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## The social demography of Asian youth: A reconstruction over 1950–1990 and projections to 2025

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Established in 1969 as a unit of the East-West Center, the Program on Population conducts research and offers professional education focusing on population issues, with emphasis on the analysis of demographic and human-resource trends, their social and economic causes and consequences, and their policy implications in Asia, the Pacific, and the United States.

## Abstract

Much social change across Asia has focused on youth, and there is great current interest in youth policy, especially regarding reproductive health. The fullest understanding of these changes requires a comparative perspective over an historically meaningful period of time. The empirical approach of this research is to assemble a data-set on youth changes that spans 17 Asian countries over the 1950–1990 period, combined with projections of several important time series from 1990 to 2025. The diverse historical experiences of this array of countries fall into a distinct pattern which in this analysis is called the *youth transition*.

The relevant changes among youth during the Asian youth transition include (a) common changes of a transitional nature (the demographic youth transition, including the youth bulge; the nuptiality transition; the education transition; other transitions which are not measured with reliable comparative and historical data); (b) important and measurable changes of a more complex nature (e.g., labor force participation changes); (c) other important changes that are not measured in this work, and perhaps cannot be except sporadically (e.g., age at menses; indicators of the sexual system, etc.). The demographic core of the youth transition is driven by fertility transition, and results in a one-time youth bulge. The youth share of total population shifts from about 16 percent (pre-transition) to somewhere in the range 20–24 percent (mid-bulge), back down to the pretransition level (some 30 years after the onset of fertility decline) and then well beyond to the post-transition, stable level of about 12 percent (many decades hence).

Across 17 Asian societies, the characteristics of the mid-transition youth bulge vary with the tempo of fertility decline and the total amount of fertility change (a function of the initial fertility level). The two key indicators are the youth share of total population, and the youth population growth rate; these can be very high when fertility drops quickly from a very high level to a very low level (e.g., Korea, Singapore, Taiwan). Late-comers to fertility transition (e.g., Indonesia, Philippines) are experiencing muted youth bulges. What will happen to the remaining countries (e.g., India, Pakistan) depends largely on the character of their fertility declines. These results bring out a trade-off that country planners should be aware of. A rapidly played out youth bulge is disruptive in the short run, but it generates a lower maximum number of youth.

The magnitude of the youth bulge is but a part, sometimes a small part, of the overall youth transition faced by Asian societies. The social components of the youth transition—especially rising percents single and rising percents enrolled—produce dramatic growth rates for specific sub-groups of the youth population. Three sub-groups are examined in detail. These are (a) single out-of-school youth, (b) youth in the labor force, among those out of school, and (c) youth not involved formally in either work or schooling institutions.

## I. INTRODUCTION: FOCUS ON YOUTH

In recent years policy attention has rightfully turned to youth and their special problems, and to the programmatic challenge of reaching youth with useful information and effective programs. This focus on youth by governments, international agencies and NGO's reflects recognition that a nation's youth can be a significant problem but also a considerable resource for national development. Nowhere is this new attention to youth more visible and welcome than in the arena of reproductive health. Attention to reproductive health issues among youth was reinforced dramatically by the International Conference on Population and Development's *Programme of Action* (United Nations 1994) with its stress on reproductive health and empowerment, especially for excluded groups such as women and youth.<sup>1</sup>

The present study is focused on the societies of Asia, where policy interest in youth is readily documented.<sup>2</sup> While Asia is commonly treated as one region, it is actually several, even many. It is an assortment of nations and societies possessing great diversity of economic development levels, religions and cultures. Its political systems range from democratic to authoritarian. Of particular relevance is the range of approaches to social policy including youth policy. All governments see their youth both as problem and as resource, but with marked differences in emphasis.<sup>3</sup>

Though marked by obvious differences in history, social system and economic achievement, Asian societies are subject to common forces as well, which engender a degree of similarity. In the search for such shared influences much attention has deservedly gone to the impact of mass schooling on the lives of young people, and of course to the similarities among economic trajectories and commonalities among national labor markets. Another shared influence is the electronic media and particularly television, whose broad geographic and social reach spreads cultural and ideological messages and draws youth from disparate experiences into

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<sup>1</sup>Non-government organizations (NGOs) were prominent in the emerging new International Population Movement (Basu 1997) that was reflected in the Cairo conference. They and other organizations of international scope have sought to establish their interest in youth reproductive health issues in programmatic documents. Among these is Alan Guttmacher Institute (1995), Population Reference Bureau (1992a, 1992b), and, from the World Bank, Cherlin and Riley (1986) and Senderowitz (1995). Research organizations have also been keen to establish the depth of their interest. From the International Population Center, U.S. Bureau of the Census there is McDevitt (1996), and like contributions have come from the International Center for Research on Women (International Center for Research on Women 1996; Yinger, de Sherbinnen, Ochoa, Morris and Hirschand 1992), the Population Information Program (Population Information Program 1985) and the United Nations Population Division (United Nations 1989).

<sup>2</sup>On the emergence in Asia of the youth focus, compare UNICEF's early regional overview (UNICEF 1967) with ESCAP's review at the end of the 1980's (United Nations 1989), and then compare those with ESCAP's most recent overview (ESCAP (1997). This includes a survey of the U.N.'s orchestrated series of initiatives in this area, from the *International Youth Year* (1985), to the *Jakarta Plan of Action on Human Resources Development in the ESCAP Region* (1988), to the *World Programme of Action for Youth to the Year 2000 and Beyond* (1995), to, most recently, the *Beijing Statement on Human Resources Development for Youth in Asia and the Pacific* (1996).

<sup>3</sup>There is the hands-off, *laissez-faire* approach adopted by the Philippines (Raymundo 1989) and Hong Kong (Central Committee on Youth 1988, 1989), but also the attempts at heavy-handed paternalism by Singapore (Quah 1981, 1989; Salaff 1988; Heng and Devan 1992) and Indonesia (Shiraishi 1997).

awareness of virtually global youth culture. The international media portray behavioral patterns and ideological themes that are adopted most readily by urban, elite youth. But youth elites across Asia then re-broadcast national renderings of the same or similar themes in local languages and formats.

Another shared experience of these societies is demographic transition and its many significant corollaries (Bongaarts and Watkins 1996; Freedman 1995; Leete and Alam 1993) from personal changes due to the extension of life, to the transformation of family life due to fertility decline. From demographic transition directly flows youth bulges and deficits and a host of associated changes among youth, the dimensions and consequences of which are examined in this report. In the sections following we look at viewpoints on the demography of youth which have motivated as well as guided the present study.

### A. Youth Demography

Youth demography in the form of "bulges" and "deficits" is a recurring theme in macro-societal studies of social change. At the global scale Goldstone (1991) provides a recent and highly regarded example with his investigation of two century-long waves of state breakdown across Eurasia, culminating at mid-17<sup>th</sup> and 18<sup>th</sup> centuries. He explores remarkably similar processes occurring in diverse settings—England, France, the Ottoman and Chinese empires—at about the same time. Rapid population growth is identified as an underlying factor in each instance. Goldstone argues that breakdown occurs when a state simultaneously experiences three problems: (1) state financial crisis, due to population growth and population pressure; (2) elite divisions due to heightened competition for positions and resources; (3) a high potential for mobilization of popular groups, due to rising grievances and predisposing social patterns. Among the predisposing social patterns is "large numbers of youth in the population," particularly when they are concentrated in urban settings.

The Goldstone model is "demographic/institutional" in character. The overall number of youth is not especially important of itself, but becomes so in interaction with prevailing social and economic institutions.<sup>4</sup> Goldstone draws on long time-series of population estimates for England (Wrigley and Schofield 1981) to show that the proportions of relevant types of youth were highest in England during its periods of greatest political agitation (e.g., the 1630s; cf Goldstone: 138ff). The connection to youth demography in Goldstone's argument is intriguing, though it is not developed in much detail, and youth demography play no more than an implicit role in his discussions of France, the Ottoman Empire, and China. Still, he suggests an interesting line of influence, and in doing so follows a path tread previously, for example, by Keyfitz (1965) and Moller (1968).<sup>5</sup>

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<sup>4</sup>In England, for example, inheritance institutions create a large pool of non-inheriting later-born sons who are easily mobilized politically when they cannot be absorbed by urban labor markets. On the demography of England's youth population also see Musgrove (1963) and Gillis (1974).

<sup>5</sup>For a review see Weiner (1971) and Moller's comprehensive discussion. Also see Bloom and Freeman (1986) for a "generational crowding" framework and Wriggins (1988) for a framework in which youth numbers influence politics through effects on the distribution of scarcities, and through the maldistribution of loads or demands relative to the capabilities to meet those demands. Wallimann and Zito (1984) consider cohort size and

Another important example of macro-societal and comparative analysis is Huntington's widely cited account of the 20<sup>th</sup> century resurgence of cultural and religious identity as a political and economic force. He observes that relatively large, dynamic youth cohorts form the vanguard of many of these social movements, notably the 20<sup>th</sup> century Islamic resurgence (Huntington 1996: pp.109ff, including Figures 5.1–5.3). Huntington joins analysts for the Central Intelligence Agency (CIA 1990; Population and Development Review 1990) in attaching importance to a "benchmark" 20 percent share of youth (defined as those aged 15–24) as rising to the level of a "youth bulge," a social force with which to reckon. In these analyses a youth share below 15 percent constitutes a "youth deficit," which can be equally problematic because it leads to such outcomes as inadequate new entrants to the national labor force. Much of this discussion has only a limited empirical base, however; never more than time series of the youth share of the total population.

The changing demography of youth has figured prominently in analyses of Asian settings as well. In some analyses the number or growth in numbers of youth, or the youth share of the total population, is described as a major or contributing factor in political disturbances (on Indonesia see Keyfitz [1973]; on India see Butler [1990]; on South Korea see Fuller and Pitts [1990]; on Sri Lanka see Fuller [1995]). While the simplest analyses consider only absolute numbers, or relative numbers, or the rate of change in numbers, a few have recognized the importance of social composition or social demography within the youth population. Keyfitz discusses Indonesia's post-war wave of youth in terms of educational planning, urban migration and job creation (Keyfitz 1973, 1986). In her examination of India, Visaria (1986) devotes attention to aspects of social composition including school enrollment and marital status. Xenos (1990a, 1990b) considers the social demography of Asian youth in a comparative, descriptive framework, as does Jones (1997a, 1997b).

Our goal is to build upon these existing studies, though many of them reflect shortcomings, or even misconceptions about the demography of youth, must be addressed. First, and most obviously, much of the analysis just cited is focused on one society or looks at a relatively confined period of time. Important differences among societies and significant long-run changes go unrecognized. Comparison is further inhibited by variations in the definition of youth. The present study covers 17 Asian societies, every country (except Vietnam and North Korea) with a population of 2.5 million or greater.<sup>6</sup> For each, we have assembled comparable data for persons aged 15 through 24<sup>7</sup> covering the span of four decades from 1950 through 1990.

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youthful protest but go beyond the sheer numbers to focus on those "...who are neither entrenched in the family structure nor integrated into the labor market" (p.69), and on the rise of "quasi-autonomous" peer groups.

<sup>6</sup>As well as Brunei with only 257 thousand persons. Excluded are the Maldives (215 thousand), Macao (344 thousand), Bhutan (1.4 million), Mongolia (2.2 million), and, most importantly, Vietnam (66.7 million) and North Korea (21.8 million). The excluded countries account for only 3.1 percent of the regional population.

<sup>7</sup>This is one of many widely accepted, general purpose definitions of youth and is convenient in terms of data sources, particularly census materials. For specific programmatic purposes various other age ranges are employed (cf ESCAP 1997: 7ff). It is worth noting the numbers of young people involved in these definitional choices. Across Asia as a whole there were 647 million persons aged 15–24 in 1990, 20.4 percent of the regional population. If persons ages 10 through 14 are included as well this rises to 30.5 percent, and the broader age range

Second, we have disaggregated the youth cohorts on the basis of available statistical series to produce an effective level of detail while retaining significant time and geographic-comparative dimensions. We cannot directly measure many of the abstract dimensions of change that are of keen interest (e.g., degree of disaffection from traditional public mores, decline of guidance and protection within families; changing commitment to the labor market), but we have identified some social-demographic categories of considerable interest, for which pronounced historical changes and cross-societal variations are apparent.

Third, we examine rather than ignore the demographic dynamics that underlie cross-sectional, descriptive youth demography. In particular, we explore the transitory versus permanent characteristics of youth demography, thus avoiding some of the misleading conclusions that derive from a static, cross-sectional view (e.g., Braungart and Braungart 1989, 1990). We will note important differences between the historical pre-transition settings considered by Goldstone and the societies of 20<sup>th</sup> century Asia in the midst of demographic transition examined here.

#### **B. The Youth Bulge, "Momentum," and Youth-Focused Population Policies**

The future of population growth is largely a matter of future rates of childbearing, combined with present day population composition, future mortality being a relatively predictable and minor factor. Present and future fertility is often divided for program and policy purposes into wanted and unwanted components, the latter being the immediate target of family planning programs worldwide. The relevance of present-day population composition lies in the future population growth that is built in when that age structure reflects a past history of relatively high fertility. That future growth potential has been called "population momentum" (Keyfitz 1971). It has been shown that with both wanted and unwanted fertility roughly at today's levels, population momentum accounts for much of the anticipated future growth of population (Bongaarts 1994). Across much of Asia, where fertility is now well below the peak levels of the past, population momentum takes on additional significance. A recent exercise for the Philippines suggests that about two-thirds of the population growth from 1995 through 2020 will be due to momentum, with wanted and unwanted components of fertility accounting for the remaining third (Herrin and Costello 1996).

In concrete terms, momentum stems from a population having relatively large numbers of young persons, poised to mature into their childbearing years and boost childbearing and population growth substantially. This phenomenon can be called the "youth bulge," though we recognize that what has happened is not really an excess of youth so much as a deficit of infants and children due to recent fertility decline.<sup>8</sup> In terms of every-day observation there certainly is a youth bulge, which can amount to an almost one-third expansion of the age group's share of total population. If these relatively large cohorts survive through the years of childbearing and produce

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from 10 through 29 comprises 39.0 percent of the regional population.

<sup>8</sup>There may be a slight increase in the number of youth reflecting increased survivorship, but this is usually a minor factor by the time fertility transition begins to occur.

at roughly the current levels of childbearing in terms of both wanted and unwanted children they will have produced about one-third more births than a cohort of conventional relative size.

Based on these observations, certain policy proposals have been put forward. One core notion seems to be that for given wanted and unwanted fertility levels, or for assumed fertility limited to the wanted level, delayed first births and an older mean age at childbearing would reduce growth due to momentum. It is important in this to distinguish timing and volume aspects of fertility. The proposed delays would reduce the growth rate of population (and the momentum effect) even without reducing the fertility volume for a cohort.<sup>9</sup>

From this kind of analysis it is recommended that the bulge cohorts that are coming along be encouraged to reduce or delay their childbearing. It is suggested that this can be achieved by steps to encourage (A) marrying later, (B) increasing the age at first birth; and (C) extending interbirth intervals. The benefits of these changes are not limited to reductions of family size, delayed childbearing, and thus reductions in the rate of population growth. They will also *ceteris paribus* improve maternal and child health, another worthy aim of policy.

Extending interbirth intervals (approach C) has long been a goal of family planning programs designed to reach married couples. Later marriage (approach A) seems to be occurring spontaneously almost everywhere and is a core element of the general youth transition as defined here. There has been some policy consideration of induced marriage delay, and governments regularly raise their legal ages for marriage, but none of this seems particularly necessary as population policy.<sup>10</sup> The second policy goal, to increase the age at first birth, generally has been viewed as an automatic consequence of marriage delay, but it is recognized now that in a wide range of settings the reality is more complex than this because of pre-marital sexual exposure and more complex forms of marriage.<sup>11</sup>

### C. Youth and Risk

The proximate stimulus for the recent focus on youth takes the form of some striking statistics. As judged by a wide range of measures there are rising levels of risk-behaviors of many kinds, from substance abuse to premarital and generally unprotected sexual activity (Senderowitz 1995; McCauley and Salter 1995). Youth populations increasingly are linked to well known precursors of risk behavior such as disturbed family backgrounds, living away from parents or unsupervised urbanward migration. In the area of reproductive health and sexuality the evidence has been especially alarming, particularly when evidence of risky sexual behavior is combined with

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<sup>9</sup> Child spacing generally will reduce the volume as well, due to life cycle timetable pressures and intervening opportunities. These linkages are examined in Ruzika (1979); see the analytic framework given by Trussell, Menken and Coale (1979).

<sup>10</sup> Legal changes have been important in a few societies (on China see Hare-Mustin 1982), and every society has particular social sub-groups which such legislation would surely benefit.

<sup>11</sup> On Africa see Cherlin and Riley (1986), Gage-Brandon and Meekers (1993) and Meekers (1993); on Latin America see Morris (1988) and Singh and Wulf (1990); on Asia see Rindfuss and Morgan (1983) and Xenos (1990b, 1990c, 1997).

significant prevalences of HIV and other sexually transmitted diseases (Cleland and Ferry 1995; Cleland and Way 1994; Dyson 1990).

There is a general belief that young people today are confronted with an unprecedented range of behavioral choices, many of them involving considerable risk, at the same time that youth are receiving less parental guidance and community support and are taking on greater responsibilities such as for earning income. Thus, substance abuse is easier today than in the past, and in some ways is even encouraged by the public culture. The same surely can be said of sexual activity. In short, youth are at heightened risk because social and economic institutions are guiding and supporting them less, while demanding more. Moreover, the pace of youth-threatening change seems to have accelerated in the last decade or two.

