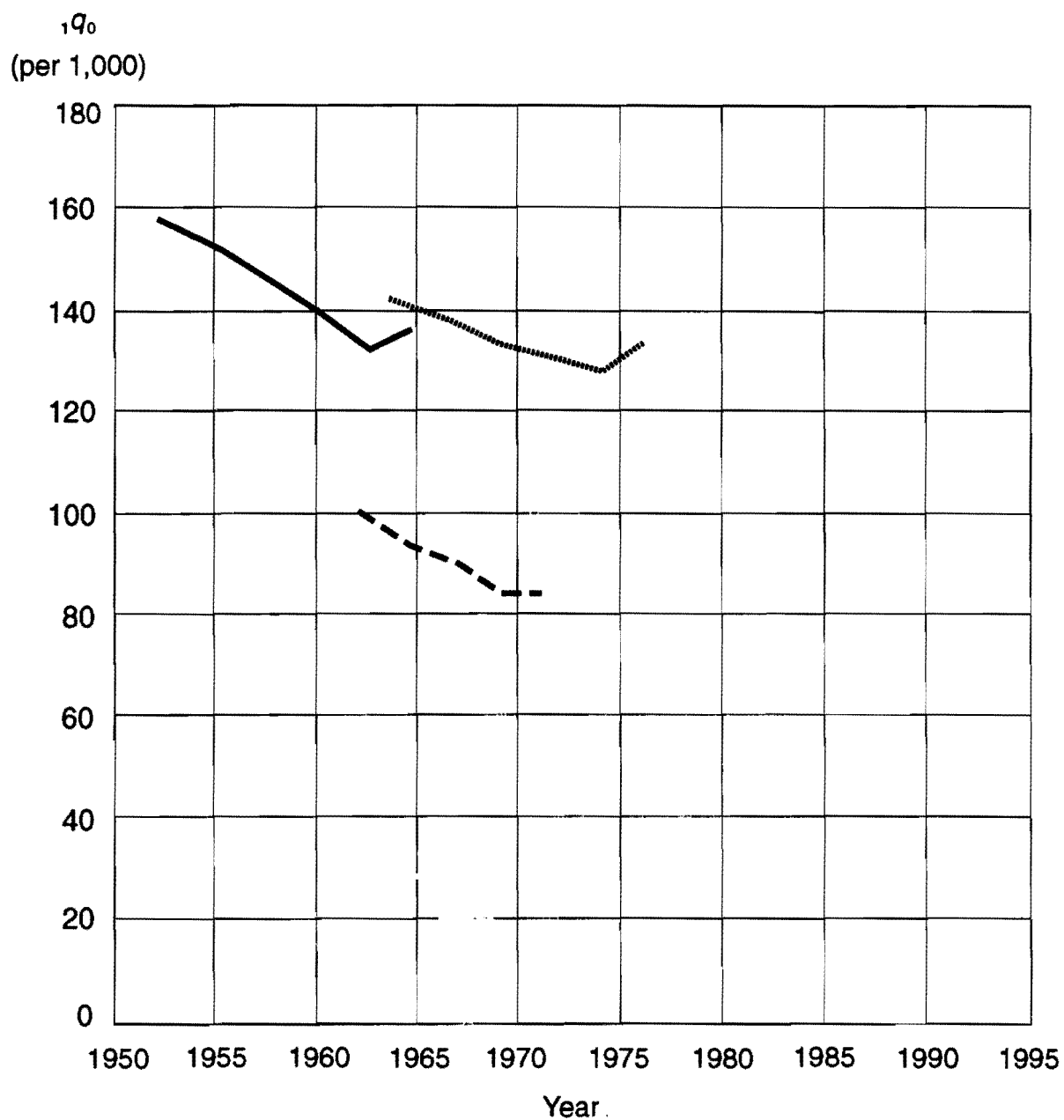
Sources: United Republic of Tanzania, *1973 National Demographic Survey of Tanzania*, vol. 1, *Regional and National Data* (Dar es Salaam, Ministry of Finance and Planning, Bureau of Statistics; and University of Dar es Salaam, Bureau of Resource, Assessment and Land Use Planning (n.d.)); and K. V. Ramachandran, "Fertility and mortality levels, patterns and trends in some anglophone African countries", paper presented at the Economic Commission for Africa Expert Group Meeting on Fertility and Mortality Levels, Patterns and Trends in Africa and their Policy Implications, Monrovia, Liberia, 26 November-1 December 1979 (E/CN.14/POP/INF/239).

CENSUS, 26-27 AUGUST 1978
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1960
15-19	0.437	0.178	1977.4	169	284
20-24	2.105	0.185	1976.0	135	229
25-29	3.662	0.206	1974.1	129	218
30-34	5.108	0.230	1971.8	131	221
35-39	5.862	0.254	1969.2	134	226
40-44	6.149	0.286	1966.5	139	235
45-49	6.044	0.318	1963.7	143	241

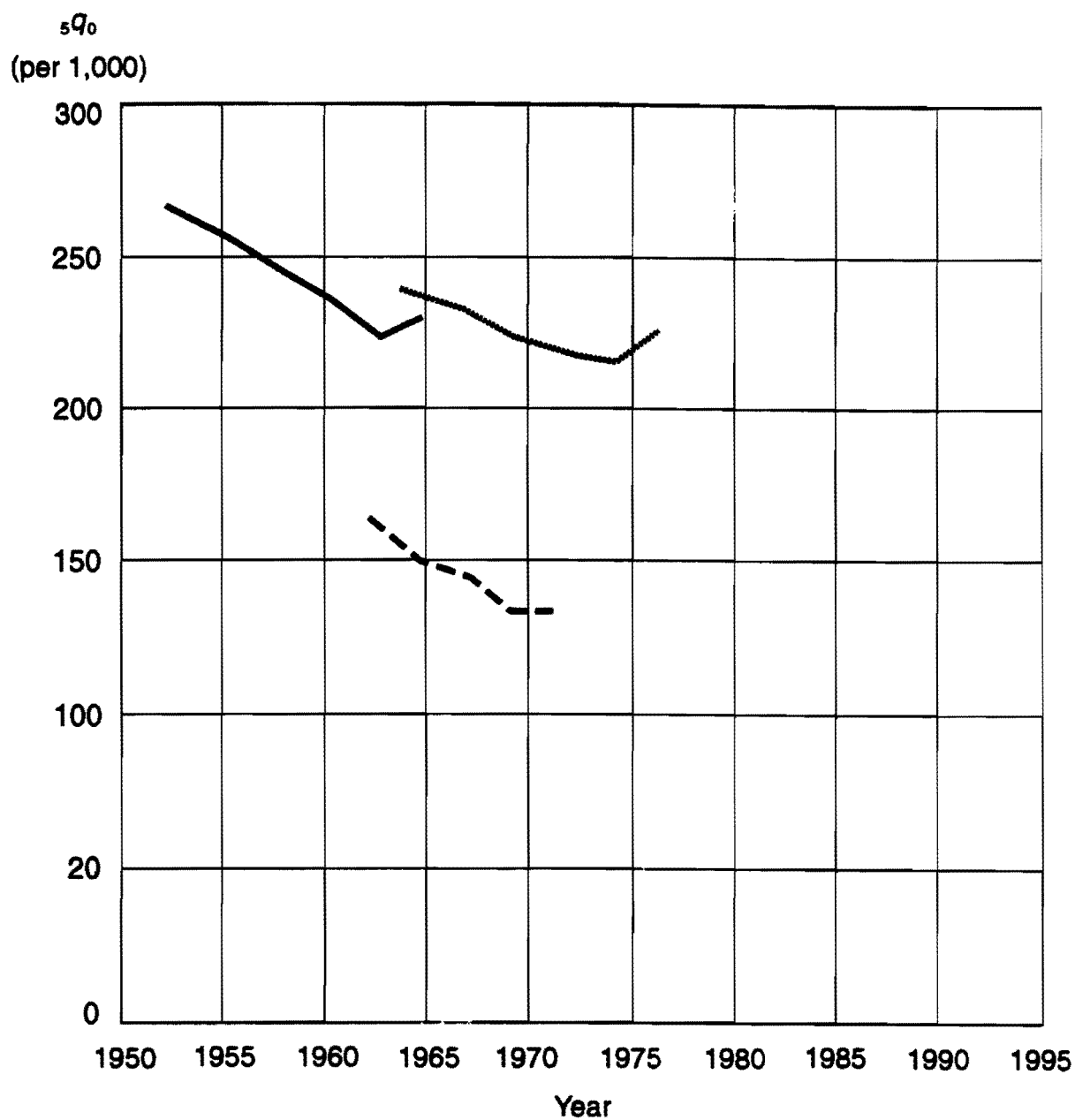
Source: Unpublished tabulations prepared by the Center for Population Studies of the University of Pennsylvania, 1985.

Infant mortality: United Republic of Tanzania



- Census, 1967 (indirect)
- - National Demographic Survey of Tanzania, 1973 (indirect)
- Census, 1985 (indirect)

Under-five mortality: United Republic of Tanzania



- Census, 1967 (indirect)
- - National Demographic Survey of Tanzania, 1973 (indirect)
- Census, 1985 (indirect)

URUGUAY

Vital registration

Birth and death registrations are reported to be complete, although infant mortality rates prior to 1977 were based on a sample of 10 per cent of births. Life-tables have been developed based on registered deaths and the census counts of 1963, 1975 and 1985.