Thus the intense interest recently in understanding how to reach youth with messages and programs, particularly youth in developing countries where young people and especially unmarried youth have not been a priority audience in the past. The literature on the problems of youth relating to reproductive health and reproductive risk, and on the interventions that can be most effective in reaching youth, is expanding rapidly (National Academy of Sciences 1997; McCauley and Salter 1995; World Health Organization 1993; Center for Communications Programs 1995). Central to strategic thinking in this area is the notion of reproductive risk and the fact that the total youth population can be disaggregated into risk categories (Lightfoot 1997; Bell and Bell 1993; Koontz and Conly 1994). In media and marketing-oriented thinking about reaching youth the term of choice is "segmentation." Segmentation can seek to distinguish fairly subtle lifestyle differences (Slater and Flora 1991), including such matters as connections to peer networks that provide most reproductive health information and can be influenced through peer education efforts (Flanagan and Mahler 1996; Fee and Youssef 1993), or links with health care professionals (Senderowitz 1997), or links with media messages (Flora, Maibach and Holtgrave 1995; Nare, Katz and Tolley 1996).

But the information base for much of the required market segmentation is scanty. The simple and therefore widely available disaggregations of the kind provided in the present analysis can be useful for marketing purposes. Age categories go some way toward identifying critical developmental differences (Austin 1995). Marital status certainly distinguishes quite different risk categories among youth. School enrollment marks a group of youth readily at hand for many kinds of information program (Birdthistle and Vince-Whitman 1997; Education Development Center 1996). Working youth are another segment which can be reached by carefully designed programs. Youth who are out of school (Sikes 1996), or not in the labor force, or not connected to either school or work institutions, represent segments which will be especially difficult to reach. The present analysis provides a detailed comparative description of the changing numbers comprising these key market segments or social categories of youth.

#### **D. A Unifying Theme: The Asian Youth Transition**

The forces of change seem to converge on youth, reshaping demographic and social compositional features of youth into a new and essentially universal pattern. We are calling this

transformation the *youth transition*.<sup>12</sup> The demographic and social core of the youth transition is rising numbers and proportions of youth in national populations, rising percentages of youth remaining single until well into adulthood, and rising proportions of youth enrolled in school. But a more complete outline of the youth transition incorporates a variety of other important changes which are important but less regular in pattern across societies (e.g., changing patterns of labor force participation) or systematic but very difficult to measure (e.g., long term decline in the age at menses).

In policy and programming circles there is a broad awareness of these changes, though not always of the whole complex of changes taken as a pattern. For example, discussions of pregnancy among the young and unmarried are very often introduced by reference to the historical trends toward earlier ages at menses or puberty and later ages at marriage, giving rise to an extended interval of "adolescence" (e.g., Senderowitz 1995). The rising proportions of youth populations in school are certainly no secret and in fact result from deliberate government action. Changes in youth labor force participation rates are more complex and various across countries, but there is a general tendency toward lower participation rates for young women reflecting their rising school enrollment rates, and the same to a degree applies to young men. But countries vary, especially when youth aged 20–24 are considered among whom participation has been rising in some settings and declining in others.

The analysis reported here provides a basic demographic assessment of Asia's youth populations, both retrospectively and prospectively, focused on a short list of very important compositional features: marital status, school enrollment status, and labor force status. Taken together these features encompass or are implicated in some of the most important changes facing Asian youth populations in the recent past and in the decades ahead. The present exercise serves to identify some key social groups for policy and provides a basis for anticipating which groups in each country of Asia will expand most and least rapidly over the next several decades.

## II. SOCIAL CHANGE AND YOUTH SOCIAL DEMOGRAPHY

The analysis that follows explores notable features of Asian youth social demography, traced by three important elements of social composition which have been changing rather dramatically in recent decades and are anticipated to change further in ensuing decades. Each of the three dimensions—marriage, schooling, and work—define sub-groups of the youth population widely recognized for their heightened exposure to risk-behaviors of various kinds. Among these sub-groups are the single, those no longer in school, and those in the labor force. As we will show subsequently, it is possible to consider certain combinations of these categories and thus bring attention to strategic sub-groups such as young women in the labor force, or young men who are single and out of school. The regional patterns of change in these dimensions are considered in

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<sup>12</sup>The term "transition" is invoked here in a very restricted sense, referring to a one-time, non-repeatable, and irreversible occurrence. Other transitions within this usage have been identified, among these the epidemiological transition (Omran 1971); the health transition (Caldwell et al 1990), the migration transition (Fields 1994), the mobility transition (Zelinsky 1971), the ecological transition (Bennett 1976), and the nuptiality transition (Smith 1980).

some detail in the main section of this report. Detailed regional and national estimates and projections are provided in accompanying appendices<sup>13</sup>.

#### A. Rising Percentages Single: 1950–1990

A considerable body of survey data has been examined for Asian countries showing an historic twentieth century shift toward later marriage (D. Smith 1980; McCarthy 1982; United Nations 1983; Singh and Samara 1996; Westoff, Blanc and Nyblade 1994), though demographic surveys generally focus on women while ignoring men and can describe only the last two or three decades. Census marital status distributions provide another set of indicators, and do so with considerable geographic and temporal coverage (Smith 1980; United Nations 1988, 1990; Xenos and Gultiano 1992; Jones 1997). The full complement of Asian census materials is examined here, expanding and updating the compilation first presented by Xenos and Gultiano.

The region-wide aggregation of national data (excluding China) indicates significant upward movement among males in the youth age range, and even greater upward shifts for young females (Figure 1). Among females aged 15–19, the Asian regional proportion single rises from 0.46 in 1950 to 0.72 in 1990, while among females aged 20–24 the proportion single rises from 0.16 to 0.31. In the older of these groups, the number of single women aged 20–24 was nearly double the number it would have been without the change in marriage pattern. Changes among males are less dramatic but in the same direction and, as we will see below, equally widespread.

There are systematic differences across the sub-regions of Asia, with East Asia leading the way followed by Southeast Asia and South Asia lagging behind (cf Appendix B, Figure B.1.a through e). Among all youth in East Asia (excluding China) the percentage single rose, between 1950 and 1990, from 70 to 91 percent among females and from 87 to 96 percent among males. In Southeast Asia, all female youth saw a rise in the percent single from 45 to 66, while among males the increase was from 78 to 85. In South Asia the corresponding levels are much lower but the absolute changes are even greater. Thus, for South Asian female youth the percentage single rises from 18 to 42 percent, and among males it rose from 56 to 77 percent. There are important variations among the countries within each sub-region which are depicted in Appendix C (Figure C.1.a through q).

It is important to appreciate the numerical importance of these marriage trends from a programmatic or audience analysis standpoint. For example, between 1950 and 1990 the absolute number of single female youth rose across Asia (excluding China) from 22 million to 82 million. Somewhat more than half of this change was due to the rise in percents single, without which there would have been 31 million fewer single female youth. Arithmetic of the same kind applies for each country and at more local levels where goal-setting and resource allocation routinely take place.

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<sup>13</sup>Appendixes A, B, C, D, and E are available on request from East-West Center, Program on Population, fax: (808) 944-7490, email: poppubs@ewc.hawaii.edu.

## **B. Rising Percentages Enrolled in School: 1950–1990**

The global, long-term extension of school enrollment from childhood into the adolescent years has affected the youth population of Asia, placing rising proportions in school and diminishing the proportions out of school (Meyer and Hannan 1979; Meyer, Ramirez and Soysal 1992; Benavot et al 1991). It is possible to assemble hard evidence of this transformation, but not without considerable difficulty. Benavot and Riddle (1988) managed to assemble enrollment ratios for functional age groups spanning the period 1870–1940, and we have taken their lead, compiling or estimating enrollment ratios and percents enrolled for the youth age groups and by sex for the period from 1950 onward through 1990. Census or survey percents enrolled have been used where ever possible, but it has also been necessary to estimate these percentages from the more widely available enrollment ratios. Our regional estimates for the 1950–1990 period are depicted in Figure 2. Sub-regional patterns and projections to 2025 are given in Appendix B (Figures B.2.a through e) and national results are in Appendix C. Region-wide the shift is small for each sex among those aged 20–24, and the enrollment level reaches only 12 and 6 percent by 1990 for males and females. But the changes are very substantial at ages 15–19, where the female percent enrolled went from 14 to 26 percent while the male percent enrolled rose from 23 to 39 percent.

The sub-regional contrasts are marked for both sexes, especially at ages 15–19. South and Southeast Asia saw similar upward movements in enrollment rates among males ages 15–19, but East Asia witnessed much greater shifts. The average male enrollment level in 1950 exceeded the level achieved by either South or Southeast Asia by 1990. Female patterns at ages 15–19 are somewhat different. East Asia shows the highest levels and the greatest upward movements by far, but the levels for South Asia females start and end low; and, in Southeast Asia the female enrollment percentage exceeded the male by 1990. At ages 20–24 all levels are of course very much lower. It is notable that enrollment levels rise to 10–15 percent in all sub-regions and for each sex, except that enrollment among the older age group of East Asian youth is at a higher level (24 percent) for males.

## **C. Shifting Percentages in the Labor Force**

Changes in proportions single and enrolled in school vary across countries but there is an underlying common pattern—a smooth upward shift over time. Proportions in the labor force, in contrast, vary much more markedly among countries and between males and females as well (in both instances, sometimes trending upward and sometimes downward). For the moment we discuss only the Asia-wide trends (Figure 3) and sub-regional trends, which are quite similar (Appendix B, Figures B.3.a through e). National trends are shown in Appendix C. Participation rates (proportions in the labor force) decline over time for each sex and age group. This is most dramatic among those aged 15–19 of each sex, among whom substantial proportions are enrolled in school by 1990. There is one exception to the downward pattern—females aged 20–24 in East Asia. There the labor force participation rate held steady or even rose slightly.

Before examining these patterns in greater detail, and introducing national patterns and cross-national variations, as well as projections of all these trends forward to the year 2025, we turn to a brief explication of the estimation methodology.

### III. THE METHODOLOGY IN BRIEF

This section offers a brief description of the estimation methodology.<sup>14</sup> The goal of the research is to identify the broad outlines of a regional youth demography, including common features and national differences, doing so within an empirical framework that assures a level of comparability among countries, allows the aggregation of countries into regional patterns, and at the same time the disaggregation of the youth cohort into certain important social-demographic sub-groups. Available data sources (cf Appendix D) have made it possible to produce estimates at an acceptable level of accuracy for seventeen countries over the historical period 1950 through 1990. These long-term trends have been complemented by projections from 1990 to the year 2025. Throughout the exercise we have identified the youth cohort to encompass persons aged 15 through 24, an arbitrary but common and useful definition as noted earlier.

The empirical base is estimates of the population in five-year age groups by sex, as produced by the United Nations Population Division for each country, for quinquennia from 1950 through 1990 (United Nations 1994b, 1995), combined with projections thereafter until 2025 as prepared by the World Bank (Bos, Vu, Massiah and Bulatao 1994).

We sought the same broad geographic coverage, and the same disaggregation into sexes and quinquennial age groups, for social classifications within the youth population. Available data allow us to disaggregate the single from the ever-married, those in versus out of school, and those economically active (in the labor force) or not. These are not particularly subtle classifications, but they are important ones which delimit major dimensions of both temporal change and cross-national variation among youth. All these classifications have been reconstructed from existing data, in so far as possible for the period from 1950 through 1990. The resulting historical series on proportions single were then projected into the future using a methodology which was developed for the present purpose. The historical series on school enrollment was projected to 2025 on the basis of the future enrollment ratios given in UNESCO's most recent round of enrollment ratio projections (UNESCO 1993). The historical series on the labor force was projected to 2025 by utilizing economic activity rate projections prepared by the International Labor Office (1986). With all three series we have not developed alternative projections since they would be highly speculative in any case.

While the marital status dimension, enrollment status, and labor force status are each routinely classified by age group and by sex, cross classifications among marital, enrollment and labor force statuses are rarely available, certainly not in time series for any country. In this report we present selected cross-classifications identifying youth sub-groups of programmatic importance, though doing so has required certain assumptions as outlined below.

It cannot be emphasized too strongly that our discussion of the social composition of youth populations depends on the quality and reliability of the data employed, on our procedures for screening data and adjusting for discrepancies and gaps in the information, and also on the

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<sup>14</sup>Further detail is given in the accompanying electronic spreadsheets containing all the basic calculations and necessary adjustments to the data.

assumptions we have employed to identify the categories in the overall social taxonomy we are most interested in. Our objective is scenario-building rather than precision. The stress is on long-term change and on international and male-female comparisons. To achieve the comparative objective, and for ease of presentation, all results have been interpolated to conventional quinquennial dates. In the attached appendices decennial rather than quinquennial intervals are shown.

#### A. **Estimated Percents Single**

Percents single were calculated from the marital status distributions available in published census sources. A total of 132 censuses were examined and marital status distributions were extracted for a total of 974 census dates across the whole of Asia. The temporal as well as geographic coverage of percents single in the censuses is excellent. The 17 countries examined in this report have, cumulatively, 688 years of experience from 1950 to 1996, and 94 percent of this time is encompassed by the 132 national censuses consulted (cf Appendix D, Table D.1). It was necessary to extrapolate backward for a total of 38 years to reach the desired 1950 starting point (the major instances being Indonesia and Nepal for which the first available marital status data are in 1961). These marital status data were presented previously by Smith (1980) and Xenos and Gultiano (1992), and these sources report the adjustments necessary to bring the data into a common form.

#### B. **Estimated Percents Enrolled**

The most widely accessible form of internationally comparable schooling data is as enrollment ratios, in which the numerator is the number for a particular age and sex category recorded as enrolled, and the denominator is the total of persons in that age-sex category. Such sources as the *UNESCO Statistical Yearbook* present these ratios by sex and functional age group (corresponding to schooling levels—usually ages 6–11, 12–17, 18–23) for many countries. Though useful, enrollment ratios are often influenced by administrative and other factors. For some countries these ratios overestimate the actual enrollment of the age groups and can even exceed unity. Percents enrolled by sex for quinquennial age groups (the age groups for which most other international data are presented) are provided by member countries to the United Nations Statistical Division and appear in the annual *Demographic Yearbook*. These data generally are drawn from census tabulations wherein the numerators are persons reported as enrolled during the census year. These percents enrolled are most suitable for the present purpose but are not universally available. We have extracted percents enrolled by age and sex from 73 national censuses cumulatively encompassing 439 years of experience. It has been necessary to extrapolate for a total of 176 additional years to reach the desired 1950 starting point (cf Appendix D, Table D.1).

Census percents enrolled do not always form a consistent, plausible series. Data quality is an issue, as are definitional and administrative changes. In light of these problems the considerable body of percents enrolled has been supplemented by national enrollment ratios by age and sex as provided by the UNESCO Division of Statistics in connection with its effort to project the future path of enrollment ratios in each country (UNESCO 1977, 1983, 1993). The UNESCO compilation provides enrollment ratios by sex and functional age group (ages 6–11,

12–17, 18–23), obtained by combining administrative enrollment figures with population estimates. For the present exercise we have used the UNESCO enrollment ratios for functional age groups as a basis for estimating percents enrolled in quinquennial age groups, using prediction equations estimated separately for each sex and age group from cross-national data for all the countries of Asia, and all their census dates, for which both enrollment ratios and percents enrolled could be found.<sup>15</sup> As Appendix D, Table D.1 indicates, it was necessary to use these predicted percents enrolled rather than direct percents enrolled for only three countries: Myanmar, the People's Republic of China, and Nepal.

### **C. Estimated Percents in the Labor Force**

We have utilized a standardized set of national estimates and projections of the labor force and labor force participation rates by age and sex prepared by the International Labor Organization (1986). This is the second revision of national projections presented previously (International Labour Organization 1971, 1977) and draws on the 1980 round of censuses and labor force surveys carried out through that year. Estimates were produced for 1950, 1960, 1970 and 1980, and projections were carried out for 1985 and thereafter through 2025. National input data were standardized where necessary as to concepts, scope, coverage and age classifications. Special estimation procedures for certain Asian countries with data deficiencies are described in the ILO report (1986, Vol. VI, dated 1990, pp.15ff, Methodological Supplement). We have combined the ILO's estimated national participation rates with the United Nations Population Division's population estimates (United Nations 1994) and the resulting estimated numbers in the labor force were aggregated into regional totals. These, in turn, were applied to regional population estimates to yield regional participation rates.

### **D. Projections to 2025**

The World Bank population projections incorporate mortality and fertility assumptions applied in a cohort-component framework (Bos et al 1994). Mortality, indexed by life expectancy at birth, is allowed to improve along a curve defined by a logistic function; quinquennial improvements are smaller at higher initial levels. Age and sex patterns are based on the Coale and Guo (1989) extended life tables. Fertility is indexed by the Total Fertility Rate (TFR), the trajectory of which is different for countries already in fertility decline by 1990 versus those which are not. For the former the TFR is reduced so that the Net Reproduction Rate (NRR) descends to replacement level by the year 2030 at quinquennial rates determined by previous rates of change. For the latter, TFR decline toward a replacement level NRR begins once life expectancy (male and female combined) has reached 50 years. TFR's invoke different age patterns of fertility depending on the level of the TFR. At six or higher, an early-fertility pattern is used, and at TFRs of three or less a late-fertility pattern is used, with interpolation between these for TFRs between three and six.

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<sup>15</sup>The estimation equations are given in the accompanying electronic spreadsheets. Comparison of the regression-based and interpolated census-based percents enrolled suggests a high level of consistency for most countries.

These projections presume that all societies will undergo fertility transition over the next two or three decades, provided they experience mortality transition. They are not overly optimistic as to the timing of fertility decline and are similar in many aspects to the corresponding United Nations Population Division projections (United Nations 1994, 1995).<sup>16</sup> It should also be noted that the assumed shift from early to late age-patterns of fertility is consistent with the Asian experience of steadily rising percents single by age and provides a broad compatibility with our projections of rising percents single.

Projections of percents single rely on the essentially uniform pattern of rising percents single witnessed throughout the region in recent decades. Japan has led the way during the last two decades before 1995 and by that year had very high percents single at ages 15–19 and 20–24 for each of the sexes.<sup>17</sup> Regression relationships between each percent single and the natural log of GNP per capita indicate that the entire set of Asian populations is moving along the same upward curve of percents single as a function of economic level. As a first approximation to a reasonable scenario for 2025, we have presumed that Japan's percents single would rise no further, while other societies would move toward the Japan level over the 30 year projection period. Intervening estimates were fitted using a logistic function. It must be stressed that this is but one possible scenario among many, but it seems a useful scenario to work with for the present purpose. We should note also that the nuptiality and population projections are not linked. That is, the age-specific fertility rates implied by each quinquennial TFR and fertility age pattern assumption were not taken into account in projecting percents single. There is, however, the broad compatibility already noted in that the World Bank projection series incorporates a progressive shift toward a later age at childbearing.

Projected percents enrolled at ages 15–19 and 20–24 for each sex were obtained from corresponding projections of enrollment ratios prepared by the UNESCO Division of Statistics (UNESCO 1993). In the UNESCO methodology enrollment ratios are estimated or projected for each sex and for both grade levels (primary, secondary, tertiary) and functional age groups (6–11, 12–17, 18–23). First the trend in the enrollment ratio at ages 6–11 is extrapolated, then distributed among grade levels. Results for other age groups are obtained using appropriate transition coefficients. Projections are obtained using a logistic function. Further detail is not provided in the 1993 report, but there is discussion of the data shortcomings that can affect such calculations. In particular, it is noted that African enrollment ratios were much lower than previous projections had indicated. The pattern of enrollment by sex and by age group for Asian countries seems generally reasonable, but there is no sound basis for evaluation of the procedures beyond this. The UNESCO enrollment ratios for functional age groups were transformed into percents enrolled for quinquennial age groups on the basis of regression relationships between the two kinds of estimate over countries and years where both are available.<sup>18</sup>

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<sup>16</sup>Of the 16 countries we can compare (Taiwan excluded), the World Bank projection of the total population in 2025 exceeds the comparable UN projection in six cases and are lower in ten cases. The average difference is 6.8 percent.

<sup>17</sup>For females the percents single in 1995 were 98.8 (15–19) and 86.5 (20–24); the corresponding male percents were 99.1 (15–19) and 92.3 (20–24).

<sup>18</sup>The regression equations for each sex-age group are given in the electronic spreadsheets.

Projections of percents economically active were taken from the ILO series by country prepared last in 1986 (International Labour Organization 1986). The methodology builds on the decennial series of activity rates over 1950–1980 that was estimated for each country, combined with estimates of the sectoral distribution of the labor force over the same period. Following the procedure in previous ILO labor force projections, projections by country were carried out based on the observation that national configurations of age-sex specific participation rates reflect the national sectoral distributions of labor. The sectoral distribution of labor is indexed by a single criterion variable, the percent of the economically active male population engaged in agriculture (PEAMPEA). The configuration of age-sex specific participation rates is assumed to shift according to the relationship between these rates and PEAMPEA as estimated over the period 1950–1980. The future trend in the PEAMPEA is taken to continue the relationship between the initial level of PEAMPEA and change over a decade, as observed over the 1950–1980 period. Overall this is a parabolic relationship with the greatest changes occurring when PEAMPEA is at intermediate levels.

The projections of national youth transitions given in this report combine these population, labor force and enrollment projections. It must be emphasized that these several projection exercises were not conducted in a unified fashion, being the products of different international agencies and carried out for their own somewhat different purposes. Compatibility of the series must be assessed at the country level, since the two UN agencies do not always use the same definition of sub-regions. We find that across the projection period the sum of percents enrolled and in the labor force initially exceeded one hundred very slightly in only two countries, Hong Kong and Singapore, where both percents are very high and few youth are not either at work or in school. In these cases the percents enrolled were adjusted slightly.

Another important caveat is that the social data for the People's Republic China, both estimates and projections, are no doubt less valid than those for other countries. Female percents single are not available in a census series for China, but the 1982 national survey with its high level of data reliability and validity and extremely large sample size has made retrospective estimation of demographic parameters possible (Coale 1984). Retrospectively estimated percents single for quinquennia back to 1955 were taken from Smith and Wei (1986). China data for male nuptiality are absent before 1990. The 1990 percents single for males were simply extended back to 1950. Data on labor force participation and enrollment rates are very scarce for earlier decades. Because of the resulting lack of precision, and because of China's size relative to other countries, the East Asia sub-region is usually shown as an aggregation of East Asian countries excluding China. China results are shown separately where appropriate.

#### **IV. THE DEMOGRAPHY OF YOUTH TRANSITION**

This section focuses on the demographic core of the youth transition. Once we have established the important demographic features of the youth transition we can turn in subsequent sections to the social dimensions. In the following sections relevant demographic changes across Asia from 1950 through 1990 are reviewed briefly, along with projections of these indicators through 2025. Basic data are presented in the first two panels of Appendix A, Table A.1, provided for each of the 17 countries, each sub-region, Asia as a whole (17 countries, including China) and Asia excluding China. Demographic indicators derived from these basic results are given in Appendix

A, Tables A.2 (population growth rates for age-sex specific groups) and A.4 (sex ratios for age-specific groups).

Considering first all of Asia, we can describe an historical sequence occurring over the last half of the 20<sup>th</sup> century and the first quarter of the next. Asian youth numbered 239 million in 1950 but had expanded by 2.4 times to 572 million by 1990, a span of 40 years. That underlying annual rate of growth (2.18 percent) was in line with the underlying annual growth of total population (2.03 percent) over the same period. Between 1990 and 2025, according to the World Bank projection, the Asian populations considered here will grow by 39 percent to 3,897 million, but the youth population will grow by only 25 percent to 610 million over the same period. Youth's share of total population was 18.9 percent in 1950 and 20.5 percent in 1990, but will decline to 14.9 percent by 2025. The peak youth population in absolute terms will be reached between 2010 and 2020 and decline thereafter. The growth rate of the youth population had diminished somewhat earlier, and with it youth's share of total population.<sup>19</sup>

What does not emerge clearly from these regional data is the link at the national level between demographic changes among youth and society-wide fertility and mortality declines—the demographic transition. The features we wish to highlight are best seen by focusing on one society. The most important changes and their sequence through time are displayed in Figure 4 for the Republic of Korea. The same diagrams for the other countries are given in Appendix E. Korea has been chosen because it illustrates especially clearly the historical sequence of youth demography driven by the demographic transition and particularly by the timing of fertility decline. Korea's high birth rate of the 1950s began a dramatic transition downward starting early in the 1960s<sup>20</sup>. The death rate had plummeted earlier following the classic contours of demographic transition. According to United Nations estimates (United Nations 1995:788) the Total Fertility Rate (TFR) was 6.07 in 1955 when the Net Reproduction Rate (NRR) was 2.28, but the NRR had dropped below the replacement level by 1990, less than thirty years after fertility reduction had begun.

The demographic youth transition among Korean youth followed in lock-step with its demographic transition. The growth rate of the youth population rose dramatically as the large-pretransition birth cohorts reached the youth ages under conditions of low mortality. By the time the youth growth rate had peaked by 1975 at 5.5 percent, the youth share of the total Korean population had risen, from its level of around 17 percent in the 1950s and 1960s to its peak at 23

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<sup>19</sup>Since China often will be shown separately in this report, it is worth noting the same results for Asia excluding China. There were 138 million youth in 1950 but this increased by 2.12 percent annually to reach 322 million by 1990. The World Bank projection has the youth population of Asia excluding China at 423 million by 2025 reflecting a much reduced youth population growth rate. The youth share of total population averaged close to 19 percent from 1950 through 1990 but would decline to 16 percent by 2025.

<sup>20</sup>We use as onset dates for sustained fertility decline the estimates suggested by Bongaarts and Watkins (1996), whose criterion was a 10 percent decline in the Total Fertility Rates given in United Nations (1994). Their estimates have been supplemented by estimates for Japan, Taiwan, Brunei and Pakistan. Japan's date was taken as 1925, following Kobayashi and Tsubouchi (1979). Taiwan's was taken as 1965 based on data presented in Chang, Freedman and Sun (1981). Brunei's was taken as 1965 based on data in United Nations (1994). Pakistan's was taken as 1990 based on Total Fertility Rates used in the World Bank projections (Bos et al 1994).

percent in 1980. During the 1970s the youth population expanded rapidly, and it continued to expand though less rapidly during the 1980s. By 1990 the youth population had peaked in absolute terms and began a long decline. The World Bank projection for the year 2025 suggests a youth share of only 12.4 percent, a youth population growth rate of -0.6 percent, and a youth population only 75 percent of the number at its peak in 1990.

A generalized diagram of stages is given in Figure 5 with illustrative dates taken from the Korea experience. The sequence of events just described for Korea and outlined in Figure 5 has been or will be experienced with some variation by every society going through the demographic transition, since it is the necessary outcome of the underlying formal demography linking changes in population size and age composition with trends in fertility and mortality (migration for the moment is left out of the picture).

The timing of these events for the other countries reflects the timing of their national fertility transitions. A summary of the key dates for each country is shown in Table 1. Fertility decline began in the early-1960s for the vanguard countries: Singapore, Hong Kong, Korea, and Sri Lanka. Japan had of course experienced rapid fertility decline long before, in the 1920s (Kobayashi and Tsubouchi 1979). The vanguard countries were followed over the next two decades, in chronological order, by the Philippines, Brunei, Taiwan, Malaysia, Thailand, China, Indonesia, India, Myanmar, Bangladesh, Nepal and Pakistan.

The peak youth growth rate follows the onset of fertility decline by a decade or so, and the peak youth share follows by about 20 years. But, there are important variations in the shape of these transitions, and in how distinctly the youth transition shows up in the data. The shifts are greatest, most distinct, and the core demographic features of the youth transition most noticeable when:

- Fertility levels were initially high
- Mortality levels have already declined significantly, so there is rapid population growth
- Fertility decline is abrupt and rapid and the decline is to a much lower level
- Other factors are not sufficient to disturb the pattern<sup>21</sup>

Some societies are making the transit with little disturbance in evidence, while for others the demographic youth transition is distinct, noticeable, perhaps even a little traumatic in its impact. Among the demographic features of the youth transition which might stand out are the following:

- A high peak youth share, relative to pre- and post-peak levels, followed by a sharp decline
- A sharp relative increase in the youth population growth rate, followed by a sharp relative decrease in this rate

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<sup>21</sup>For example, history has provided Japan with a complex demographic transition including a two-phased fertility decline, and its demographic youth transition is distorted accordingly (Table 1). Hong Kong's youth demography (especially its peak youth share in 1950) reflects its historical periods of very substantial in-migration, a large part of which was comprised of youth.

Figures 6 through 10 display our 17 Asian countries with respect to the timing of fertility decline and several features of the ensuing youth transitions. This set of Figures prompts several important observations:

- The peak youth share is experienced about 20 years after the onset of fertility decline; that is, after the numbers of infants and children have been reduced, but before the youth population has been similarly affected (Figure 6)
- For early-decline countries the 1970s were a time of high youth proportions, which peaked in the 1980s (Figure 6)
- For countries with fertility declines beginning in the 1970s and thereafter, peak youth shares have not yet been experienced but are projected for the 1990s or the first decade of the next century (Figure 6)
- Somewhat later the national youth populations reach their peak absolute numbers and begin to decline (Figure 7). The time lag from onset of fertility decline to onset of decline in youth numbers varies widely (compare Figures 6 and 7). Generally, countries with relatively early fertility transitions have shorter durations from the onset of fertility transition to reaching the peak number of youth. Conversely, countries with relatively late fertility transitions generally take longer to reach their peak numbers of youth.
- There is a clear association between the magnitude of the youth share at its peak and the peak growth rate of the youth population; across 17 countries the Pearson correlation coefficient is 0.63 (Figure 8)
- Countries vary as to how precipitously the youth share declines from its peak level (Figure 9)
- Countries vary as to the time elapsed between the peak youth share and the peak youth number (Figure 10)

It is apparent that the countries are arrayed along a dimension involving the details of their fertility transitions and of their demographic youth transitions (Table 2). While the dates involved certainly cannot be precise, they do convey an essential relationship between fertility transition and demographic youth transition. One group of countries, comprised most evidently of Taiwan, Korea, Hong Kong and Singapore, experienced early and rapid fertility declines driven by rapid economic development as well as successful programs of fertility control. This prompted sharply defined, brief, but numerically important demographic youth transitions. In these countries the whole sequence from the onset of fertility decline to the beginning of absolute decline in the youth population took no more than 21 years. China's fertility decline commenced a few years later but it also had a very rapid demographic youth transition. Certain other countries—notably Indonesia and Thailand—have experienced rapid fertility transitions more recently, accomplishing this at somewhat lower levels of economic advance. These countries are also witnessing very distinct and fairly rapid demographic youth transitions, but they have fewer economic resources for social programs, and less rapid rates of absorption of youth into their national economies. A third group of countries are in South Asia—Sri Lanka, Bangladesh, India, Nepal and Pakistan. They are characterized by late-starting, and relatively slow fertility declines taking place at relatively low levels of economic advance. The demographic youth transitions in these countries are much slower and less distinct. Their youth shares are not rising to very high levels, and their youth growth rates are not as high as well. Myanmar and Malaysia are

experiencing even slower demographic youth transitions, and Brunei and the Philippines are in the midst of very slow demographic youth transitions.

Countries with relatively slow, less abrupt transitions, nevertheless produce large proportional expansions of their youth populations. From a policy standpoint, there is a very clear practical tradeoff in these results. Especially rapid fertility decline is associated with especially quick and well-demarcated demographic youth transition. Peak youth numbers and then declines in youth numbers are reached quickly. However, during a rapid demographic youth transition process the youth share and the rate of growth of youth numbers reach relatively high levels. The first situation might be viewed as positive from a social problem standpoint (though not from certain other perspectives—for example, for managing labor markets). The second situation avoids extremes of youth growth and youth shares, but nevertheless allows considerable growth in the youth population before the whole transition process has been completed. The largest numbers in column 3 of Table 2 represent a considerable magnitude of population momentum.

These then are the broad contours of the demographic aspect of the youth transition. This youth bulge sequence must be seen in the context of the overall transformation of age composition in the course of demographic transition. There are two other, related shifts of age composition which are better known: the decline in proportions in infancy and childhood, and the rise in proportions in old age. Both of these, the diminished stock of children, and the rise of old age, are permanent features post-transitional society, long-term structural changes, while the youth bulge is a temporary phenomenon. But, temporary as it is, the youth bulge is difficult to ignore in the short run. This is all the more the case when the changes in numbers of youth are complemented by changes in social composition. Particular sub-groups of youth can expand very rapidly indeed, as we will now see.

## V. THE SOCIAL CORE OF THE YOUTH TRANSITION

It is beyond the scope of this exercise to review twentieth century social change comprehensively. However, many of the most dramatic changes are closely associated with one or more of the three social time series assembled for this report. They can be seen as a demographic and taxonomic framework within which to consider many other changes.

The youth transition as defined here comprises certain core changes, so called because they occur in every population once and in a very similar fashion. The demographic core of the youth transition was described in the previous section. The social change aspects of the youth transition include a combination of core social changes and certain other changes which, though very important, may not occur in every context or may occur very differently in one setting versus another.

Figure 11 is a schematic depicting elements of the youth transition. At the center is the *transitional demography* described above. The next circle outward includes the *core social transitions*—universal, common experiences of one-time, non-repeatable, irreversible transformation among youth across the region. The outer circle encompasses *other social demography*, more varied across populations, not true transitions, but of direct relevance and importance nevertheless. One very important element here, rates of economic participation, have

been reconstructed for the full range of countries and dates. It is not considered a core social transition because, as we will see shortly, changes in labor force participation do not follow a simple path—they are not one-time, nonrepeatable, irreversible occurrence. There are major differences, even differences in direction of change, among the countries, sexes and age groups of interest.

There are many other elements of social change among youth which might well be drawn into this concept of youth transition. Changes among youth are after all embedded in a much deeper and broader pattern of systematic social change. Many of these elements are excluded from the framework presented here because measurement across dates and countries is not possible. Some of these have been identified in Figure 11 and placed outside the largest circle, indicating their importance but also our inability to depict trends and differentials adequately. We might easily include many kinds of change in this category, but have avoided this. One such change dimension—the sexual revolution—has been included because of its very great importance, and because so much effort in recent years has gone into improving measurement. The indicators suggested are the percent of youth reporting premarital sex, and the percent reporting having visited a commercial sex worker. Another change, the decline in age at menses, is a universal feature of youth and bears directly on the core of the youth transition, notably on marriage timing (Buck and Stavraký 1967), but we lack the measures required to add changing menses timing to our empirical framework (Van der Eng 1993). Other changes of similar importance are also omitted. This includes, among others, home leaving (in our social composition framework, the percentage no longer living in the parental household).<sup>22</sup>

It is clear that the youth transition encompasses a great deal, but for the moment we focus on that which can be measured adequately and comparatively. In the following sections we look in additional detail at changes across the region in percents single and percents enrolled in school among youth of each sex. Then we look at the more diverse changes occurring to labor force participation rates among youth. As before, the stress is on regularities and comparative observations rather than national-level detail.

#### A. The Shift to Later Marriage

The well-documented trend toward later marriage has occurred primarily because percentages single (never married) within the youth age range have risen dramatically. Evidence of this for Asia as a whole was presented earlier. It is worth emphasizing two aspects of this pattern drawing on the national trends shown in Figures 12.a-c. First, the pattern is very widespread; it is, in fact, a uniform and universal trend at the national level across Asia. Second, it has occurred for both sexes, though somewhat more markedly for females than males, leading to some convergence of male and female percents single, mean ages at marriage, and the like.

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<sup>22</sup>This clearly has a direct bearing on the delimitation of risk groups among youth. Recent research indicates important cross-national differences (Yi et al 1994) and suggests that home-leaving is occurring earlier even as marriage is occurring progressively later (Johnson and DaVanzo 1998). If the latter finding is confirmed for other societies we might wish to include progressively earlier home-leaving as a core social feature of the youth transition. This would also imply that as the gap between menses and marriage widens, more or the intervening time is being spent living away from parents.

This dimension of social change has important ramifications for the Asian societies, most of which are well outside the scope of this discussion. We will, however, examine certain striking implications even at the relatively superficial level of demographic composition among youth. As a preliminary, it should be observed that the upward movement of percents single has been associated closely with national trends in GNP per capita (Figure 13). These relationships are the topic of on going research. Here we observe only that the effects of GNP per capita on percents single have a non-linear form due to the upper boundary on percents single. This is seen for both sexes in the 15–19 age group, and especially for younger males. That is, even at relatively low levels of GNP per capita, many Asian countries had achieved near-universal marriage delay to beyond age 19. A practical implication of these patterns is that rising percents single have occurred relatively early in the development process and therefore are a significant feature of the youth transition, well before as well as during the period of youth bulge.