Censuses

Brass questions were included in the 1975 and 1985 censuses.

Sample surveys

No relevant data have been collected.

VITAL REGISTRATION

<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>	<i>Year</i>	<i>Infant mortality (per 1,000)</i>
1960	47	1970	50	1980	38
1961	49	1971	48	1981	33
1962	49	1972	50	1982	30
1963	48	1973	50	1983	29
1964	51	1974	48	1984	30
1965	56	1975	49	1985	29
1966	50	1976	46	1986	28
1967	58	1977	48	1987	24
1968	62	1978	43		
1969	52	1979	40		

Sources: Uruguay: *anuario estadístico, 1961-1963* (Montevideo, Ministerio de Hacienda, Dirección General de Estadística y Censos, n.d.); Uruguay: *La mortalidad infantil según variables socioeconómicas y geográficas* (Montevideo, Dirección General de Estadística y Censos; Centro Latinoamericano de Demografía and Agencia Canadiense para el Desarrollo Internacional, 1987), p. 9, table 3; and Uruguay: *Anuario estadístico, 1989* (Montevideo, Dirección General de Estadística y Censos, n.d.), pp. 33 and 37, tables 1.23 and 1.27.

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

<i>Period</i>	<i>Mortality rate (per 1,000)</i>	
	<i>1960</i>	<i>1980</i>
1963-1964	46	51
1974-1976	47	52
1984-1986	29	33

Source: Uruguay: *tablas abreviadas de mortalidad por sexo—total del país, 1984-1986* (Montevideo, Dirección General de Estadística y Censos, 1988), pp. 13, 19 and 22.

CENSUS, 21 MAY 1975
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.116	0.063	1974.3	68	83
20-24	0.708	0.058	1973.0	55	65
25-29	1.476	0.051	1971.0	46	54
30-34	2.093	0.053	1968.7	46	53
35-39	2.480	0.055	1966.0	46	54
40-44	2.593	0.058	1963.1	45	53
45-49	2.522	0.064	1959.9	46	54

Source: Data provided by the Dirección General de Estadística y Censos of Uruguay.

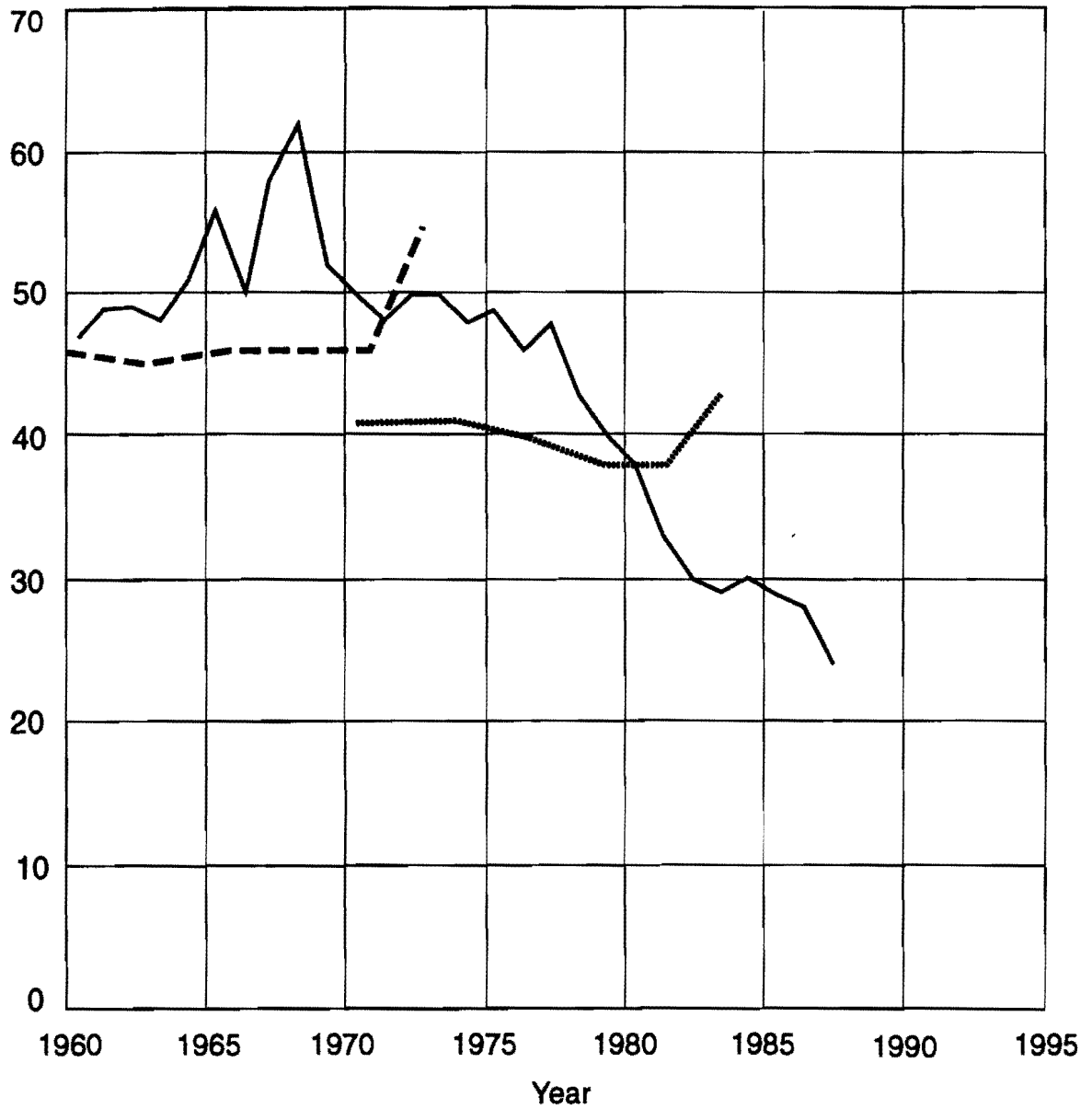
CENSUS, 23 OCTOBER 1985
(Indirect estimates, East model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.105	0.049	1984.7	53	63
20-24	0.655	0.044	1983.4	43	50
25-29	1.421	0.042	1981.5	38	44
30-34	2.078	0.044	1979.3	38	44
35-39	2.513	0.048	1976.7	40	47
40-44	2.672	0.052	1973.9	41	48
45-49	2.722	0.057	1970.7	41	48

Source: Uruguay, VI Censo de Población y IV de Viviendas, 1985: comentarios (Montevideo, Dirección General de Estadística y Censos, 1989), p. 308, table 38.

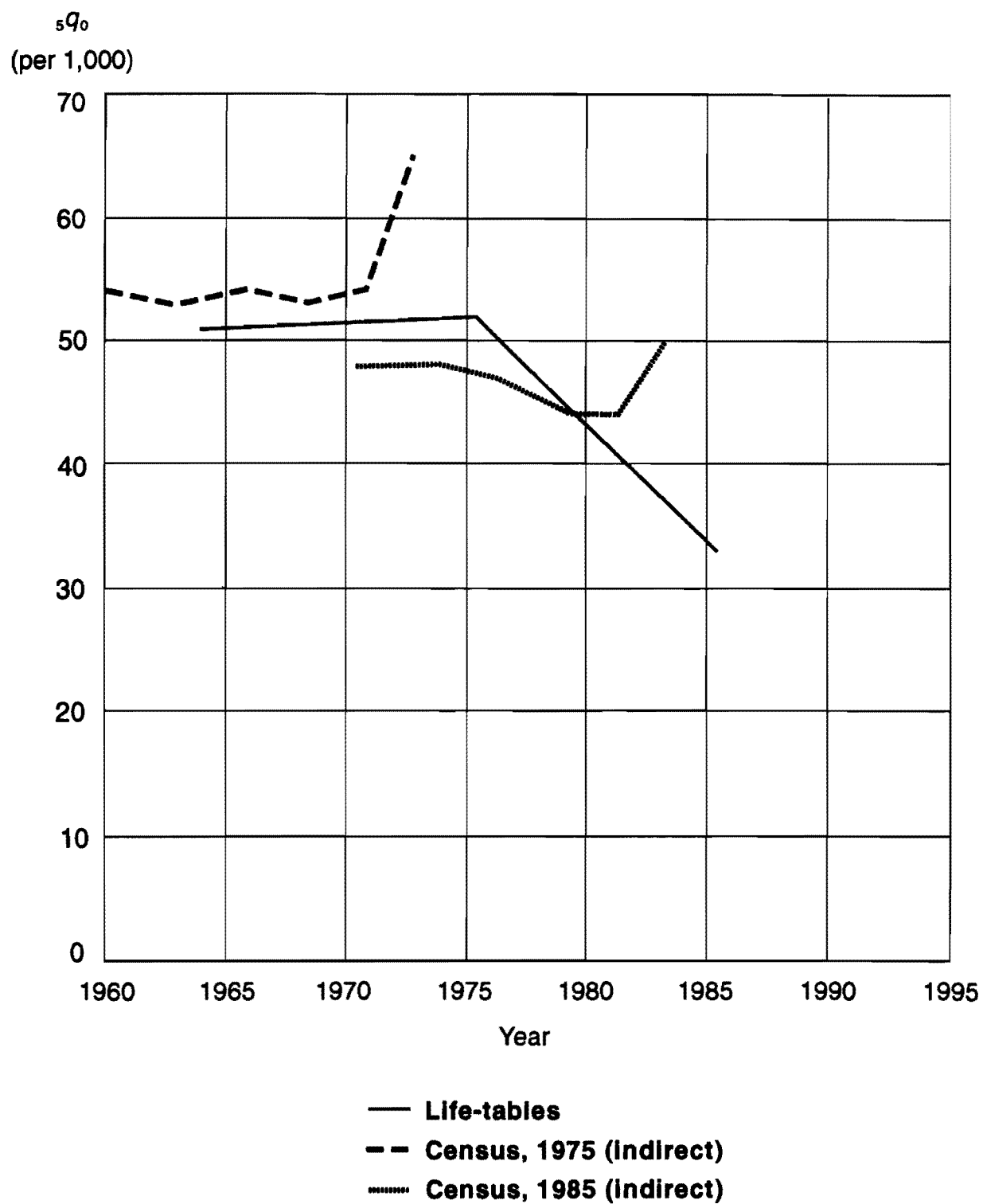
Infant mortality: Uruguay

iq_0
(per 1,000)



— Vital registration
-- Census, 1975 (indirect)
... Census, 1985 (indirect)

Under-five mortality: Uruguay



VENEZUELA

Vital registration

Registration of deaths is reported to be complete. The national life-tables have been based on vital registration and the censuses of 1961, 1971 and 1981.

Censuses

Brass questions were included in the censuses of 1981 and 1990, although data from the 1990 census are not yet available.

Sample surveys

Maternity histories were collected in 1977 by the Encuesta Nacional de Fecundidad (WFS).

VITAL REGISTRATION

Year	Infant mortality (per 1,000)	Year	Infant mortality (per 1,000)	Year	Infant mortality (per 1,000)
1960	57	1970	49	1980	34
1961	56	1971	50	1981	35
1962	48	1972	53	1982	28
1963	49	1973	54	1983	26
1964	50	1974	46	1984	27
1965	49	1975	44	1985	26
1966	46	1976	43	1986	25
1967	41	1977	39	1987	24
1968	45	1978	35	1988	22
1969	43	1979	33	1989	23

Sources: *Anuario estadístico de Venezuela, 1969* (Caracas, Ministerio de Fomento, Dirección General de Estadística y Censos Nacionales, 1972); and *Anuario estadístico de Venezuela, 1976, 1978, 1981, 1985 and 1989* (Caracas, Oficina Central de Estadística e Informática, 1979, 1980, 1982, 1986 and 1990).

INFANT AND CHILD MORTALITY RATES FROM NATIONAL LIFE-TABLES

Period	Mortality rate (per 1,000)	
	140	140
1961	58	81
1971	53	71
1980-1982	33	41

Sources: Chi-yi Chen and Michel Picouet, *Dinámica de la población: caso de Venezuela*, edición UCAB-ORSTOM (Caracas, Universidad Católica Andrés Bello, Instituto de Investigaciones Económicas y Sociales; and France, Office de la recherche scientifique et technique outre-mer, 1979), pp. 180 and 181, tables III-20 and III-21; and Gabriel Bidegain, "Tablas de mortalidad de Venezuela, 1980-1982", Working paper No. 12, Caracas, Universidad Católica Andrés Bello, Instituto de Investigaciones Económicas y Sociales, 1984, p. 18, table IVc.

ENCUESTA NACIONAL DE FECUNDIDAD, MARCH-AUGUST 1977
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1960	1970
1962-1967	43	61
1967-1972	46	64
1972-1977	53	64

Source: Shea Oscar Rutstein, *Infant and Child Mortality: Levels, Trends and Demographic Differentials*, World Fertility Survey Comparative Studies, No. 24 (Voorburg, Netherlands, International Statistical Institute, 1983), p. 98.

ENCUESTA NACIONAL DE FECUNDIDAD, MARCH-AUGUST 1977
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.190	0.053	1976.4	55	73
20-24	1.140	0.053	1975.1	48	63
25-29	2.450	0.057	1973.2	48	61
30-34	3.900	0.062	1971.0	48	62
35-39	5.040	0.067	1968.6	49	64
40-44	6.120	0.077	1965.9	51	67

Source: Venezuela: *informe final de la Encuesta de Fecundidad, 1977* (Caracas, Oficina Central de Estadística e Informática, 1982), p. 68, table 22.

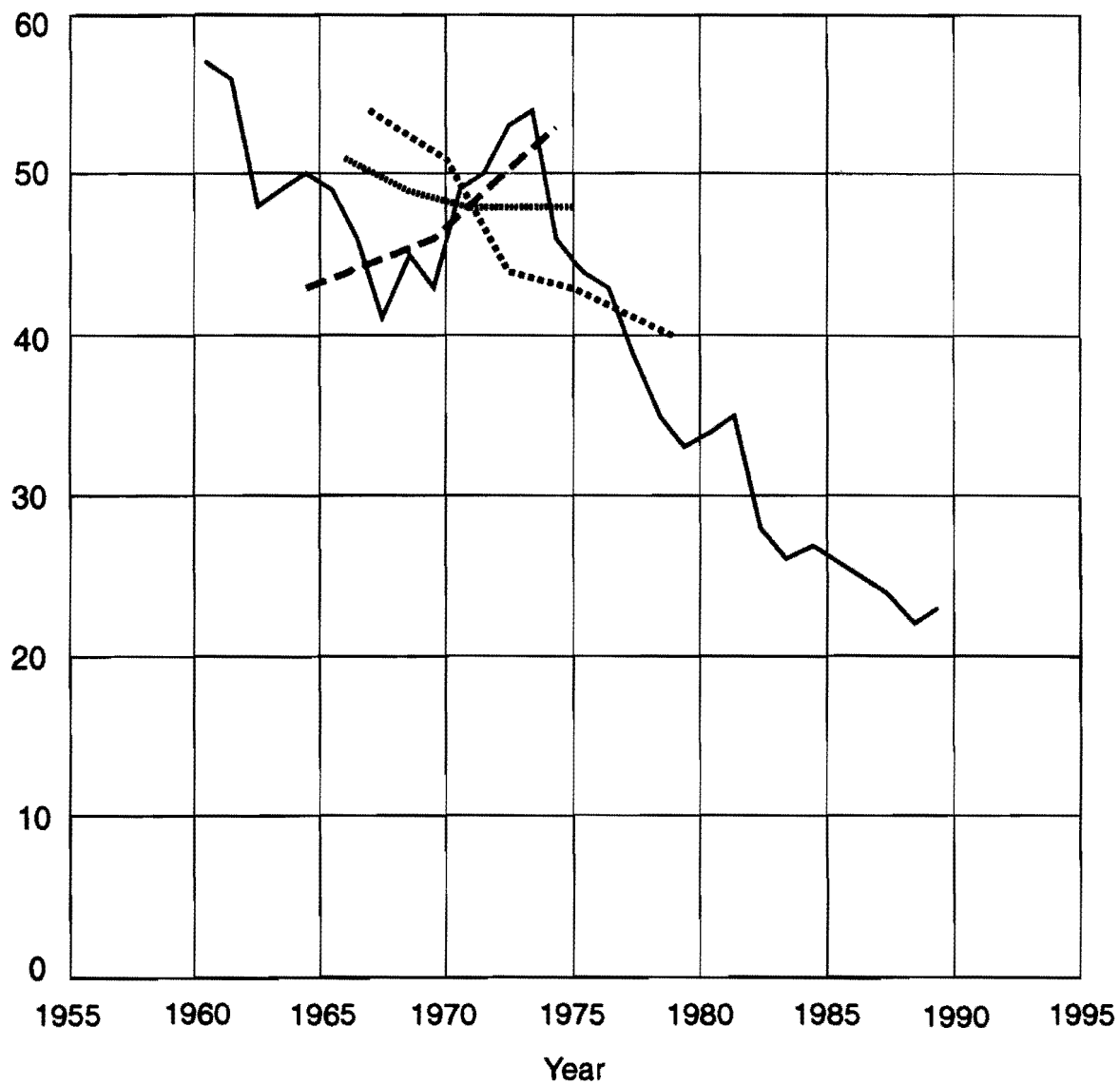
CENSUS, 20 OCTOBER 1981
(Indirect estimates, West model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.218	0.026	1980.6	26	30
20-24	1.082	0.044	1979.2	40	51
25-29	2.127	0.049	1977.3	41	51
30-34	3.129	0.055	1975.0	43	55
35-39	4.196	0.060	1972.5	44	56
40-44	5.036	0.077	1969.8	51	67
45-49	5.580	0.090	1966.9	54	71

Source: Gabriel Bidegain, "La mortalidad infantil y juvenil en Venezuela (comparación de diversos procedimientos para su medida", Caracas, Venezuela, Universidad Católica Andrés Bello, Instituto de Investigaciones Económicas y Sociales, 1985.