A few significant points will be highlighted in this discussion, drawn from the basic results given in Appendix A, Table 3 for each of the countries. We introduce these points using South Korea as an illustration and referring to Figures 14 and 15. First, the nuptiality changes in every instance supplement the demographic youth transition in adding to the numbers of single youth from year to year throughout the youth transition, until the last stage of the transition when the youth population is declining and the proportions of youth who are single can rise no further. In South Korea, the female youth population expanded by 2.3 times between 1950 and 1990, from 1.87 million to 4.24 million. At the same time the percentages single among young women rose dramatically, from 73 to 99 percent among those aged 15–19, and from 16 to 81 percent among those aged 20–24. The result was that the population of young single women in South Korea rose by 4.4 times over the 1950–1990 period, from 871 thousand to 3.83 million. Second, the convergence of female and male nuptiality patterns in South Korea transformed the relative numbers of single males and single females (Figure 15). In 1950 there were about three single young men for each two single young women. By 1990 that sex ratio was virtually in balance.

Similar observations apply to each of the other countries. Single population growth rates are sometimes extremely high, both relative to total youth growth rates and in absolute terms (exceeding five or even six percent per year). This is most uniformly so in South Asia (except Sri Lanka where marriage delay has occurred through the 20<sup>th</sup> century), but also in Singapore in the 1950s and 1960s and in Brunei in the 1960s and 1970s. For some countries such as those the very rapid growth of single youth is confined to one or two decades, while for other societies moderately rapid expansion of the group was experienced over an extended period of time. A few societies (e.g., the Philippines and Sri Lanka) never experienced extremely rapid growth of the single population because their shifts to later marriage occurred slowly over an extended period.

## **B. The Rise in School Enrollment**

The upward trend of school enrollment shares some features with the trend in percents single. It has been occurring in all the countries, and has been most noticeable among females, resulting in a degree of convergence between male and female percents enrolled. Just as with nuptiality trends, social norms seem to be dictating, at least thus far in the transformation, that male levels be higher. These points can be seen in the national trends in percents enrolled, given in Figures 16. The upward movement is greatest in East Asia and least in South Asia, greater for females

than males (particularly in Southeast Asia), and of course most notable at ages 15–19. Though enrollment at ages 20–24 stays low, there is a notable upward trend in East Asia. Figure 17 indicates the underlying link between enrollment levels and GNP per capita. There are strong relationships for each sex in the 15–19 age range.

The growth rates of enrolled versus total youth populations are compared graphically in Figure 18 for each country, and we find major national and regional differences. Rapid growth of the enrolled youth population, well in excess of the growth of the total youth population, was experienced across East Asia until recently, and enrolled youth growth rates reached very high levels in much of Southeast Asia over the last two decades or so. Recent policy and long-term trends are both clearly reflected. For example, compare the rates for the Philippines, where educational expansion began early, with the rates for Thailand where educational opportunity did not open up to large numbers of youth until the 1960s, or with Myanmar where that opening up has yet to occur. Within South Asia there are important national contrasts. Bangladesh and Nepal had very rapid rates of growth of their enrolled youth populations, while India and Sri Lanka had rates at much lower levels.

Figure 19 shows the trend in the sex ratio among those enrolled in school for countries in the three sub-regions of Asia. Clearly reflected is the very severe sex differential in educational opportunity early on, and the gradual reduction in that more recently. Nevertheless, the enrolled sex ratio in 1990 is still severely unbalanced in these countries.

Certain observations can be made which parallel those concerning nuptiality. First, the swelling numbers in school supplement the rapidly rising numbers of youth. Staying with the South Korea example, and considering both sexes combined, the number of youth rose, between 1950 and 1990, from 3.8 million to 8.8 million, an increase of 132 percent. Over the same period the number of youth enrolled in school rose by 600 percent, from 0.6 million to 4.2 million. While that surely placed heavy demands on the educational system, the same changes held down the number of out-of-school youth, which rose only 44 percent from 3.2 million to 4.6 million. This often-problematic segment of the youth population was kept numerically in check because of enrollment trends and despite of Korea's very abrupt demographic youth transition.

As one of the vanguard countries with respect to fertility decline, South Korea has already begun to illustrate the dramatic demographic, compositional changes that result from completing the youth transition. Almost immediately after 1990 South Korea's youth population began to shrink in size and will, according to the World Bank's projections, decline from 8.8 million in 1990 to only 6.5 million in 2025. Moreover, despite projected increases in enrollment rates (slight, since Korea's enrollment rates were already quite high by 1990), South Korea's in-school youth population is projected to decline from 4.2 million in 1990 to 3.8 million in 2025. The out-of-school youth population will decline even more rapidly, from 4.6 million to only 2.7 million.

### C. Changes in Labor Force Participation

International comparisons of labor force participation rates have not often focused on the participation levels of youth,<sup>23</sup> but since nearly all countries include ages 15 and over (and often younger) in their labor force statistics, general studies of international labor force participation rates cover our youth age groups. Durand's comprehensive study (Durand 1975) relating the level of economic development to participation rates in national censuses from 1946 to 1966 gives us a dated but still very helpful point of comparison. Durand arrayed 58 countries along a dimension from low to high levels of economic development and found somewhat different patterns for males and females, and for younger versus older youth. The participation rates of younger male youth declined steadily as development level increased, while the participation rates of older male youth changed little. Among females there was a similar U-shaped pattern for both age groups. That is, female youth participation in the labor force declined with economic development at first and then, from a moderate level of development onward, rose steadily. Considering his data by region, Durand also noted that the "South and East Asian" countries he examined were "diverse" compared with most other world regions.

The diversity across Asia that Durand notes extends to its youth population as much as to its population above age 25. The trend in labor force participation rates for males and females in our two youth age groups is shown in Figure 20 for sub-regions of Asia and for individual countries. Asia has followed the global trend in its declining male labor force participation rates in the youth age groups. Asia's participation rates for male youth are actually somewhat below the world levels, perhaps reflecting the generally higher school enrollment percentages in Asia. Female participation rates in the youth ages are also below the world levels for the same reason. However, three further observations are required. First, near-zero participation rates are rare: they are found only in Pakistan and Bangladesh. Second, each of the Asian sub-regions displays a diversity of levels. Third, among females aged 20-24 the rates do not decline by much and across East Asia (and in Singapore) they rise somewhat.

Labor force changes were identified earlier as being different from changes in nuptiality or school enrollment, in that labor force participation rates reflect cultural and normative considerations that differ markedly across societies and as applied to each of the sexes. As expected therefore, and in contrast to percents single and percents enrolled, labor force participation rates among youth are not very clearly associated with GNP per capita as a measure of development level. In figure 21 only males ages 15-19 show a clear relationship. For the same reason, the growth rates of youth in and out of the labor force (Figure 22) are not so sharply differentiated. Finally, sex ratios among youth in the labor force (Figure 23) do not exhibit clear trends, except for a slight tendency for high sex ratios to decline (notably, in East Asia and in Singapore).

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<sup>23</sup>The popular topics are women, migrants (especially female) and women in agriculture. There is a relevant literature based on longitudinal data examining labor force entry processes (first job, etc.). The United Nations Population Division has produced some useful analysis (United Nations 1962, 1980, 1985). Also useful is Reubens et al (1981) which examines 12 OECD countries including Japan and has substantial discussions of young people not in school or the labor force and youth working and in school simultaneously.

## VI. IDENTIFYING KEY SUB-GROUPS OF YOUTH

Thus far we have examined four major patterns of change: the formal demography of youth transition (including the youth share of total population and the youth population growth rate), the social transitions in percents single (reflecting later marriage), and percents enrolled in school, and the more diverse changes in labor force participation among youth. The demography of the youth transition occurs in predictable lockstep with fertility transition, though we have seen that variations in the pace of fertility decline and its relationship to level of development are important determinants of the kind of demographic youth transition which will be experienced. The two major social transitions are closely tied to level of development as indexed conventionally by GNP per capita. We have also seen that while there are important changes in the labor force participation rates of youth, the directions and magnitudes of changes are very much associated, particularly for females, with national histories and national cultures, rather than with level of development.

This section is devoted to examining more pointedly the numbers of youth in some specific population subgroups which might be the locus of heightened risk, and which therefore might be the focus of programs. Were the necessary tabulations available, we might proceed by examining a cross-classification of all the categorizations presented earlier, combining age (2 groups), sex (2), marital status (2), enrollment status (2) and labor force status (2) to define 32 different subgroups of youth. In fact, age and sex are commonly cross-classified against each other variable, but marital status, enrollment status and labor force status are rarely combined with one another in tabulations.

However, we can move forward some way by making certain assumptions that seem warranted or at least not entirely unwarranted. We can identify youth who are single and out of school, for example, by assuming that all enrolled youth are still single. This is virtually the case in the younger group of youth, particularly for males, and we believe it is largely the case among older youth as well. To the degree that there are married students in a population, we will underestimate the number single and out of school. We can also estimate the number of youth who are not involved formally in the labor force or in education, by assuming that only a negligible proportion of youth in the labor market are also enrolled in school, and that only a small proportion of those in school are also in the labor force. This last assumption is obviously a bit more foolhardy, since there will be some proportion of youth, especially older youth, involved in both education and formal labor activity.<sup>24</sup> Our estimates of numbers with "no formal institutional involvement" (the complement of the summed percents in school and in the labor force) are certainly underestimates. Nevertheless, we will see that broad patterns are evident in the data and make the exercise worthwhile.

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<sup>24</sup>Reubens et al (1981), looking at OECD countries, report as percents of the male and female youth labor force enrolled in school, the following: Australia (20–30 percent of teen males; 10–15 percent of teen females), Table 5.2; Japan (6–8 percent of teen males and females), Table 5.4; Canada (30–32 percent of teen males and females), Table 5.6; France, Germany, Italy, Netherlands, United Kingdom (generally well under 10 percent of males and females ages 14–19), Table 5.11.

### A. Single, Out-of-School Youth

The number of youth in this category results from a kind of race historically between rising percents single and rising enrollment rates. Considering the age group 15–19 and the time period from 1950 to 1990, the results have been quite different across countries and for each of the sexes (Figure 24). For females, six countries have seen significant increases in the percentage single and out of school, while another six have seen that percentage decline just as markedly. The remaining countries had only slight changes. Interestingly, the countries with major increases are in South Asia (excluding Sri Lanka), plus Myanmar and China. The countries with major decreases are in East Asia, joined by the Philippines, Brunei and to a degree other countries of Southeast Asia. In the South Asia group percents single have risen more rapidly than have enrollment rates. In India, for example, there have been major shifts toward later marriage, but enrollment rates for girls have not moved upward in equally impressive fashion. In the East Asia group enrollment rates have risen more rapidly than have percents single. In Korea, for example, the rise in female percents single has been phenomenal, yet the rise in female school enrollment in the age group has been even greater. Male patterns are quite different. Only three countries have had major increases in the percentage of males single and out of school: India, Pakistan and Brunei. Nearly all the other countries have had major decreases. This has occurred because the upward movement of enrollment rates easily outpaced male marriage delay.

The pattern of changes that is projected for the period from 1990 to 2025 is somewhat different, and reflects our projection assumptions that enrollment rates will rise moderately while percents single outside of East Asia, and particularly in South Asia, will rise dramatically. In Figure 25 it is shown that the percentage of all youth in the single and out of school group expands very rapidly in South Asia, especially among females, but very slightly elsewhere. Major declines in this subgroup are projected for Korea and Taiwan. By 1990 in these countries both enrollment rates and percents single had reached very high levels for each of the sexes.

We can combine these changes in percentages with the projections of the youth population, and add numbers of married youth, to produce the national patterns shown in Figure 26. Most evident is the underlying rise in numbers of youth, which continues to the end of the century and well beyond in South Asia but is already in decline in East Asia, with Southeast Asia in an intermediate position and more varied. The diminishing absolute size of the married youth population reflects the shifts to later marriage. There are more married females than males among youth, particularly in South Asia where the age gap between spouses is still relatively large even as projected to 2025. The absolute number of married youth is still large in South Asia, and remains so over the projection period, but there are much smaller absolute numbers of married youth in the other regions. The population of single youth is large and grows rapidly in these estimates and projections. That growth is typically absorbed by the out-of-school category, a reflection of our assumptions of modest future increases in enrollment rates and substantial (outside East Asia) future increases in percents single. In East Asia the growth of single population is absorbed by the in-school category, since percentages single there were already very high by 1990.

## B. In the Labor Force, Among those Out of School

Youth in the labor force may be married or single, and in fact the norms influencing participation rates among single and married persons, especially females, vary markedly across societies.<sup>25</sup> Keeping in mind that we are looking at a highly imperfect indicator, in lieu of a cross-tabulation of labor force by marital status for each sex, we are able to make certain observations (trends across 1950–1990 are shown in Appendix Table A.3). There is hardly any variation at all across countries among males, virtually all of whom are in the labor force once they are no longer in school. The lowest levels are among younger male youth in Sri Lanka, among whom the ratio declines from 0.91 to 0.69. We cannot explain Sri Lanka's anomalous trend, except that suggest that it may have to do with the long-term civil unrest in that society. All other male ratios are at 0.90 or above. In contrast, the cross-national variation among younger females is quite marked and raises intriguing questions about labor force participation among single and married young women.

In Figure 27 the ratio of those in the labor force to those out of school is shown for each country in relation to GNP per capita. The male ratios are uniformly very high at ages 20–24 regardless of GNP per capita, and even at ages 15–19 only small proportions of out-of-school males are not in the labor force. Female patterns are much more revealing. One group of countries has very low ratios which remain low as GNP per capita rises. These are countries where female marriage is still relatively early and/or involvement in formal work before marriage is uncommon. The prototype cases here are Bangladesh, Pakistan, South Korea and Taiwan. Hong Kong, Japan and China are at the other end of the continuum where the ratio of those in the labor force to those who are out of school is very high. Taiwan and Singapore are notable for the dramatic rise in this ratio experienced among females between 1950 and 1990.<sup>26</sup> Taiwan's ratio went from near zero to about 0.73; Singapore's ratio went from 0.26 to 1.00. These trends must reflect the shift to later marriage, and the opening of formal work roles to women, but also dramatic changes in the labor force participation of young women once they are married. The same countries stand out in the data for females ages 20–24.

Even with the imperfect indicator that is available, it is clear that there are dramatic differences in youth social demography across countries reflecting different labor force participation rates of single and married females, and that important changes in youth social demography have occurred.

## C. Not Involved in Formal Institutions

In a similar manner we can look at the proportion of youth who do not seem to be involved either in schooling or the labor force in a formal way (Figure 28). This is approximated by summing the percents in school and in the labor force, and ignoring the small percentage who may be involved in both simultaneously. The percentage uninvolved is slightly understated as we have already

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<sup>25</sup>The magnitudes of age-specific participation rate differentials by marital status are illustrated in United Nations (1962), Tables A.11 and A.12.

<sup>26</sup>Because we lack estimates of GNP per capita only Singapore 1970–1980 can be shown.

noted. We must keep in mind that those neither in school or working will include single young people as well as the married, and that many (particularly among females) will be engaged in productive activity nevertheless.

Considering first the age group 15–19 and comparing males and females, we find that the "no formal involvement" situation is rare (under 15 percent) among males but very common (from 40 to 80 percent) and certainly much more variable among females. This variation primarily reflects the percentage married in the age group, and the fact that in some societies young married women do not work while in others they do (United Nations 1962). Also, we observe a few upward trends with rising GNP per capita in the male data, while the female levels are more nearly constant for each country though at quite different levels. In Figure 28 selected countries illustrate very low levels (Japan, Hong Kong) and very high levels (Bangladesh, Pakistan). Clearly, the female patterns are reflections of cultural and social features of societies and as such they change only slowly. At ages 20–24 there is a very large difference between male and female patterns. Nearly all males at that age are either at work or in school (and this is true of the married as well as the single), while among females aged 20–24 there is a slight increase for some countries with rising GNP per capita, while the large national differences are maintained.

A final display of these same results (Figure 29) focuses on females and highlights the combinations of percentages in school and in the labor force that produce the no-involvement levels in Figure 28.<sup>27</sup> In the younger age group of women both schooling and labor force participation vary considerably. Looking at the pattern over several decades (i.e. across a range of levels of GNP per capita) it is clear that for each country it is generally the enrollment rate that has risen with the percentage in the labor force either changing little (e.g., South Korea, Taiwan, Brunei) or actually declining somewhat (e.g., Japan and Nepal). In the older age group of women there is very little variation among school enrollment rates. Relatively high percents enrolled are found in East Asia (Japan, South Korea, Taiwan) and the Philippines in Southeast Asia.

## VII. SUMMING UP

Much of the epic of social change across Asia has focused on youth, giving rise to a myriad of problems, and there is intense current interest in ameliorating youth policies, especially in the relatively unexplored areas of risk-taking and reproductive health. Policymaking directed to youth requires the fullest understanding of the changes that are occurring to youth, including some dramatic changes in youth numbers and composition. These changes are seen best from a comparative perspective over an historically meaningful period of time. The research reported here pursues this strategy by assembling data on demographic and social changes among Asian youth spanning 17 Asian countries over the 1950–1990 period, combined with projections of several important time series from 1990 to 2025.

A complex body of empirical trends has been examined in this report, organized within the framework of a one-time, irreversible and non-repeatable Youth Transition, and a set of associated social changes. Among the relevant changes we have highlighted the following: (A)

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<sup>27</sup>This display provides more data points than Figure 28 does, because it does not require information on GNP per capita.

common changes of a transitional nature (demographic youth transition—the youth bulge, etc; the nuptiality transition; the education transition; others which perhaps cannot be described with reliable comparative and historical data); (B) important and measurable changes of a more complex nature (e.g., labor force participation changes); (C) other important changes that are not measured in this research, and perhaps cannot be measured reliably except intermittently (age at menses; indicators of the sexual system, etc.).