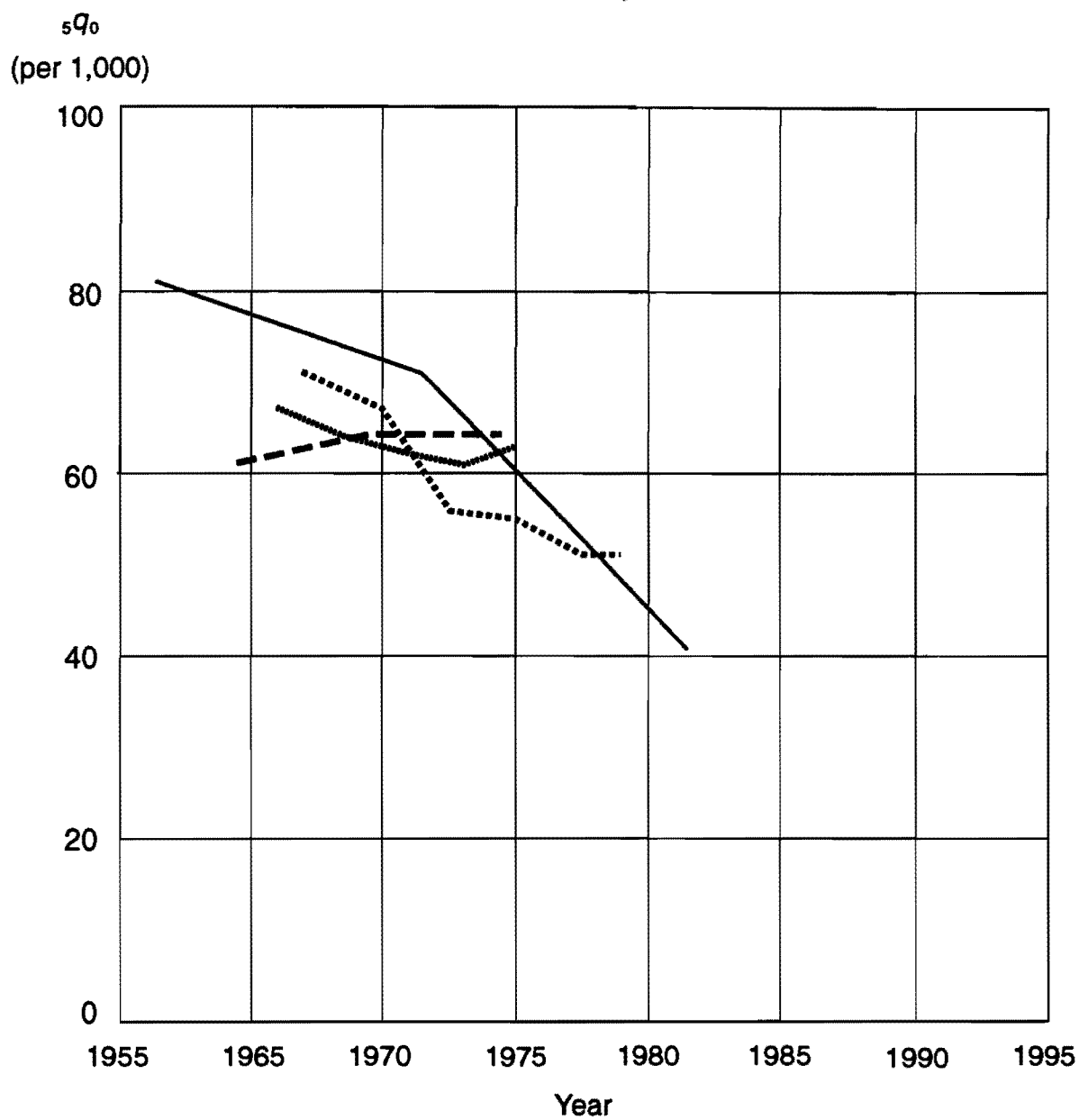
Infant mortality: Venezuela

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(per 1,000)



- Vital registration
- - Encuesta Nacional de Fecundidad, 1977 (direct)
- Encuesta Nacional de Fecundidad, 1977 (indirect)
- Census, 1981 (indirect)

Under-five mortality: Venezuela



- Life-tables
- - Encuesta Nacional de Fecundidad, 1977 (direct)
- . . . Encuesta Nacional de Fecundidad, 1977 (indirect)
- Census, 1981 (indirect)

VIET NAM

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1989 census.

Sample surveys

Maternity histories were collected in 1988 by the Viet Nam Demographic and Health Survey.

VIET NAM DEMOGRAPHIC AND HEALTH SURVEY, MAY-JUNE 1988
(Direct estimates)

Period	Mortality rate (per 1,000)	
	1990	1990
1973-1977	39	57
1978-1982	38	52
1983-1988	34	43

Source: Viet Nam Demographic and Health Survey, 1988 (Hanoi, National Committee for Population and Family Planning, 1990), p. 55, table 6.1.

VIET NAM DEMOGRAPHIC AND HEALTH SURVEY, MAY-JUNE 1988
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1990	1990
15-19	0.019	0.044	1987.8	58	89
20-24	0.649	0.044	1986.8	43	62
25-29	1.857	0.041	1985.2	34	46
30-34	2.978	0.054	1983.1	39	55
35-39	3.890	0.071	1980.6	45	66
40-44	4.749	0.078	1977.9	45	66
45-49	5.756	0.099	1974.8	50	74

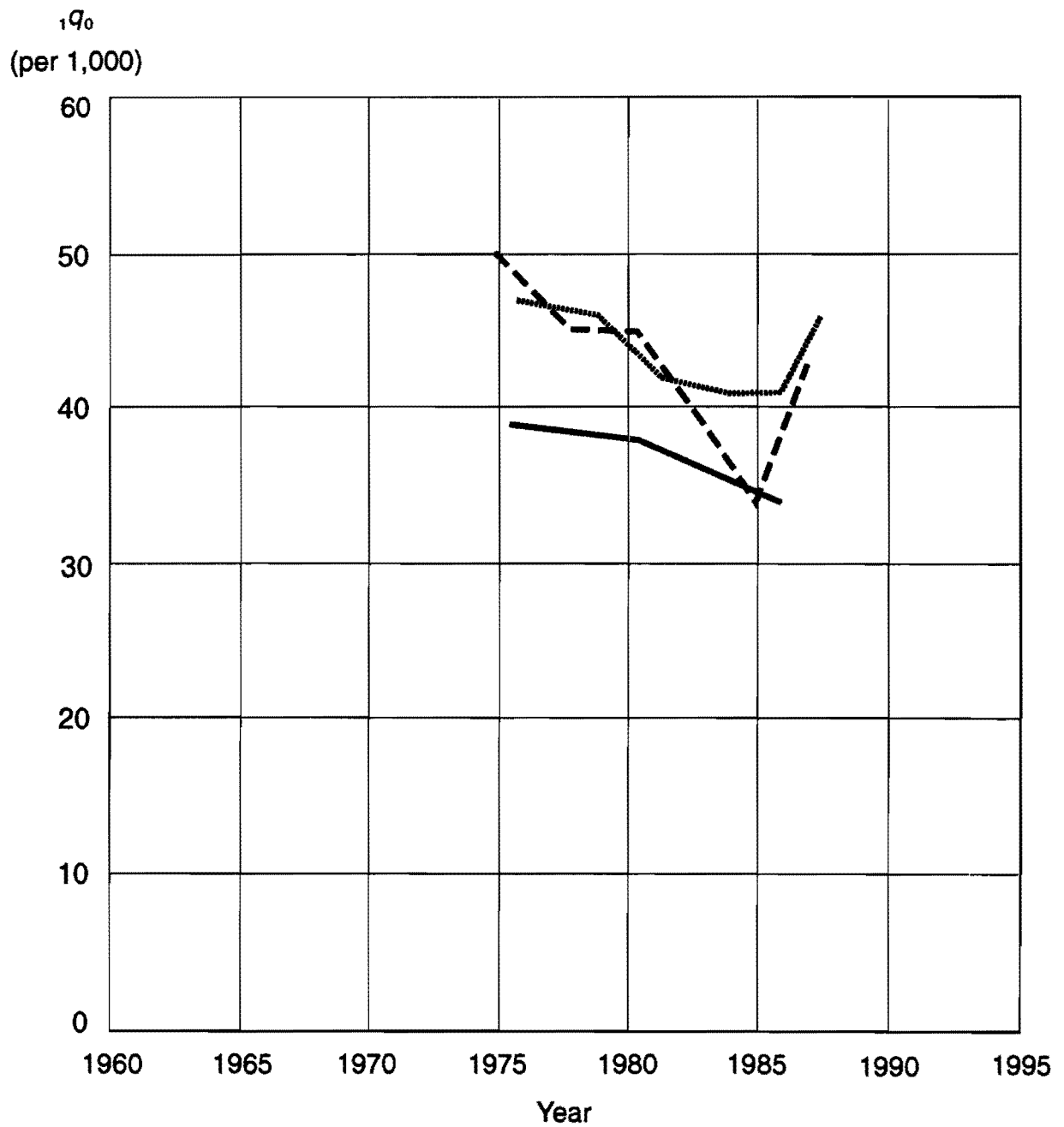
Source: Viet Nam Demographic and Health Survey, 1988 (Hanoi, National Committee for Population and Family Planning, November 1990), pp. 30 and 59, tables 3.5 and 6.4.