We have offered some observations about the demographic core of the youth transition:

- The demographic youth transition is driven by fertility transition and results in a one time youth bulge. The youth share of total population shifts from about 16–18 percent (pre-transition) to somewhere in the range 20–24 percent (mid-bulge), back down to the pretransition level (some 30 years after the onset of fertility decline) and then well beyond to the post-transition, stable level of about 12 percent (many decades hence).<sup>28</sup>
- The characteristics of the mid-transition youth bulge vary with the tempo of fertility decline and the total amount of fertility decline. Two key indicators are the youth share of total population, and the youth population growth rate; these can be very high when fertility drops quickly from a very high level to a very low level (conditions illustrated here by South Korea, Singapore and Taiwan).
- Late-comers to fertility transition (e.g., Indonesia, Philippines) are experiencing muted youth bulges. What will happen to the remaining countries (e.g., India, Pakistan) depends largely on the character of their fertility declines.
- A rapidly played out youth bulge can be disruptive in the short run because the youth share is very high as is the youth growth rate—but, this situation is momentary. A slower demographic youth transition may be dealt with more easily, but it can generate considerable growth in the youth population. This is a trade-off that country planners should be aware of.

We began our analysis with a review of Goldstone (1991), Huntington (1996) and others who examined how the demography of youth can be an important factor in the course of large-scale social change. Many of the historical instances they examined involve a change in youth demography resulting from short-term mortality decline and/or temporary fertility increase, either of which can produce a significant though temporary youth bulge. In the present exercise we have looked in some detail at Asia in the 1960s and thereafter, during a time of one-time and permanent demographic transition to low levels of mortality and fertility. We have documented the features of demographic youth transition as a closely associated phenomenon. Whereas in 17<sup>th</sup> century England and other historical instances short-term demographic change gave rise to

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<sup>28</sup>We of course are not able yet to look at demographic changes well after demographic transition, but stable population models reflecting post-transition demographic conditions suggest a “final” youth share of about 12.8 percent. At that point the aged share of total population will be around 18.5 percent.

temporary youth bulges, our Asian data describe how a permanent demographic transition gives rise to a transitional, temporary but quite predictable kind of demographic change among youth.

There is an important element in common across all these youth bulge episodes. In neither late-20th century Asia or any of the earlier situations examined by Goldstone, Huntington and others is sheer "engulfment by numbers" (Coleman 1974) or the burgeoning absolute count of youth the crucial factor at work. In 17<sup>th</sup> century England it was young, urban men, especially the later-born men of farm family background who found themselves disenfranchised by the prevailing system of land inheritance. Similar arguments are made for France in the run-up to 1789.

But our interest here is not in youth as a political force, but as a diverse audience for programmatic efforts. We stressed at the outset the importance of disaggregating or segmenting that audience so that efforts can be tailored carefully and targeted accurately. Sheer numbers are not the entire story. In the modern-day Asian societies that we have examined demographic transition is producing a notable youth bulge only in those few instances where demographic transition has been extremely rapid and fertility has fallen from a high initial level. The early and very rapid transitions of South Korea, Singapore and Taiwan illustrate this. More important numerically, and much more nearly universal are the systematic and often dramatic shifts in social composition—the youth transition—that has occurred simultaneously.

The remarkable transitions in schooling and marriage that combine with youth demography are more waves than bulges, waves that build on one another to create a crest of remarkable force. At its peak the youth growth rate in South Korea was 5.5 percent. From 1960 to 1980 Korea's youth population expanded by 86 percent, but during the same period of time its single population doubled and its in-school population expanded by 3.5 times.

We have stressed commonalities across the experiences of Asian societies. But unique national experiences are very important as well, as perusal of the accompanying national-level tables and figures illustrates. The timing, tempo, and force of the transitions varies across countries, and extraneous historical events sometimes obscure the underlying transitional patterns (cf Japan and Hong Kong). But the shared experience is powerful enough to give the framework some predictive value. Our projections of youth bulges and other aspects of demographic youth transition for South Asia are likely to be born out since they follow directly from demographic transition itself as well as the on-going marriage and educational transitions.

Additional analysis of various kinds would be productive, including effort to further disaggregate the youth population. Certainly a more detailed examination might be made of urban youth, and among urban youth the migrant youth population. Certain additional dimensions of social demography can be addressed directly, though for fewer countries and shorter time periods. One such issue is living arrangements (youth living outside of conventional kin and family groups; youth in youth households). All of this amounts to further disaggregation or segmentation of the youth population to identify the sub-groups with rapidly rising proportions and absolute numbers, as well as sub-groups whose numbers are small or diminishing. Finally, a growing number of surveys in the region measure the rates of behavioral risk of various kinds

among youth (Xenos 1997) and some of these surveys can provide behavioral information for the youth population segments identified here.

### References

- Alan Guttmacher Institute. 1995. *Hopes and Realities: Closing the Gap Between Women's Aspirations and Their Reproductive Experiences*. Washington DC: Alan Guttmacher Institute.
- Austin, E. W. 1995. Reaching Young Audiences. Developmental Considerations in Designing Health Messages. In E. Maibach and R. L. Parrott, eds. *Designing Health Messages: Approaches from Communication Theory and Public Health Practice*. Thousand Oaks, California: Sage.
- Basu, Alaka M. 1977. The New International Population Movement: A Framework for a Constructive Critique. *Health Transition Review* 7(Supplement 4):7-32.
- Benavot, Aaron and Phyllis Riddle. 1988. The Expansion of Primary Education, 1870-1940: Trends and Issues. *Sociology of Education* 61(July):191-210.
- Benavot, Aaron, Yun-Kyung Cha, David Kamens, John W. Meyer, and Suk-Ying Wong. 1991. Knowledge for the Masses: World Models and National Curricula, 1920-1986. *American Sociological Review* 56(Feb.):85-100.
- Bennett, John W. 1976. *The Ecological Transition: Cultural Anthropology and Human Adaptation*. Oxford: Pergamon Press.
- Birdthistle, Isolde and Cheryl Vince-Whitman. 1997. *Reproductive Health Programs for Youth Adults: School-Based Programs*. Washington DC: Focus on Youth Adults Research Series.
- Bloom, David E. and Richard H. Freeman. 1986. *Youth Problem: Age or Generational Crowding?* Center for Population Studies Discussion Paper No. 83.
- Bongaarts, John. 1994. Population Policy Options in the Developing World. *Science* 263:771-776.
- Bongaarts, John and Susan Cotts Watkins. 1996. Social Interactions and Contemporary Fertility Transitions. *Population and Development Review* 22(4):639-682.
- Bos, Eduard, My T. Vu, Ernest Massiah, and Rodolfo A. Bulatao. 1994. *World Population Projections: Estimates and Projections with Related Demographic Statistics, 1994-1995*. Baltimore: Johns Hopkins University Press.

- Braungart, R. G. and M. M. Braungart. 1990. Youth Movements in the 1980s: A Global Perspective. *International Sociology* 5(2):157-181.
- Braungart, Richard G. and Margaret M. Braungart. 1989. Youth Status and National Development: A Global Assessment in the 1980's. *Journal of Youth and Adolescence* 18(2):107-130.
- Buck, C. and K. Stavraky. 1967. The relationship between age at menarche and age at marriage among childbearing women. *Human Biology* 39:93-102.
- Butler, Joan A. 1990. *Spatial Patterns of Age Structure and Political Instability in India*. M.A. thesis. University of Hawaii.
- Caldwell, J. C. S., Findley P. Caldwell, M. G. Cosford, W. H. Braid, and D. Broers-Freeman. 1990. *What We Know About Health Transition*. Health Transition Series No. 2. Canberra: Australian National University.
- Center for Communications Programs. 1995. *Reaching youth worldwide: A decade of reproductive health programs and activities for young people*. Working Paper No. 2. Baltimore: CCP.
- Central Committee on Youth. 1989. *Report on the Need for a Youth Policy in Hong Kong*. Central Committee on Youth.
- . 1988. *Report on Youth Policy*. Hong Kong: Central Committee on Youth.
- Central Intelligence Agency. 1990. *Youth Deficits: An Emerging Population Problem*. RTT 90-1001 2U. Washington DC: CIA.
- Chang, Ming-Cheng, Ronald Freedman, and Te-Hsiung Sun. 1981. Trends in Fertility, Family Size Preferences, and Family Planning Practice: Taiwan, 1961-1980. *Studies in Family Planning* 12(5):211-228.
- Cherlin, Andrew and Nancy Riley. 1986. *Adolescent Fertility: An Emerging Issue in Sub-Saharan Africa*. Population, Health and Nutrition Department Technical Note 86-23. Washington, DC: World Bank.
- Cleland, J. and B. Ferry. 1995. *Sexual Behavior and AIDS in the Developing World*. London: Taylor and Francis.
- Cleland, John and Peter Way, eds. 1994. AIDS Impact and Prevention in the Developing World: Demographic and Social Science Perspectives. *Health Transition Review*, Supplement to Volume 4, ISSN 1036-4005. Canberra: Health Transition Centre, National Centre for Epidemiology and Population Health in conjunction with the International Union for the Scientific Study of Population.

- Coale, Ansley J. 1984. Rapid Population Change in China, 1952-1982. *Committee on Population and Demography*, Report No. 27. Washington DC: National Academy Press.
- Coale, Ansley J. and Guang Guo. 1989. *Revised Regional Model Life Tables at Very Low Levels of Mortality*. Unpublished ed. Princeton: Office of Population Research, Princeton University.
- Coleman, James. 1974. *Youth: Transition to Adulthood*. Chicago: University of Chicago Press.
- Durand, John D. 1975. *The Labor Force in Economic Development: A Comparison of International Census Data 1946-1966*. Princeton University Press.
- Dyson, Tim. 1990. *Sexual Behaviour and Networking: Anthropological and Socio-Cultural Studies on the Transmission of HIV*. Liege: Ordina.
- Economic and Social Commission for Asia and the Pacific. 1997. *Review of the Youth Situation, Policies and Programmes in Asia and the Pacific*. Bangkok: ESCAP.
- Education Development Center. 1996. *School-based Reproductive Health Programs for Young Adults*. Newton MA: Pathfinder International.
- Fee, N. and M. Youssef. 1993. *Young People, AIDS and STD Prevention: Experience of Peer Approaches in Developing Countries*. Draft. Geneva: Global Programme on AIDS.
- Fields, Gary S. 1994. The Migration Transition in Asia. *Asian and Pacific Migration Journal* 3(1):7-30.
- Flanagan, D., C. Williams and H. Mahler. 1996. *Peer Education in Projects Supported by AIDSCAP: A Study of 21 Projects in Africa, Asia and Latin America*. AIDSCAP.
- Flora, J. A., E. W. Maibach, and D. Holtgrave. 1995. *Communication Campaigns for HIV Prevention: Using Mass Media in the Next Decade*. National Academy of Sciences, Assessing the Social and Behavioral Science Base for HIV/AIDS Prevention and Intervention, Workshop Summary Background Papers. Washington DC: National Academy Press.
- Freedman, Ronald. 1995. *Asia's Recent Fertility Decline and Prospects for Future Demographic Change*. Asia-Pacific Population Research Reports No. 1. Honolulu: East-West Center.
- Fuller, Gary. 1995. The Demographic Background to Ethnic Conflict: A Geographic Overview. Central Intelligence Agency, ed. *The Challenge of Ethnic Conflict to National and International Order in the 1990's. Geographic Perspectives*, pp. 151-154. RTT 95-10039. Washington DC: Central Intelligence Agency.
- Fuller, Gary and Forrest R. Pitts. 1990. Youth Cohorts and Political Unrest in South Korea. *Political Geography Quarterly* 9(1):9-22.

- Gage-Brandon, Anastasia and Dominique Meekers. 1993. Sex, Contraception, and Childbearing Before Marriage in Sub-Saharan Africa. *International Family Planning Perspectives* 19(1):14-18,33.
- Gillis, John R. 1974. *Youth and History: Tradition and Change in European Age Relations 1770-Present*. New York: Academic Press.
- Goldstone, Jack A. 1991. *Revolution and Rebellion in the Early Modern World*. Berkeley: University of California Press.
- Hare-Mustin, Rachel T. 1982. China's Marriage Law: A Model for Family Responsibilities and Relationships. *Family Process* 21(4):477-481.
- Heng, Geraldine and Janadas Devan. 1992. State Fatherhood: The Politics of Nationalism, Sexuality, and Race in Singapore. In Andrew Parker, Mary Russo, Doris Sommer, and Patricia Yaeger, eds. *Nationalisms and Sexualities*. Routledge, Chapman and Hall Inc.
- Herrin, Alejandro N. and Marilou P. Costello. 1996. *Sources of Future Population Growth in the Philippines and Implications for Public Policy*. New York: The Population Council.
- Huntington, Samuel P. 1996. *The Clash of Civilizations and the Remaking of World Order*. London: Touchstone Books.
- International Center for Research on Women. 1996. *Investing in the Future: ICRW's Program on Adolescence*.
- International Labour Office. 1986. *Economically Active Population Estimates and Projections, 1950-2025*. Geneva.
- International Labour Organization. 1977. *Labour Force Estimates and Projections, 1950-2000*. Geneva.
- . 1971. *Labour Force Projections, 1965-1985*. Geneva.
- Johnson, Richard W. and Julie Da Vanzo. 1998. Economic and Cultural Influences on the Decision to Leave Home in Peninsular Malaysia. *Demography* 35(1):97-114.
- Jones, Gavin W. 1997a. *Changing Age Structure, Educational Progress, Employment Patterns, the Environment, Mobility and their Implications for Adolescents*. Prepared for Expert Group Meeting on Adolescents: Implications of Population Trends, Environment, and Development, 30 September-2 October 1997, Bangkok, Thailand.
- . 1997b. Population Dynamics and Their Impact on Adolescents in the ESCAP Region. *Asia-Pacific Population Journal* 12(3):3-29.

- . 1997. The Demise of Universal Marriage in East and South-East Asia. In Gavin W. Jones, R. M. Douglas, J. C. Caldwell, and R. M. D'Souza, eds. *The Continuing Demographic Transition*, pp. 51–79. Oxford: Oxford University Press.
- Jones, Gavin W. ed. 1984. *Women in the Urban and Industrial Workforce: Southeast and East Asia*. Development Studies Centre, Monograph No.33. Canberra: Australian National University.
- Keyfitz, Nathan. 1965. Age Distribution as a Challenge to Development. *American Journal of Sociology* 70:659–668.
- . 1971. On the Momentum of Population Growth. *Demography* 8(1):71–80
- . 1973. The Youth Cohort Revisited. In F. Guyot, ed. *Population, Politics, and the Future of Southern Asia*. New York: Columbia University Press.
- . 1986. The Youth Cohort and Indonesian History. *Masyarakat Indonesia* 13(1):1–20.
- Kobayashi, Kazumasa and Yoshihiro Tsubouchi. 1979. Recent Trends and Regional Variations in Japanese Marital Fertility. In Lee-Jay Cho and Kazumasa Kobayashi, eds. *Fertility Transition of the East Asian Populations*. Honolulu: The University Press of Hawaii.
- Koontz, S. L. and S. R. Conly. 1994. *Youth at Risk: Meeting the Sexual Health Needs of Adolescents*. Population Policy Information Kit No. 9. Washington DC: Population Action International.
- Leete, Richard and Iqbal Alam. 1993. *The Revolution in Asian Fertility: Dimensions, Causes, and Implications*. Oxford: Clarendon Press.
- Lightfoot, Cynthia. 1997. *The Culture of Adolescent Risk-Taking*. New York: The Guilford Press.
- McCarthy, J. 1982. *Differentials in Age At First Marriage*. World Fertility Survey Comparative Studies, Cross National Summaries No. 19. Voorburn, Netherlands: International Statistical Institute.
- McCauley, Ann P. and Cynthia Salter. 1995. Meeting the needs of young adults. *Population Reports* 23(3):1–44. ISSN 0887-0241.
- McDevitt, Thomas M., Adlarka Arjun, Timothy B. Fowler, and Vera Harris-Bourne. 1996. *Trends in Adolescent Fertility and Contraceptive Use in the Developing World*. Washington DC: U.S. Department of Commerce.
- Meekers, Dominique. 1993. *Sexual initiation and premarital childbearing in sub-Saharan Africa*. DHS Working Paper No. 5. Columbia, Maryland: Macro International.

- Meyer, John W. and Michael T. Hannan. 1979. *National Development and the World System: Educational, Economic and Political Change, 1950-1970*. University of Chicago Press.
- Meyer, John W., Francisco O. Ramirez, and Yasemin Neholgu Soysal. 1992. World Expansion of Mass Education, 1870-1980. *Sociology of Education* 65(2):128-149.
- Moller, Herbert. 1968. Youth as a Force in the Modern World. *Comparative Studies in Society and History* 10:238-260.
- Morris, L. 1988. Young adults in Latin America and the Caribbean: Their sexual experience and contraceptive use. *International Family Planning Perspectives* 14(4):153-158.
- Musgrove, F. 1963. Population Changes and the Status of the young in England Since the 18th Century. *Sociological Review*, pp. 69-93.
- Nare, C., K. Katz, and E. Tolley. 1996. Measuring Access to Family Planning Education and Services for youth Adults in Dakar, Senegal. *Family Health International*.
- National Academy of Sciences. 1997. *Reproductive Health in Developing Countries*. Washington DC.
- Omran, Abdel. 1971. The Epidemiologic Transition: A Theory of the Epidemiology of Population Change. *Milbank Memorial Fund Quarterly* 49(4):509-538.
- Population and Development Review. 1990. The CIA on Youth Deficits. *Population and Development Review* 16(4): 801-807.
- Population Information Program. 1985. Youth in the 1980s: Social and Health Concerns. *Population Reports* 13(5):M349-388.
- Population Reference Bureau. 1992a. *Adolescent Sexual Activity and Childbearing in Latin America and the Caribbean: Risks and Consequences*. Washington DC.
- . 1992b. *Adolescent Women in Sub-Saharan Africa*. Washington DC.
- Quah, S. R. 1981. Impact of Policy on the Family: Can the Family be Strengthened by Legislation? *Southeast Asian Journal of Social Science* 9(1-2):33-53.
- . 1989. *The Social Significance of Marriage and Parenthood in Singapore*. Paper presented at the XXIVth International CFR Seminar, Singapore, 2-4 May 1989.
- Raymundo, Corazon M. 1989. *The Filipino Adolescents: Their Implication for Philippine Development*. Paper written as part of the U.P. Center for Integrative Development Studies-UNFPA Project on Interrelationship of Population, Human Resources Development and the Philippine Culture.