CENSUS, 31 MARCH 1989
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1980
15-19	0.047	0.056	1988.6	68	107
20-24	0.653	0.050	1987.5	46	68
25-29	1.731	0.052	1985.9	41	59
30-34	2.765	0.058	1983.8	41	58
35-39	3.638	0.065	1981.4	42	61
40-44	4.358	0.079	1978.8	46	67
45-49	4.934	0.093	1975.8	47	70

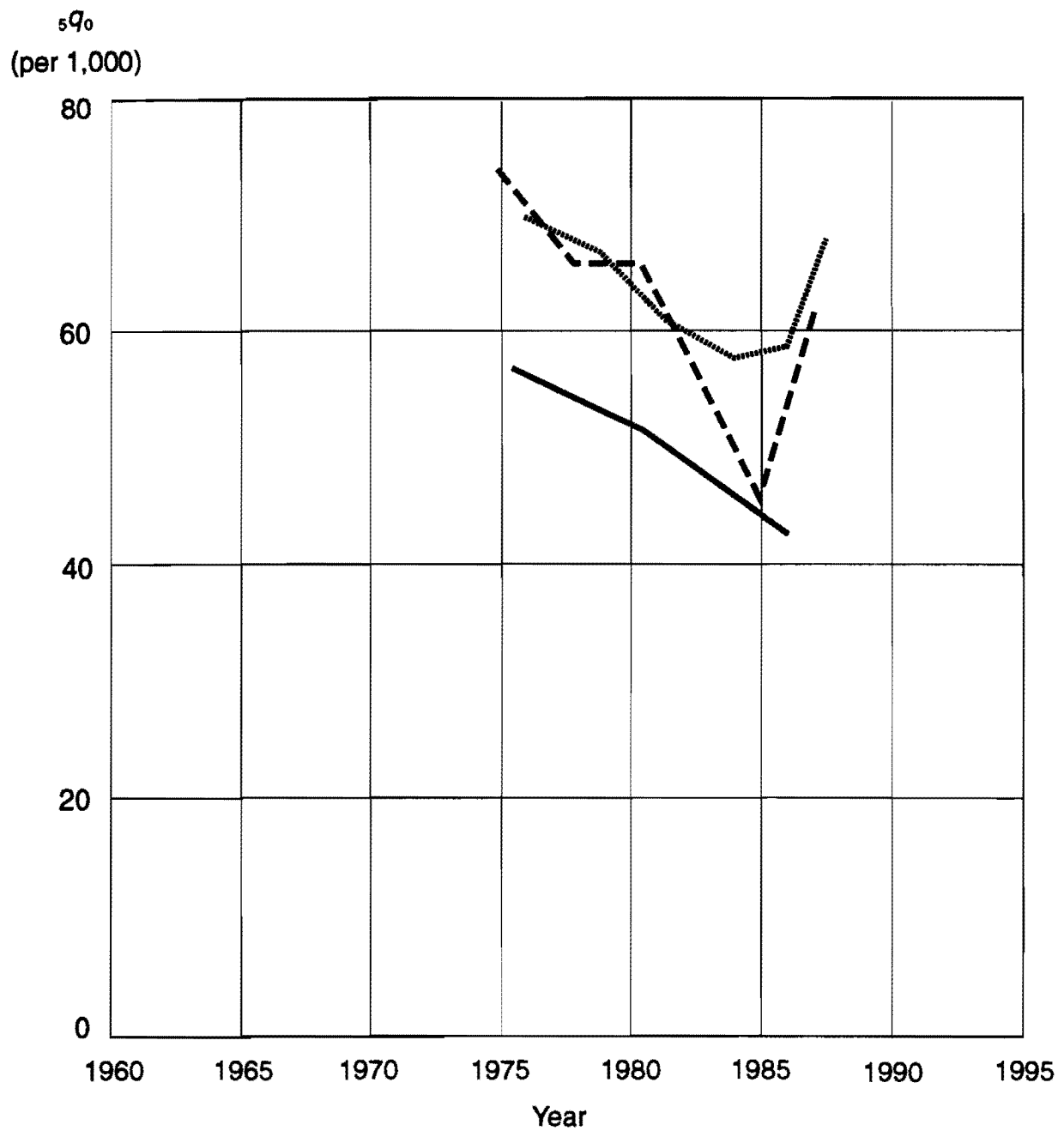
Source: Viet Nam Population Census-1989: Sample Results (Hanoi, Central Census Steering Committee, 1990), table 5.1.

Infant mortality: Viet Nam



— Viet Nam Demographic and Health Survey, 1988 (direct)
-- Viet Nam Demographic and Health Survey, 1988 (indirect)
..... Census, 1989 (indirect)

Under-five mortality: Viet Nam



- Viet Nam Demographic and Health Survey, 1988 (direct)
- - Viet Nam Demographic and Health Survey, 1988 (indirect)
- Census, 1989 (indirect)

ZAIRE

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1974 census.

Sample surveys

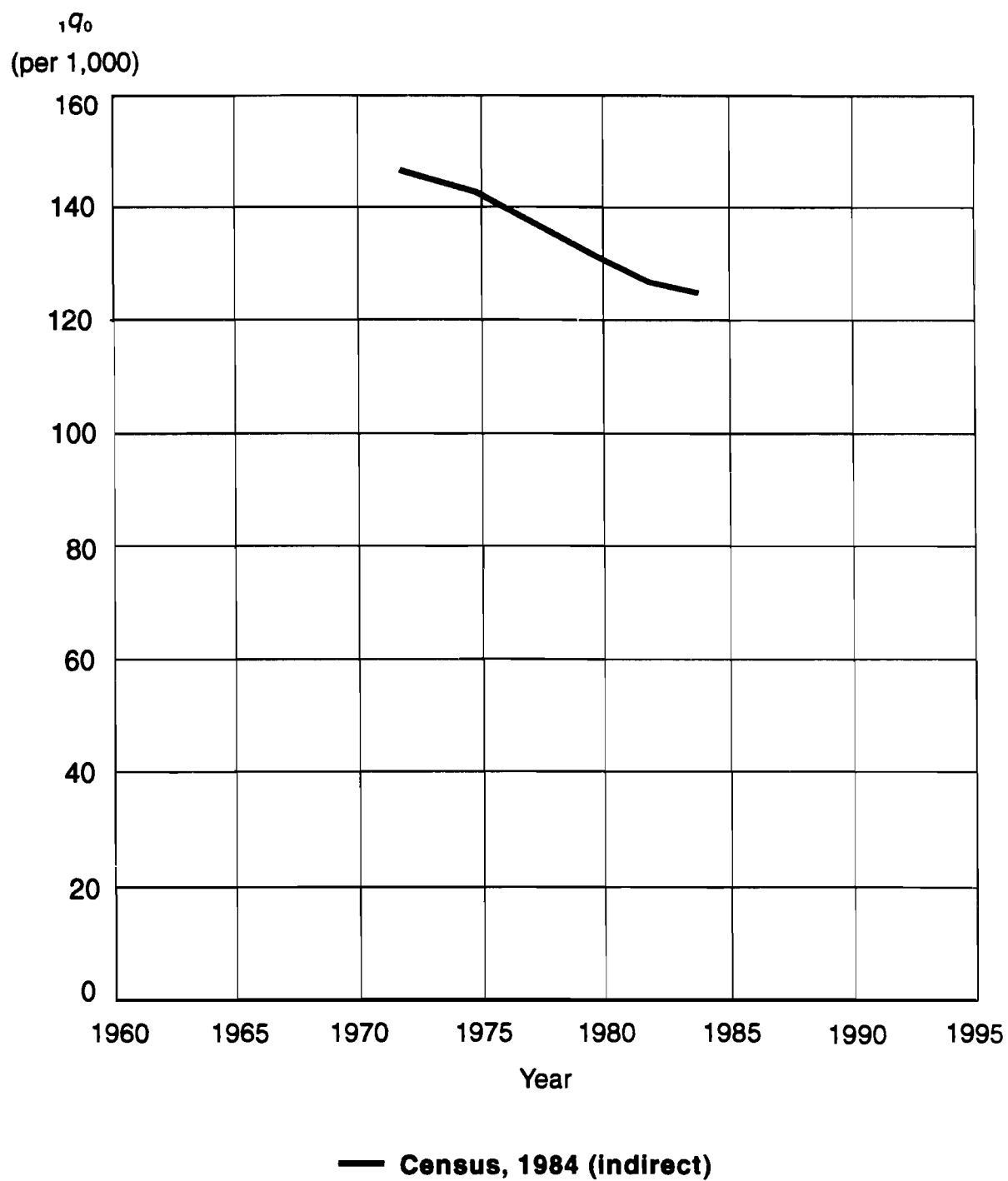
No relevant data are available.