- Reubens, Beatrice G., John A. C. Harrison, and Kalman Rupp. 1981. *The Youth Labor Force 1945–1995: A Cross-National Analysis*. Totowa, New Jersey: Allanheld, Osmun and Co. Publishers, Inc.
- Rindfuss, Ronald R. and Philip Morgan. 1983. Marriage, Sex and the First Birth Interval: The Quiet Revolution in Asia. *Population and Development Review* 9(2):259–278.
- Ruzika, Lado T. 1979. *Nuptiality and Fertility*. Liege: Ordina Editions.
- Salaff, Janet W. 1988. *State and Family in Singapore: Structuring in a Developing Society*. Ithaca: Cornell University Press.
- Senderowitz, J. 1995. *Adolescent Health: Reassessing the passage to adulthood*. Washington DC: World Bank.
- Senderowitz, Judith. 1997. *Health Facility Programs on Reproductive Health for Youth Adults*. Washington DC: Focus on Young Adults, Pathfinder International.
- Shiraishi, Saya. 1997. *Young Heroes: Children, School, and the Politics of Family in New Order Indonesia*. Ithaca: Cornell University, Southeast Asia Program.
- Sikes, O. J. 1996. Approaches to Adolescent Reproductive Health: Audience-Specific Strategies. *International Journal of Health Promotion and Education* 3(3):15–17.
- Singh, Susheela and Renee Samara. 1996. Early Marriage among Women in Developing Countries. *International Family Planning Perspectives* 22(4):148–157,175.
- Singh, Susheela and Wulf, Deirdre. 1990. *Today's adolescents, tomorrow's parents: A portrait of the Americas*. New York: Alan Guttmacher Institute.
- Slater, M. D. and J. A. Flora. 1991. Health Lifestyles: Audience Segmentation Analysis for Public Health Interventions. *Health Education Quarterly*. 18(2):221–233.
- Smith, David P. 1980. *Age at First Marriage. Comparative Studies*. Cross National Summaries No. 7. London: World Fertility Survey.
- Smith, Peter C. 1980. Asian Marriage Patterns in Transition. *Journal of Family History* 5(1): 58–97.
- Smith, Peter C. and Jing Sheng Wei. 1986. *The Evolution of a Late Marriage Regime in China*. Working Papers of the East-West Population Institute, No. 42. Honolulu.
- Trussell, James, Jane Menken, and Ansley J. Coale. 1979. A General Model for Analyzing the Effects of Nuptiality on Fertility. In Lado Ruzicka, ed. *Nuptiality and Fertility*. Liege: Ordina Editions.

- UNESCO. 1977. *Trends and Projections of Enrolment by Level of Education and by Age*. Paris.
- . 1983. *Trends and Projections of Enrolment by level of Education and by Age, 1960–2000* (as assessed in 1982). Paris.
- . 1993. *Trends and Projections of Enrolment by Level of Education, by Age and by Sex, 1960–2025* (as assessed in 1993). Current surveys and research in statistics ed. Paris.
- UNICEF. 1967. *Children and Youth in National Planning and Development in Asia. Policy and Planning* Vol. 1. Bangkok.
- United Nations. 1989. *Adolescent Reproductive Behaviour: Evidence from Developing Countries*. ISBN 92-1-151184-4. New York: Department of International Economic and Social Affairs.
- United Nations. 1988. *First Marriage: Patterns and Determinants*. Department of International Economic and Social Affairs. ST/ESA/SER.R/76. New York.
- United Nations. 1983. *Marital Status and Fertility: A Comparative Analysis of World Fertility Survey Data for Twenty-One Countries*. New York.
- . 1985. *Migration, Population Growth, and Employment in Metropolitan Areas of Selected Developing Countries*. New York.
- . 1990. *Patterns of First Marriage: Timing and Prevalence*. New York.
- . 1980. *Patterns of Urban and Rural Population Growth. Population Studies* No. 68. New York.
- . 1994a. *Programme of Action of the 1994 International Conference on Population and Development*. New York.
- . 1962. *Sex and Age Patterns of Participation in Economic Activities. Demographic Aspects of Manpower, Report I*. New York: ESCAP.
- . 1994b. *The Sex and Age Distribution of the World Populations: The 1994 Revision*. New York.
- . 1995. *World Population Prospects: The 1994 Revision*. New York.
- United Nations, ESCAP. 1989. *Review of Youth Policies in the ESCAP Region*. New York.
- Van der Eng, Pierre. 1993. *Economic Growth and the Age at Menarche in Asia*. Unpublished.
- Visaria, Leela. 1986. *Demography of the Indian Youth*. The Gujarat Institute of Area Planning Working Paper Series No. 4.

- Wallimann, Isidor and George V. Zito. 1984. Cohort Size and Youthful Protest. *Youth and Society* 16(1):67–81.
- Weiner, Myron. 1971. Political Demography: An Inquiry into the Political Consequences of Population Change. National Academy of Sciences, eds. *Rapid Population Growth: Consequences and Policy Implications*, Chapter 15. Baltimore: Johns Hopkins Press.
- Westoff, Charles F., Ann K. Blanc, and Laura Nyblade. 1994. *Marriage and Entry into Parenthood*. Demographic and Health Surveys Comparative Studies No. 10. Calverton MD: Macro International Inc.
- World Health Organization. 1993. *The Health of Young People: A Challenge and a Promise*. Geneva.
- Wriggins, Howard W. 1988. *Youth Cohorts, Population Change and Politics: Five Intervening Variables*. Prepared for a Conference on Future Changes in Population Age Structure. Sopron, Hungary, October 18–21, 1988.
- Wrigley, E. A. and R. S. Schofield. 1981. *The Population History of England 1541–1871*. Cambridge: Harvard University Press.
- Xenos, Peter. 1992c. Extended Adolescence and the Sexuality of Asian Youth: Observations on Research and Policy. In M.L. Ng and L.S. Lam, eds. *Sexuality in Asia—Selected Papers from the Conference on Sexuality in Asia, May 1990, Hong Kong*. Hong Kong College of Psychiatrists.
- . 1997. *Measuring the Sexual System and Union Formation Among Adolescents in Developing Countries*. Prepared for the Workshop on Adolescent Sexuality and Reproductive Health in Developing Countries, Washington DC, March 24–25, 1997.
- . 1990a. *The Social Demography of Asian Youth Populations: An Analysis of Projections to 2010*. Analysis of Population Trends and Projections in Asia 1980–2010, Background Paper No. 3. Honolulu: East-West Population Institute.
- . 1990b. Youth, Sexuality and Public Policy in Asia: A Research Perspective. In Stella R. Quah, ed. *The Family as an Asset: An International Perspective on Marriage, Parenthood and Social Policy*, Chapter 14. Singapore: Times Academic Press.
- Xenos, Peter and Socorro A. Gultiano. 1992. *Trends in Female and Male Age at marriage and Celibacy in Asia*. Papers of the Program on Population No. 20. Honolulu: East-West Center.
- Yi, Zeng, Ansley Coale, Minja Kim Choe, Liang Zhiwu, and Liu Li. 1994. Leaving the Parental Home: Census-based Estimates for China, Japan, South Korea, United States, France and Sweden. *Population Studies* 48:65–80.

Yinger, Nancy, Alex de Sherbinen, Luis H. Ochoa, Leo Morris, and Jennifer Hirsch. 1992.  
*Adolescent Sexual Activity and Childbearing in Latin America and the Caribbean: Risks  
and Consequences*. Washington DC: Population Reference Bureau.

Zelinsky, Wilbur. 1971. The Hypothesis of Mobility Transition. *Geographical Review*  
61:230-231.

**Table 1. Important Dates in the Demography of Youth Transition:  
Countries of Asia**

Country	Onset of fertility decline	Peak growth rate among youth	Peak youth share of total population	Peak number of youth population
Japan	1925	1960	1965	1965
Singapore	1959	1965	1980	1980
Hong Kong	1960	1960	1980	1980
South Korea	1962	1970	1980	1980
Sri Lanka	1962	1970	1980	2000
Philippines	1963	1965	1975	2025
Brunei	1965	1965	1980	2025
Taiwan	1965	1970	1980	1980
Malaysia	1966	1965	1980	2010
Thailand	1968	1970	1985	2000
China	1969	1980	1985	1990
Indonesia	1970	1970	1990	2000
India	1973	1970	1985	2015
Myanmar	1976	1980	1990	2020
Bangladesh	1981	1970	2000	2020
Nepal	1988	1995	2005	2030
Pakistan	1990	2000	2010	2035

Source: Appendix A.

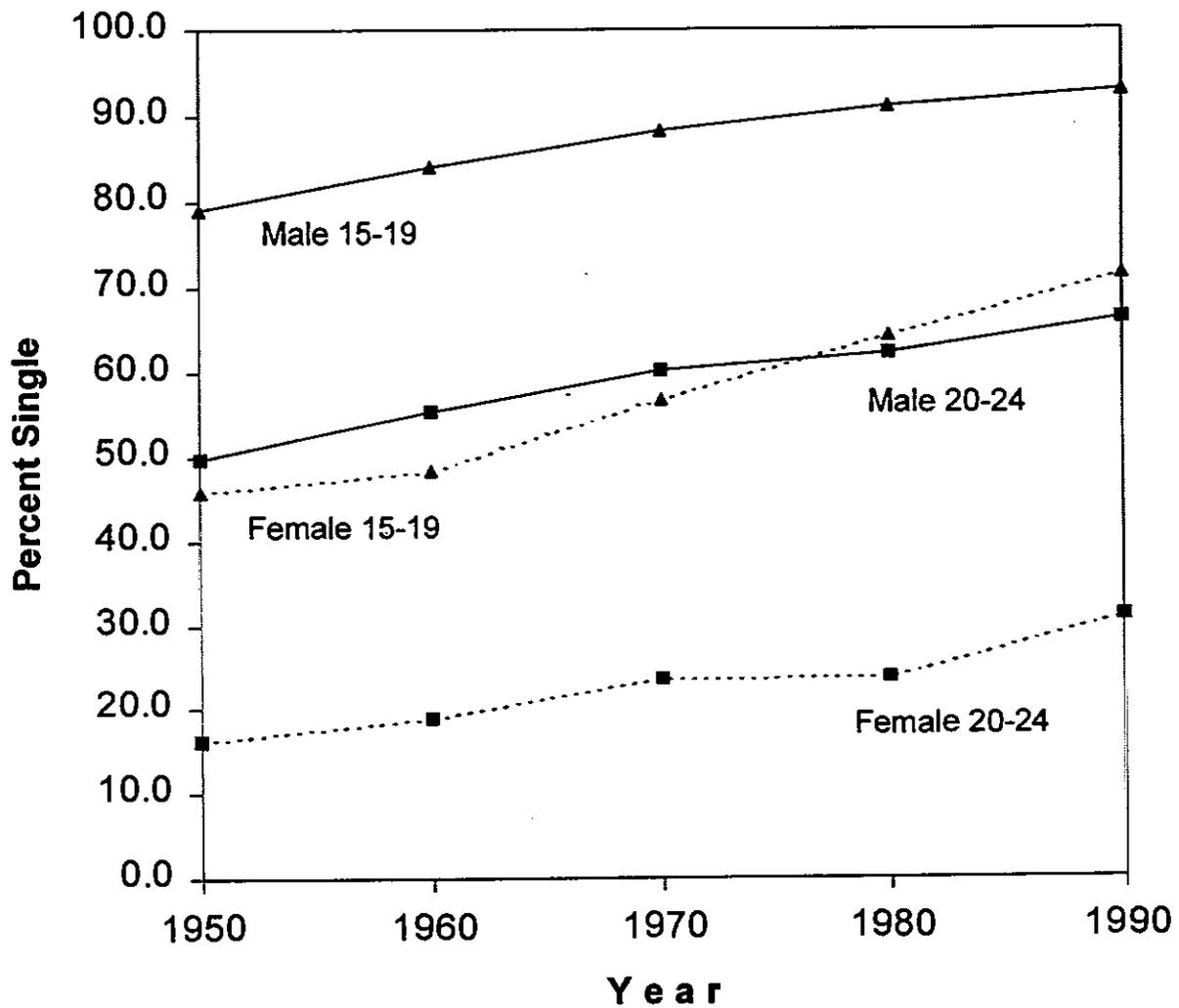
**Table 2: Patterns of Fertility Transition and Demographic Youth Transition**

Country	Duration of Fertility Transition <sup>a</sup>	Duration of Demographic Youth Transition <sup>b</sup>	Total Growth of Youth Population During the Demographic Youth Transition (%)
Taiwan	18	15	54.3
Korea (South)	23	18	83.1
Hong Kong	20	20	219.9
Singapore	16	21	111.5
China	21	21	97.2
Indonesia	40	30	103.6
Thailand	32	32	108.8
Sri Lanka	43	38	90.0
Bangladesh	34	39	77.8
India	47	42	106.1
Nepal	42	42	126.6
Pakistan	40	45	100.4
Malaysia	49	44	193.8
Myanmar	49	44	117.0
Brunei	55	60	442.9
Philippines	66	62	258.9

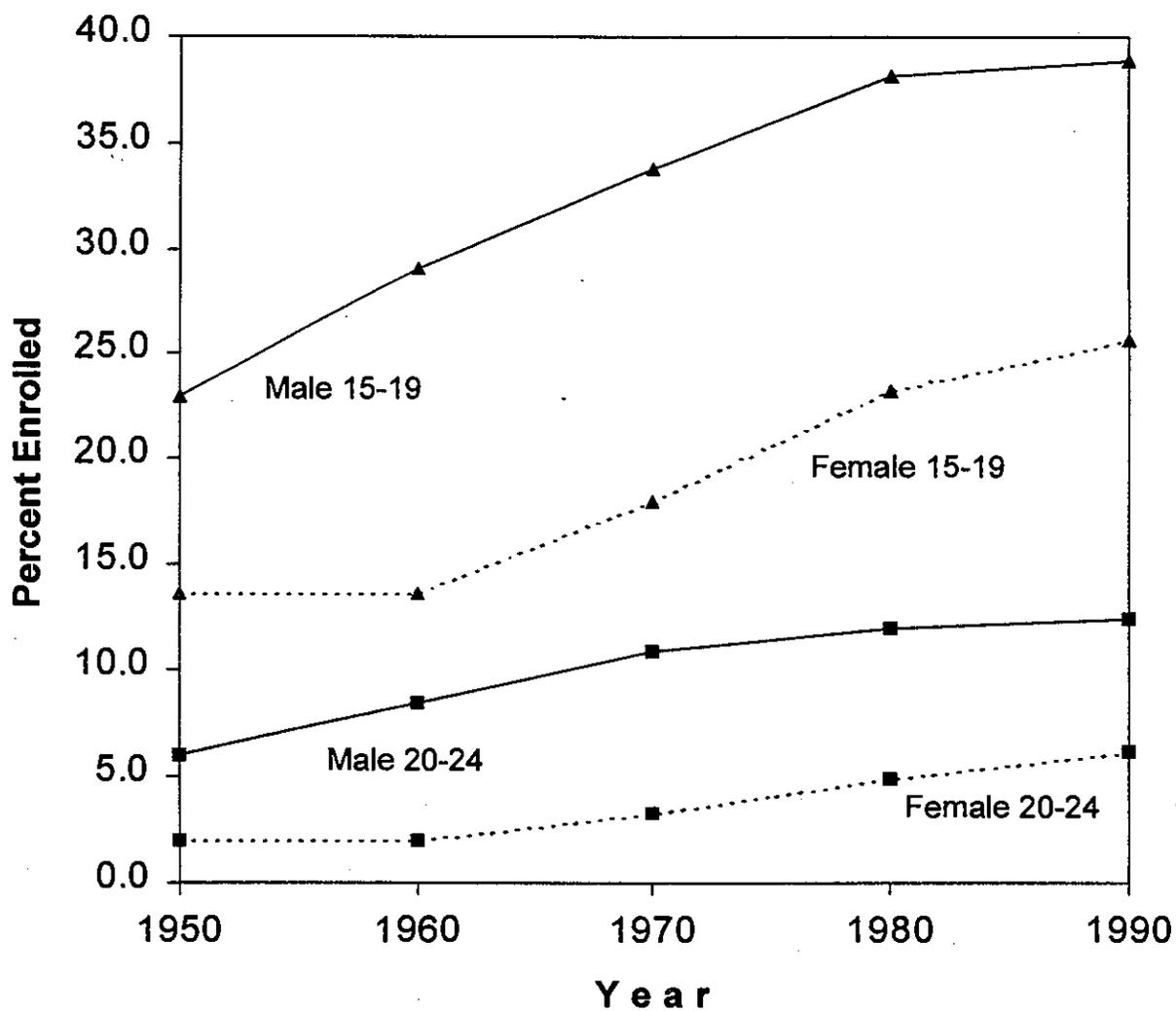
<sup>a</sup> Number of years from NRR=1.0.