CENSUS, 1 JULY 1984
(Indirect estimates, South model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				1960	1970
15-19	0.347	0.150	1983.2	126	200
20-24	1.566	0.165	1981.9	125	198
25-29	3.217	0.183	1980.1	127	200
30-34	4.668	0.204	1978.0	131	210
35-39	5.859	0.225	1975.8	136	220
40-44	6.256	0.255	1973.2	143	235
45-49	6.096	0.283	1970.2	147	243

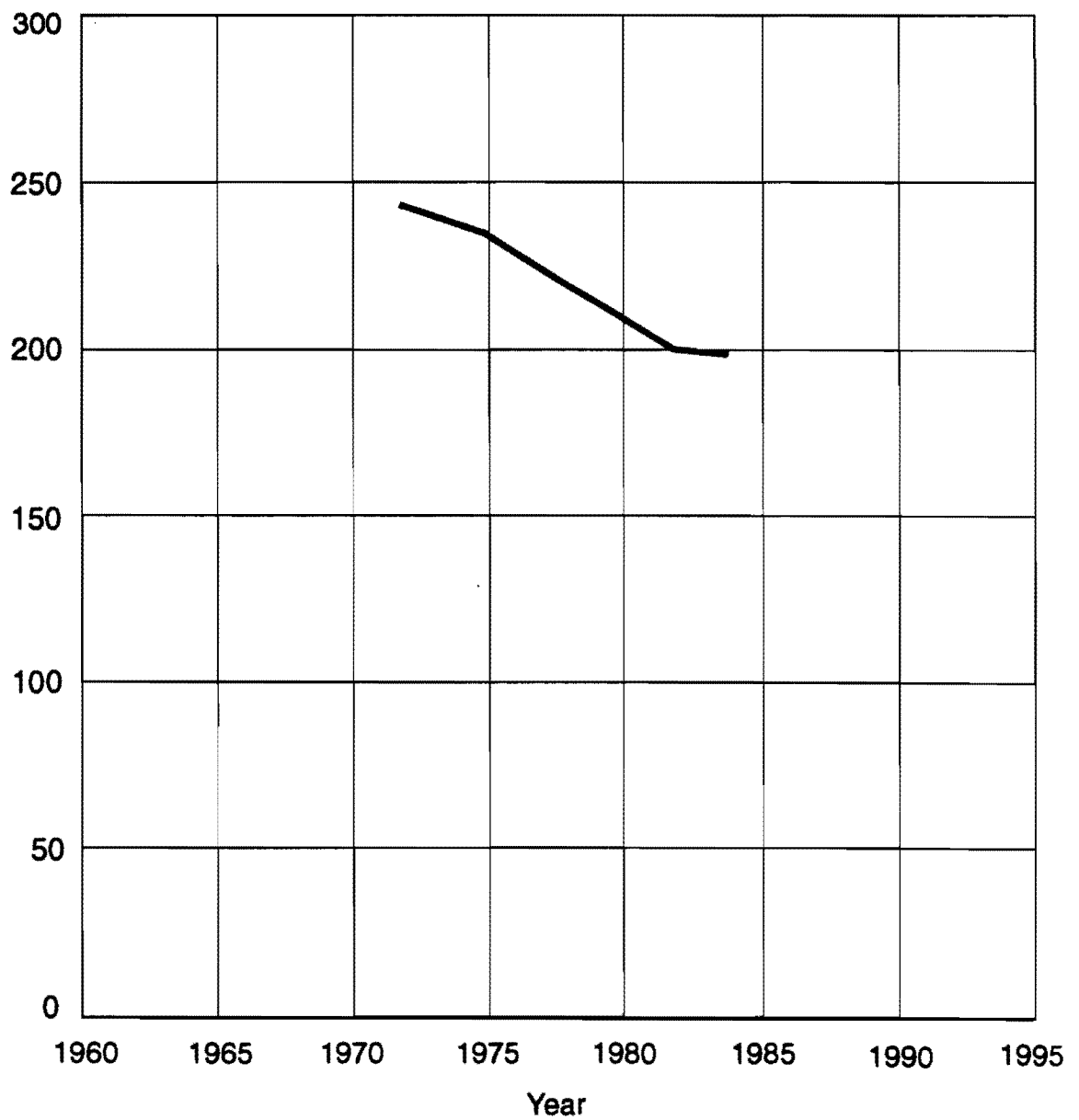
Source: Zaire, Recensement scientifique de la population, 1984: un aperçu démographique; National, caractéristiques démographiques (Kinshasa, Institut national de la statistique, 1991), table 8.

Infant mortality: Zaire



Under-five mortality: Zaire

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(per 1,000)



— Census, 1984 (indirect)

ZAMBIA

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the censuses of 1969 (on a sample basis), 1980 and 1990. No results from the 1990 census are available as yet.

Sample surveys

Brass questions were included in a large-scale sample survey, called the Sample Census of Population, held in 1974.

CENSUS, 22-30 AUGUST 1969
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.345	0.146	1968.7	156	264
20-24	1.939	0.168	1967.2	126	212
25-29	3.432	0.191	1965.1	119	200
30-34	4.609	0.216	1962.5	120	202
35-39	5.133	0.247	1959.7	127	214
40-44	5.117	0.287	1956.8	136	230
45-49	4.986	0.311	1953.9	137	231

Source: Zambia, *Census of Population and Housing, 1969: Final Report*, vol. III, *Demographic Analysis* (Lusaka, Central Statistical Office, 1979), pp. 5 and 11, tables 1.1 and 2.1.

SAMPLE CENSUS OF POPULATION, 26 AUGUST-7 SEPTEMBER 1974
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1970
15-19	0.37	0.099	1973.5	96	157
20-24	1.87	0.126	1972.2	96	157
25-29	3.62	0.161	1970.3	105	173
30-34	4.96	0.191	1968.1	112	186
35-39	5.89	0.210	1965.7	113	188
40-44	6.08	0.256	1963.0	126	212
45-49	5.69	0.289	1960.2	130	220

Source: Althea Hill, "The demography of Zambia", PHN Technical Note 85-9, Washington, D.C., World Bank, Population, Health and Nutrition Department, 1985, p. 30, table M.1.

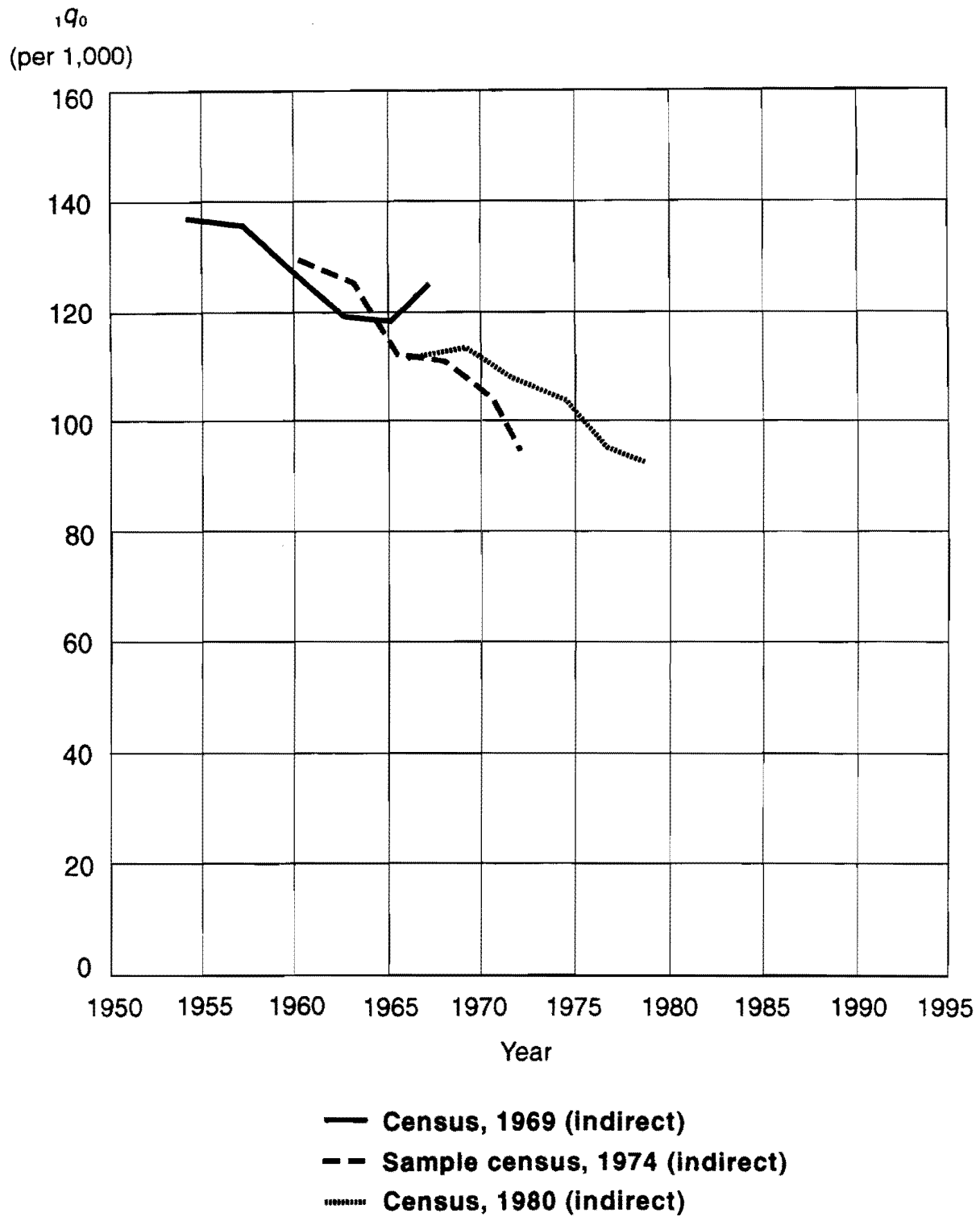
CENSUS, 25 AUGUST 1980
(Indirect estimates, North model)