<sup>b</sup> Number of years from onset of fertility decline to decline in number of youth

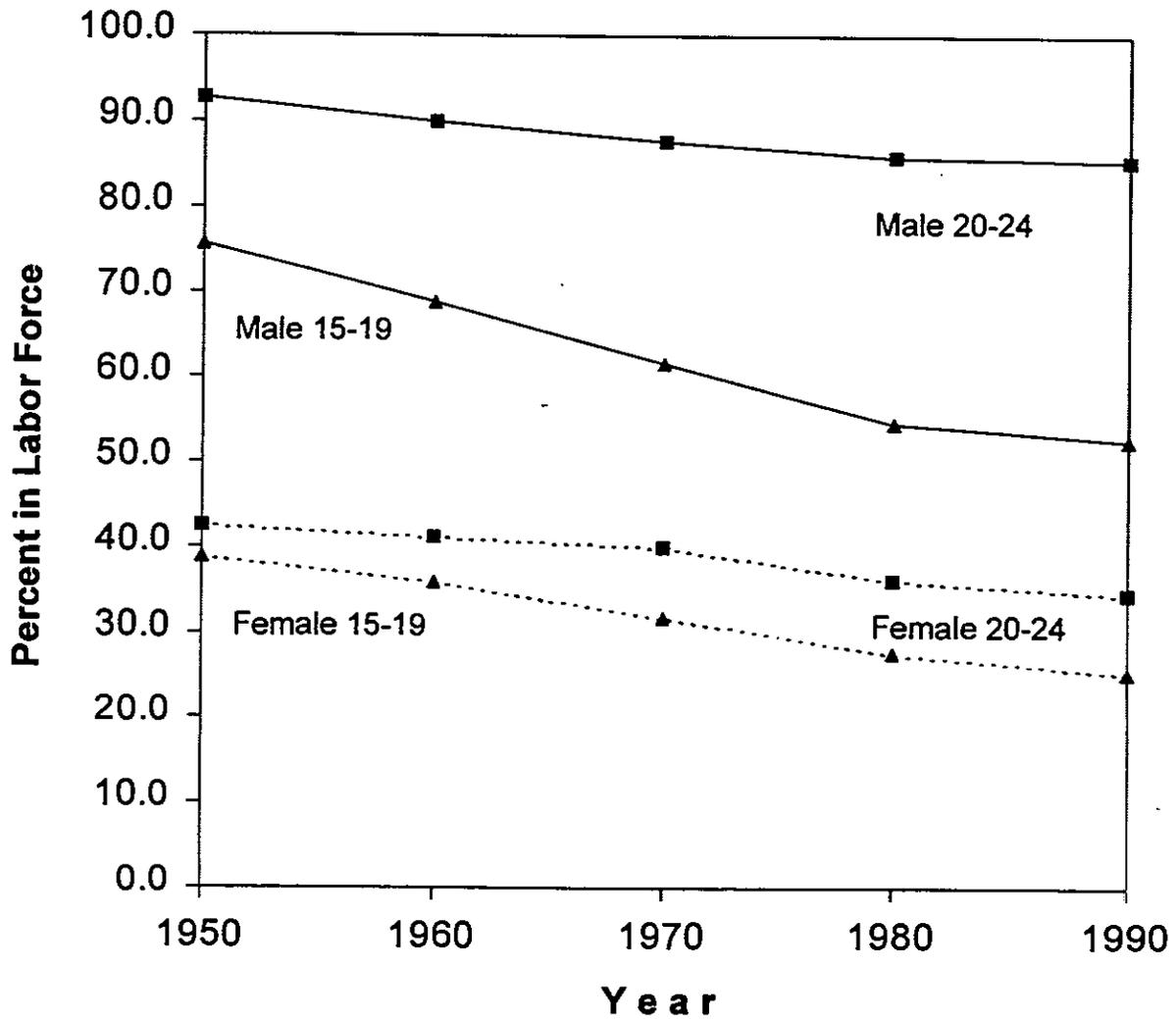
**Figure 1: Percents Single by Sex and Age Group: Asia (excluding China)**



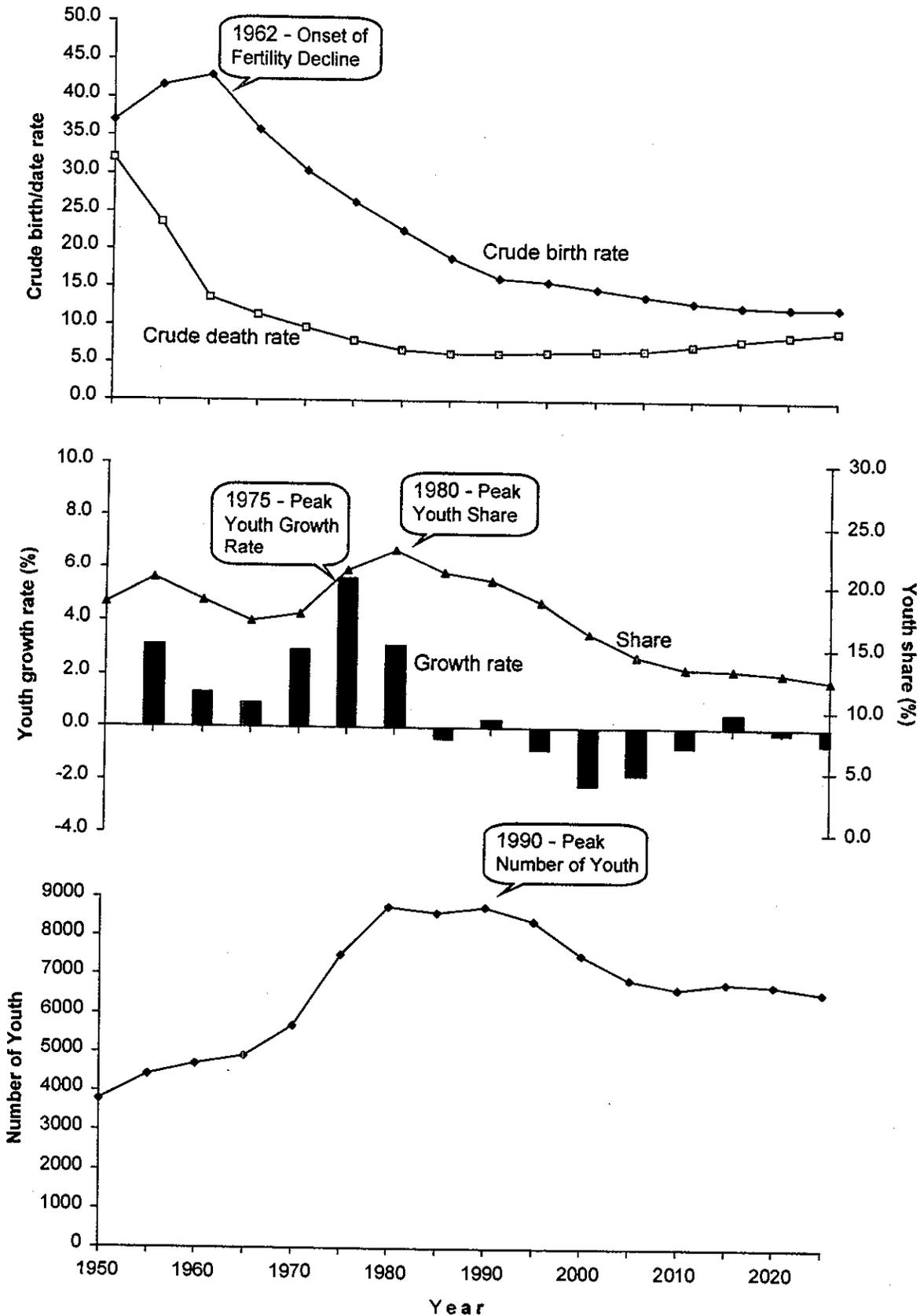
**Figure 2: Percents Enrolled by Sex and Age Group: Asia (excluding China)**



**Figure 3: Percents in Labor Force by Sex and Age Group: Asia (excluding China)**



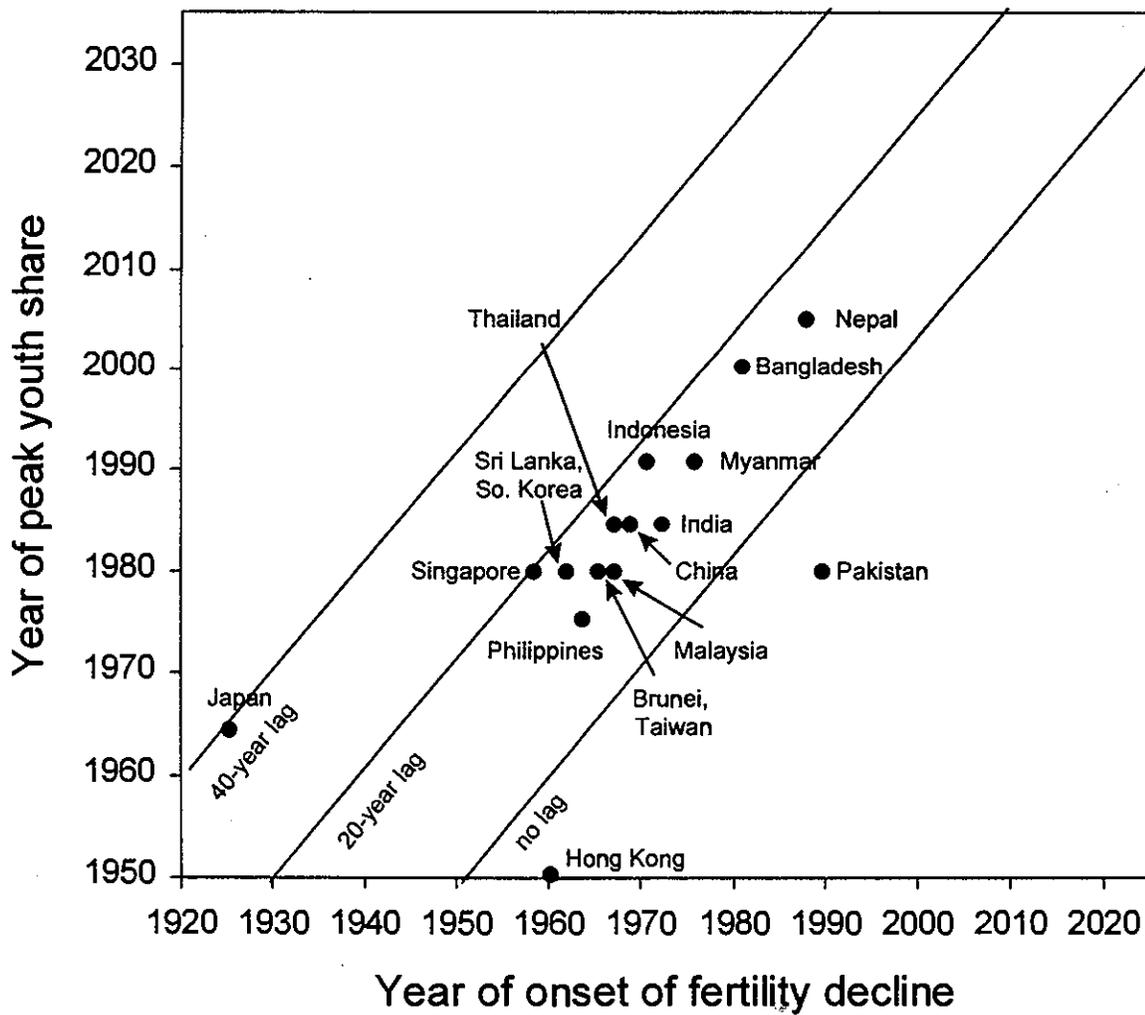
# Figure 4: The Demographic Youth Transition: Korea (South)



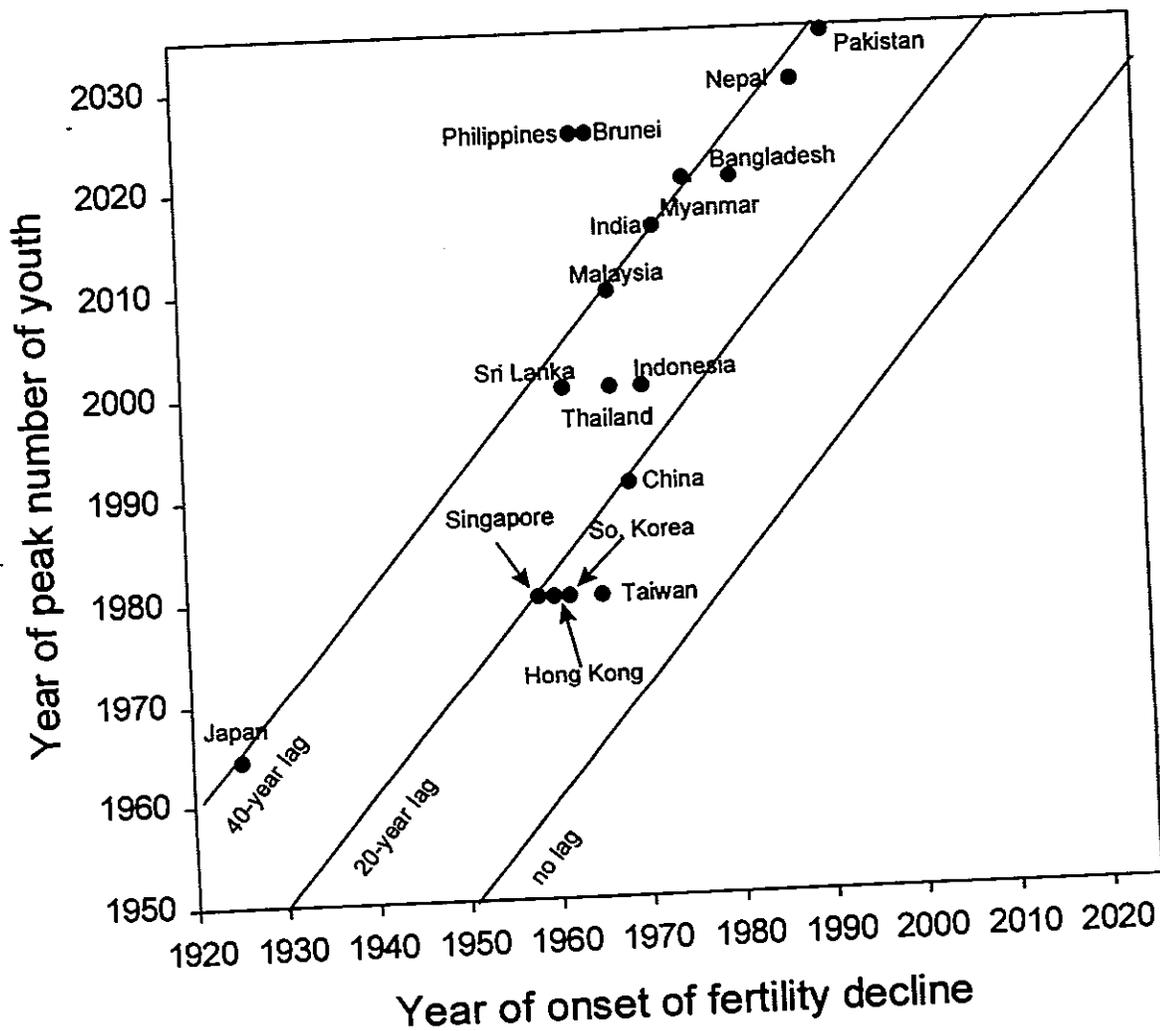
**Figure 5: Asian Youth Transition and Demographic Transition**

<u>Time Period</u>	<u>Stage</u>
1962	<u>Onset of fertility decline</u>
1965 - 1975	■ Rapid growth of youth population, with rate above total population growth rate
1975	<u>Peak youth growth rate</u>
1965 - 1980	■ Youth share of total population increasing
1980	<u>Youth share peaks</u>
1980 - onward	■ Youth growth rate below overall growth rate of population
	■ Youth share of total population decreasing
1990	<u>Youth population peaks</u>
1995 - onward	■ Youth growth rate negative
	■ Youth population declines

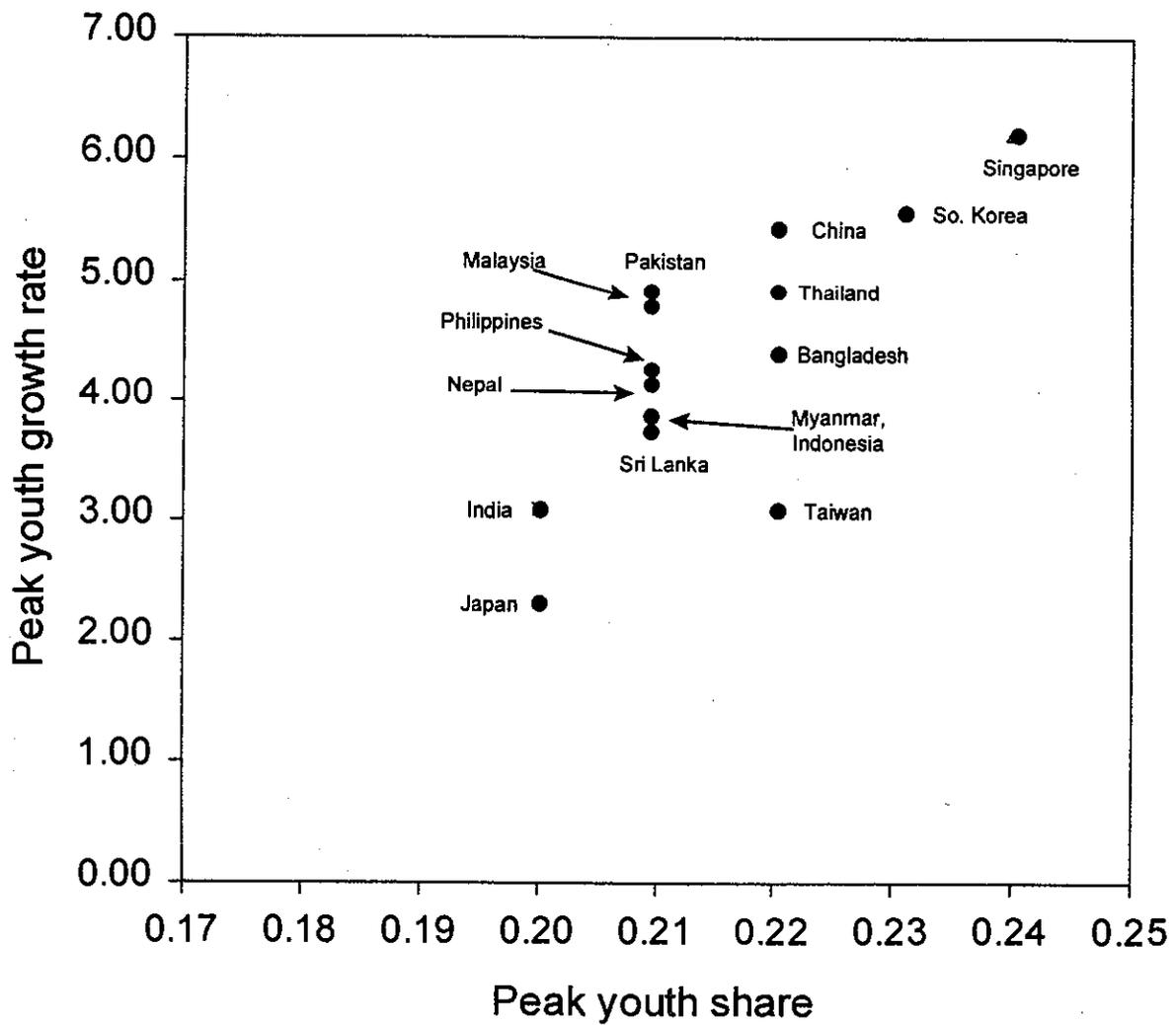
**Figure 6: Interval From Fertility Decline to Peak Youth Share**