Age of women	Mortality level		Reference date	Mortality rate ^a (per 1,000)	
	Male	Female		1960	1980
15-19	14.2	12.7	1979.9	110	183
20-24	15.2	14.6	1978.6	94	153
25-29	14.8	14.4	1976.7	97	159
30-34	14.2	13.5	1974.3	105	174
35-39	14.3	12.7	1971.7	109	181
40-44	13.6	12.4	1969.0	115	192
45-49	13.8	12.8	1966.0	112	186

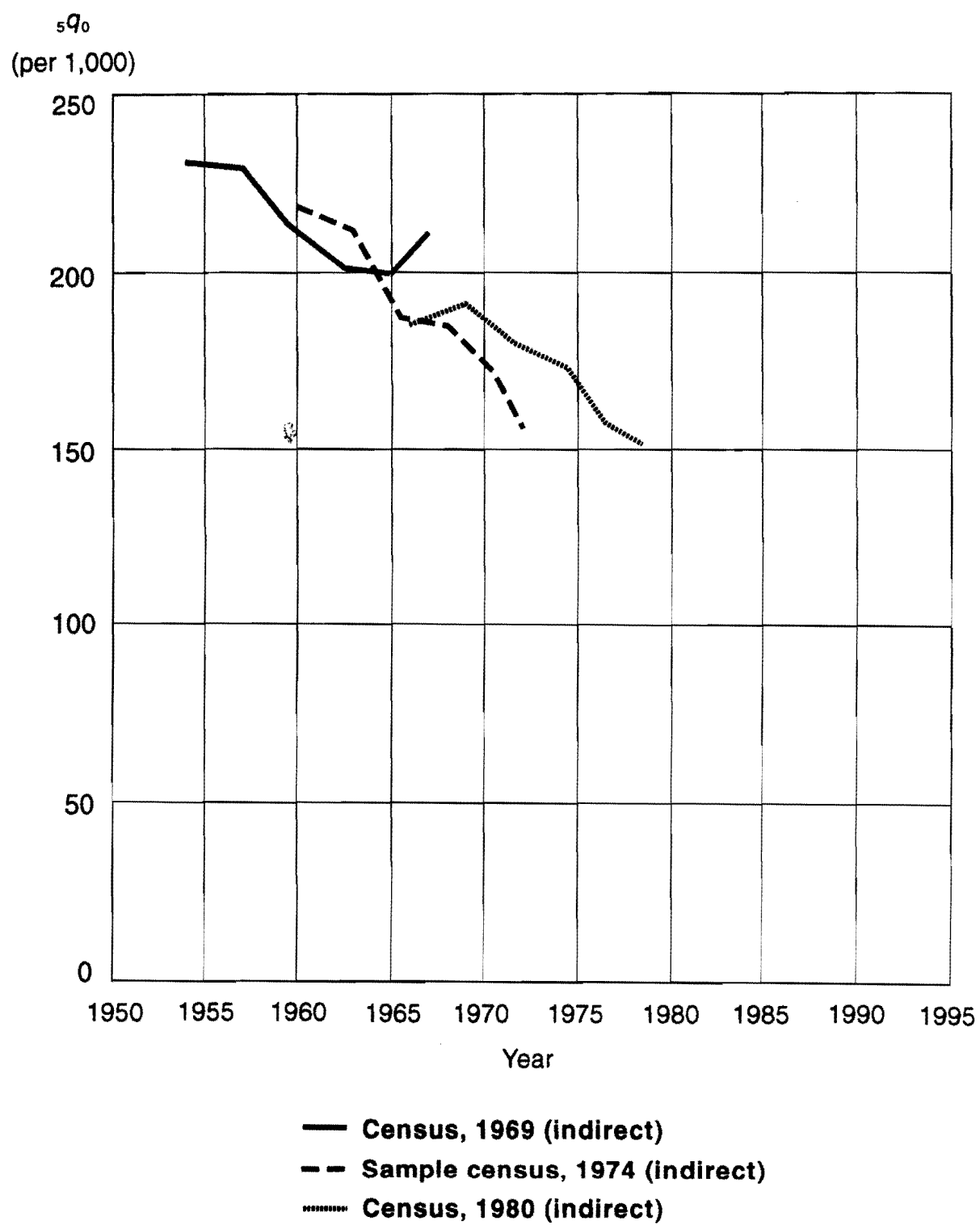
Source: 1980 Population and Housing Census of Zambia, vol. IV, *Analytical Report: Fertility and Mortality Levels and Trends* (Lusaka, Central Statistical Office, 1985), table 2.1.

^a Calculated from the weighted averages of the mortality levels for males and females.

Infant mortality: Zambia



Under-five mortality: Zambia



ZIMBABWE

Vital registration

Completeness of death registration is not reported.

Censuses

Brass questions were included in the 1969 (on a sample basis) and 1982 censuses. The results given here for 1982 are based on tabulations made for a 10 per cent sample of the census returns.

Sample surveys

Maternity histories were included in the Zimbabwe Demographic and Health Survey (DHS) of 1988. Brass questions were included in the Zimbabwe Reproductive Health Survey of 1984 and in the Inter-Censal Demographic Survey of 1987.

CENSUS, 20 MARCH 1969
(Indirect estimates, North model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1980</i>
15-19	0.252	0.106	1968.2	111	185
20-24	1.522	0.125	1966.9	98	161
25-29	3.085	0.141	1965.0	94	153
30-34	4.483	0.159	1962.8	95	155
35-39	5.497	0.178	1960.3	98	160
40-44	6.089	0.199	1957.6	100	164
45-49	6.351	0.218	1954.7	100	163

Source: Zimbabwe, Central Statistical Office, *Census of Population, 1969* (Salisbury, Government Printer, n.d.).

CENSUS, 16 AUGUST 1982
(Indirect estimates, North model)

<i>Age of women</i>	<i>Average parity</i>	<i>Proportion of children dead</i>	<i>Reference date</i>	<i>Mortality rate (per 1,000)</i>	
				<i>1960</i>	<i>1980</i>
15-19	0.228	0.094	1981.6	100	164
20-24	1.466	0.104	1980.4	84	134
25-29	3.065	0.124	1978.5	84	135
30-34	4.653	0.143	1976.3	87	140
35-39	5.878	0.158	1973.8	88	143
40-44	6.802	0.177	1971.2	91	147
45-49	7.188	0.202	1968.3	93	151

Source: 1982 Population Census-Main Demographic Features of the Population of Zimbabwe: An Advance Report Based on a Ten Percent Sample (Harare, Central Statistical Office, 1985), p. 168, table VII.2.

ZIMBABWE REPRODUCTIVE HEALTH SURVEY, JULY-OCTOBER 1984
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1990
15-19	0.3	0.063	1983.5	62	96
20-24	1.6	0.070	1982.2	57	87
25-29	3.2	0.123	1980.3	83	133
30-34	4.6	0.123	1978.2	76	120
35-39	6.2	0.134	1975.8	76	121
40-44	7.0	0.117	1973.2	63	97
45-49	7.5	0.140	1970.3	67	104

Source: Zimbabwe Reproductive Health Survey, 1984 (Harare, National Family Planning Council; and Columbia, Maryland, Westinghouse Public Applied Systems, 1985), pp. 69-70, tables 5.1 and 5.2.

INTER-CENSAL DEMOGRAPHIC SURVEY ROUND 1, AUGUST 1987
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1960	1990
15-19	0.171	0.076	1986.7	83	133
20-24	1.292	0.077	1985.5	65	101
25-29	2.946	0.090	1983.8	65	100
30-34	4.464	0.099	1981.7	64	99
35-39	5.796	0.122	1979.3	71	112
40-44	6.681	0.132	1976.7	70	110
45-49	7.161	0.160	1973.8	76	120

Source: Leif Johansson, "ICDS round 1 and round 2: preliminary analysis of demographic measures of change derived from the round 1 data", report on a mission to the Central Statistical Office, Harare, Zimbabwe, 3 July-3 August 1989; Stockholm, Statistics Sweden, International Consulting Office, 1989, p. 4.

ZIMBABWE DEMOGRAPHIC AND HEALTH SURVEY, SEPTEMBER 1988-JANUARY 1989
(Direct, estimates)

Period	Mortality rate (per 1,000)	
	1960	1990
1973-1977	54	92
1978-1982	64	104
1983-1988*	53	75

Source: Zimbabwe Demographic and Health Survey, 1988 (Harare, Ministry of Finance, Economic Planning, and Development, Central Statistical Office; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 78, table 6.1.

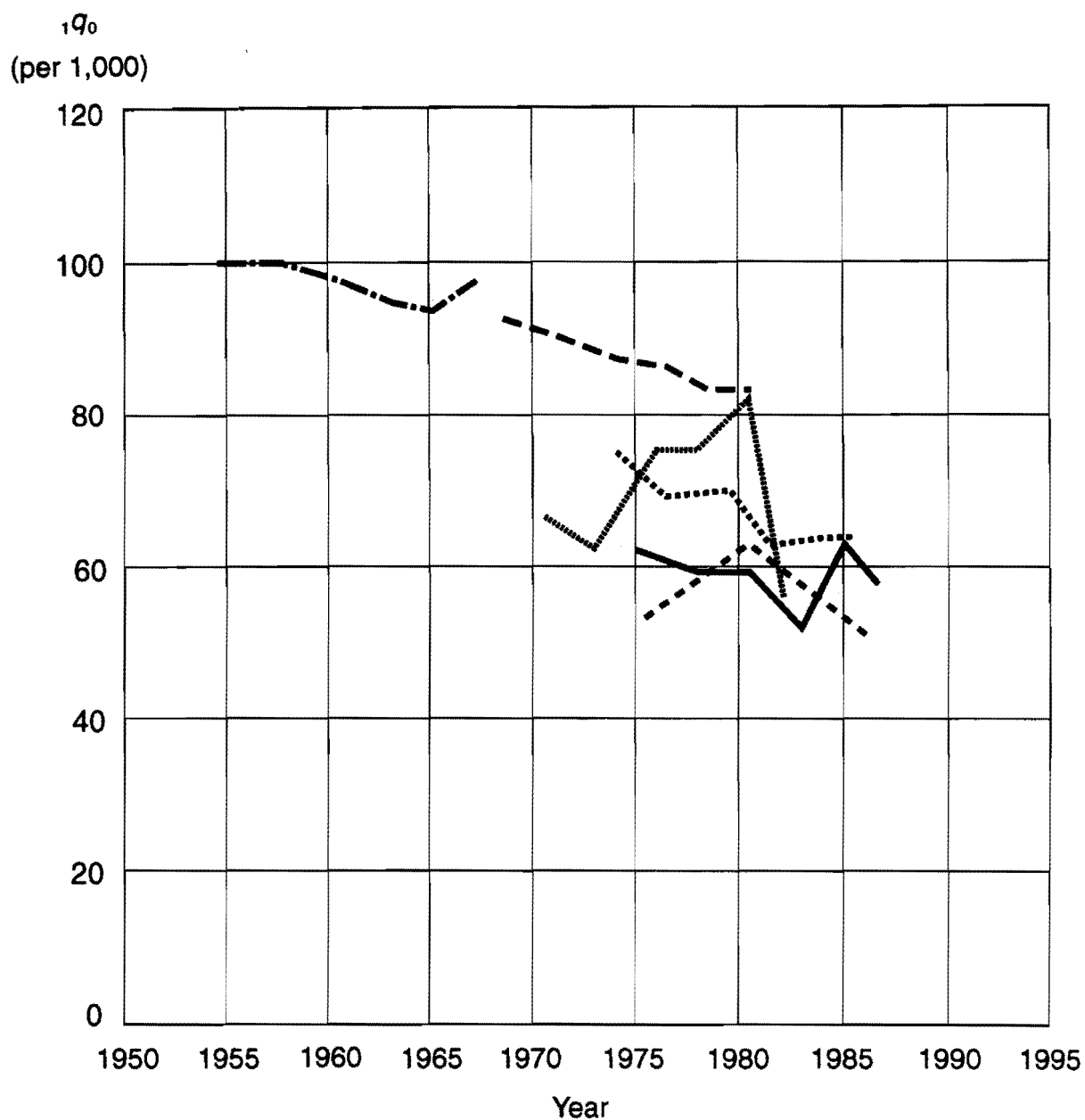
* Including events occurring in 1988 up to the month preceding the date of interview.

ZIMBABWE DEMOGRAPHIC AND HEALTH SURVEY, SEPTEMBER 1988-JANUARY 1989
(Indirect estimates, North model)

Age of women	Average parity	Proportion of children dead	Reference date	Mortality rate (per 1,000)	
				1980	1990
15-19	0.19	0.07	1987.9	75	118
20-24	1.30	0.07	1986.7	59	91
25-29	2.89	0.09	1984.9	64	99
30-34	4.35	0.08	1982.8	53	80
35-39	5.54	0.10	1980.5	60	92
40-44	6.40	0.11	1977.9	60	92
45-49	6.87	0.13	1975.0	63	97

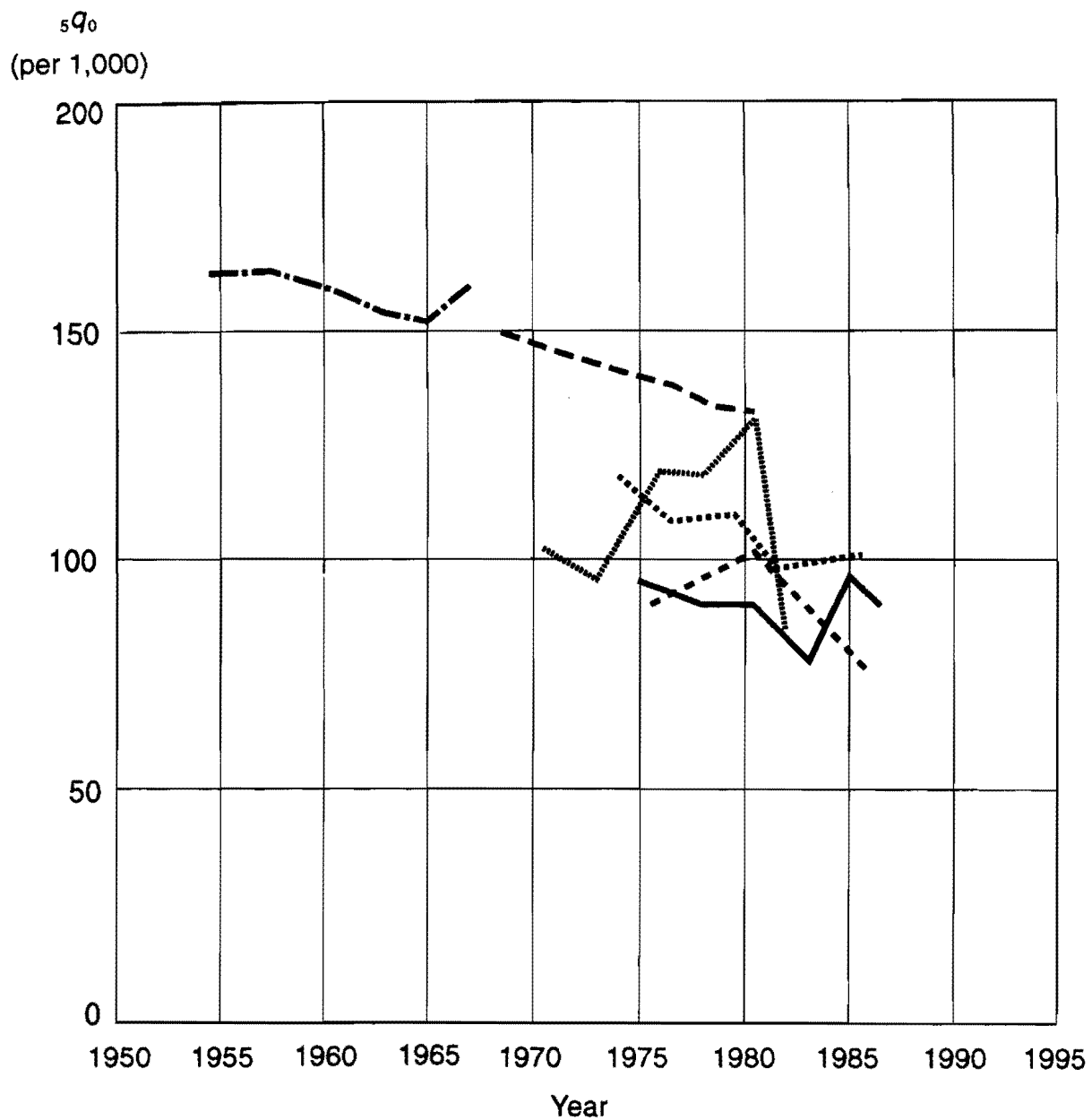
Source: *Zimbabwe Demographic and Health Survey, 1988* (Harare, Ministry of Finance, Economic Planning, and Development, Central Statistical Office; and Columbia, Maryland, Institute for Resource Development/Macro Systems, Inc., 1989), p. 81, table 6.4.

Infant mortality: Zimbabwe



- Census, 1969 (indirect)
- Census, 1982 (indirect)
- Zimbabwe Reproductive Health Survey, 1984 (indirect)
- Inter-censal Demographic Survey, Round 1, 1987 (indirect)
- - - Zimbabwe Demographic and Health Survey, 1988 (direct)
- Zimbabwe Demographic and Health Survey, 1988 (indirect)

Under-five mortality: Zimbabwe



- Census, 1969 (indirect)
- — Census, 1982 (indirect)
- Zimbabwe Reproductive Health Survey, 1984 (indirect)
- Inter-censal Demographic Survey, Round 1, 1987 (indirect)
- - - Zimbabwe Demographic and Health Survey, 1988 (direct)
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