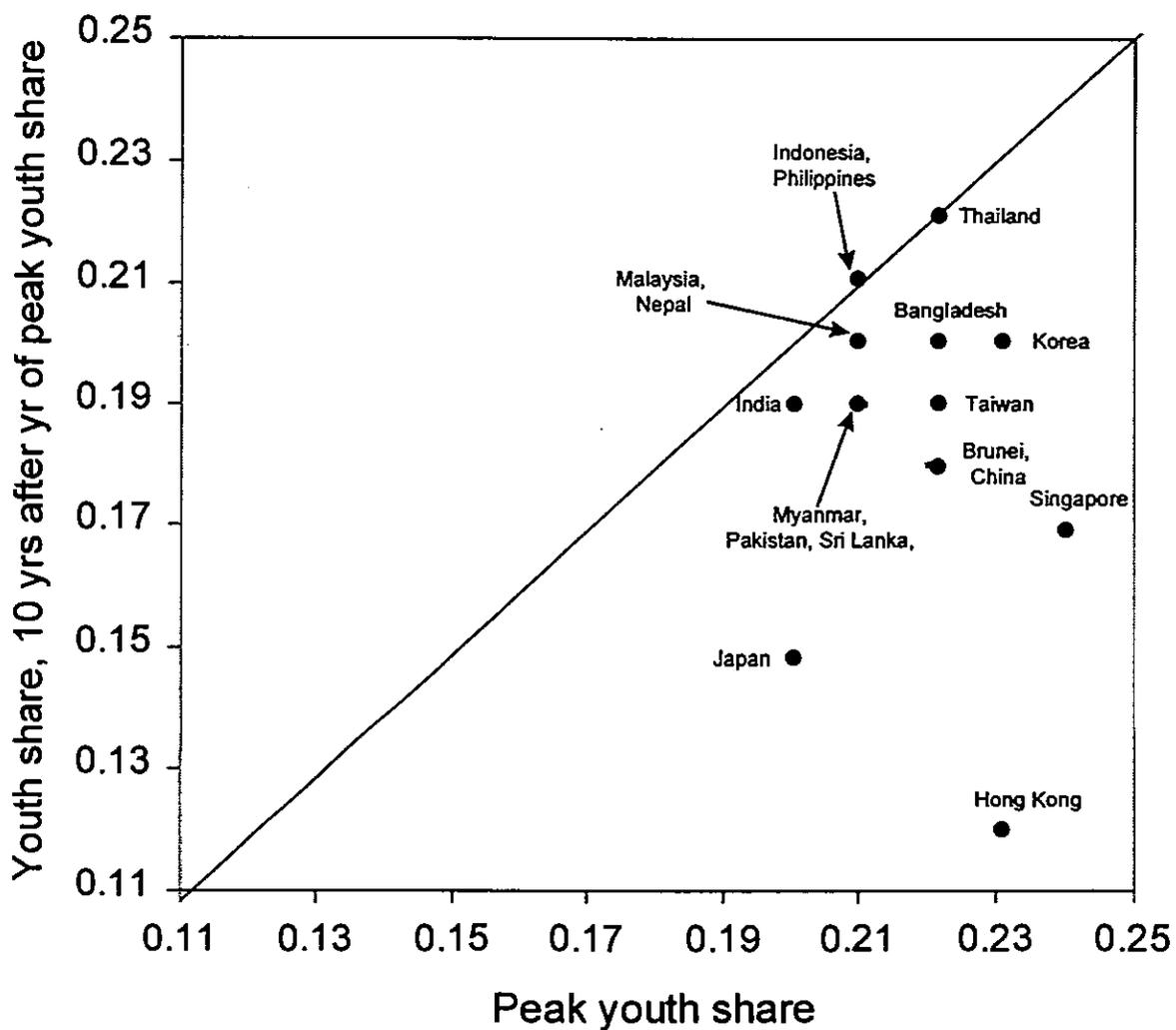
**Figure 7: Interval From Fertility Decline to Peak Number of Youth**



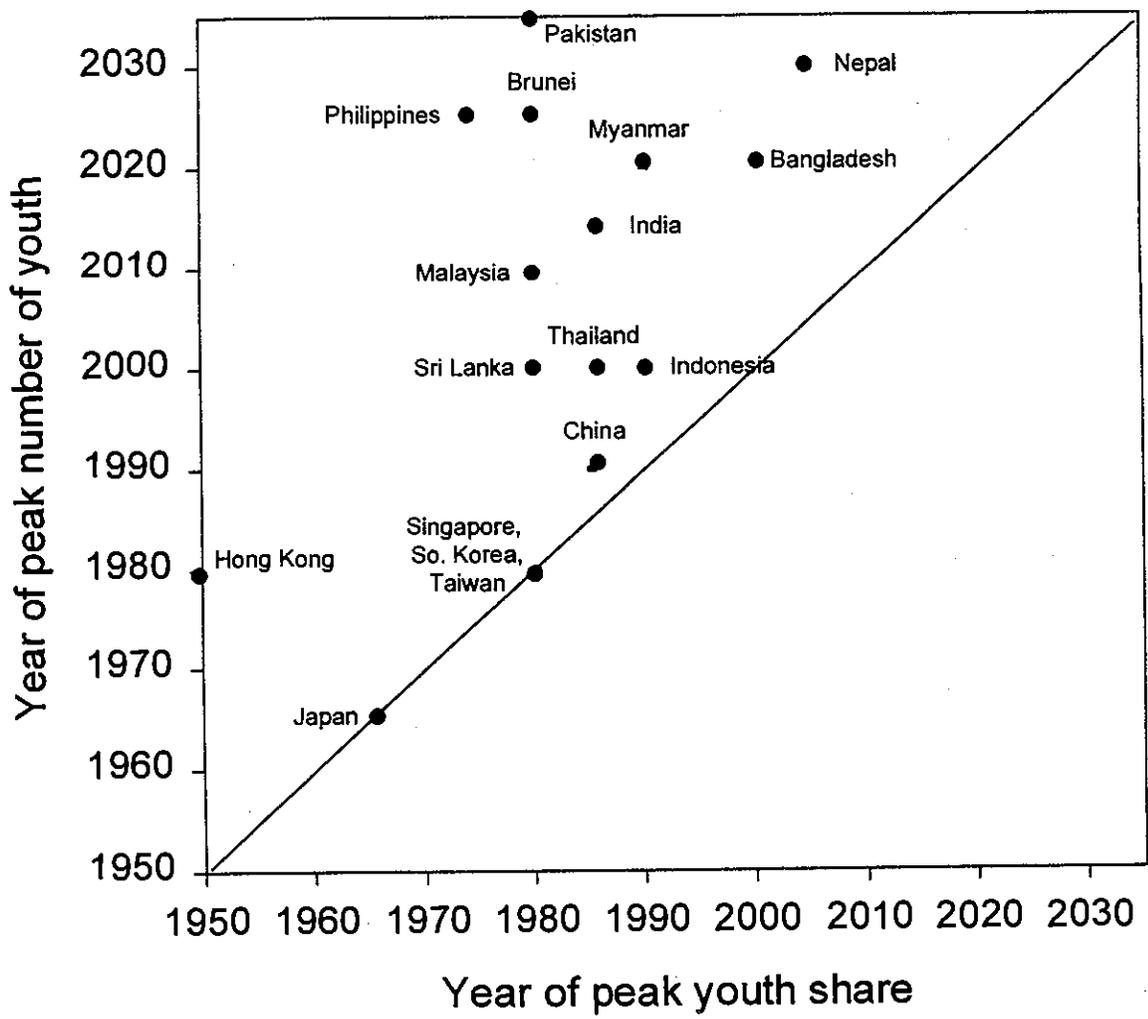
**Figure 8: Relationship Between Peak Youth Share and Peak Youth Growth Rate**

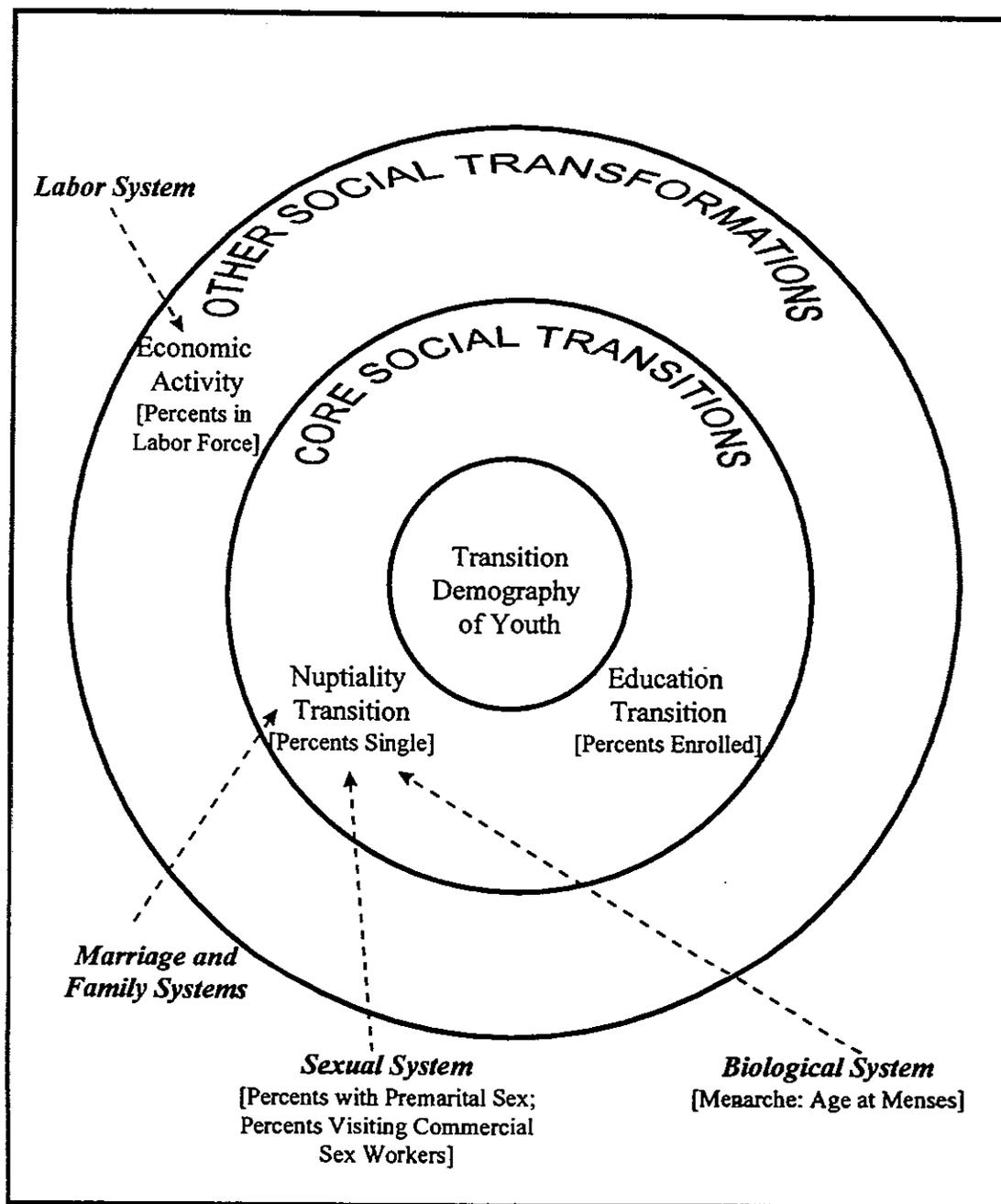


**Figure 9: Relationship Between Peak Youth Share and Youth Share Ten Years Later**



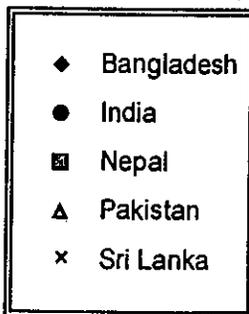
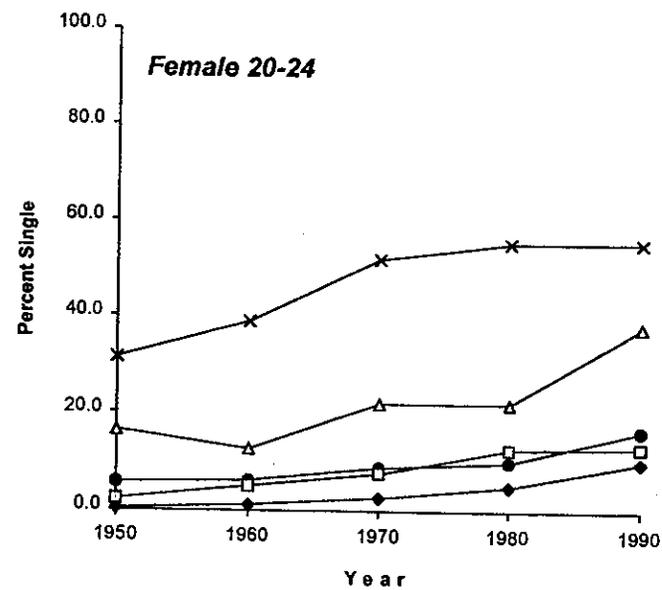
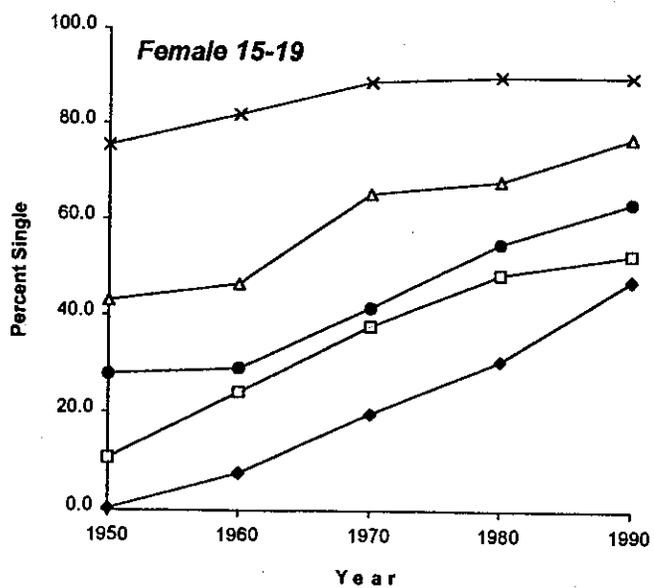
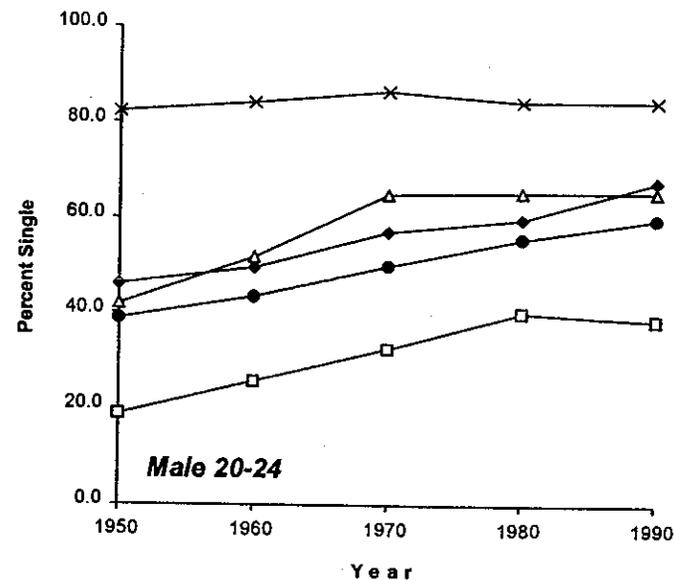
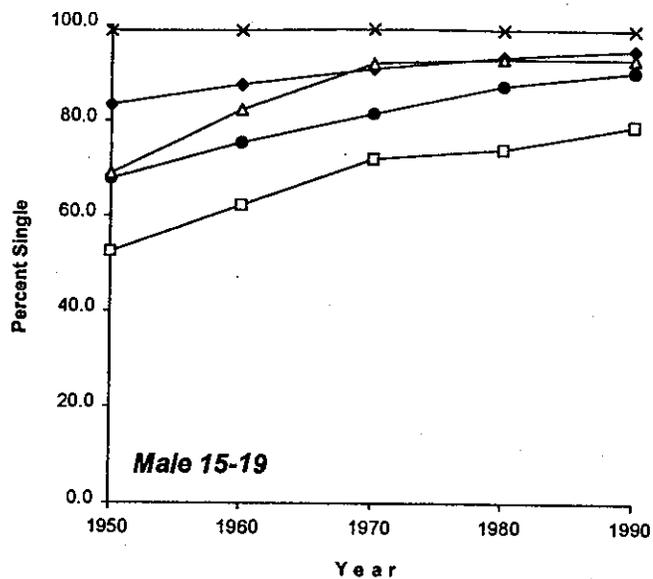
**Figure 10: Interval From Peak Youth Share to Peak Number of Youth**



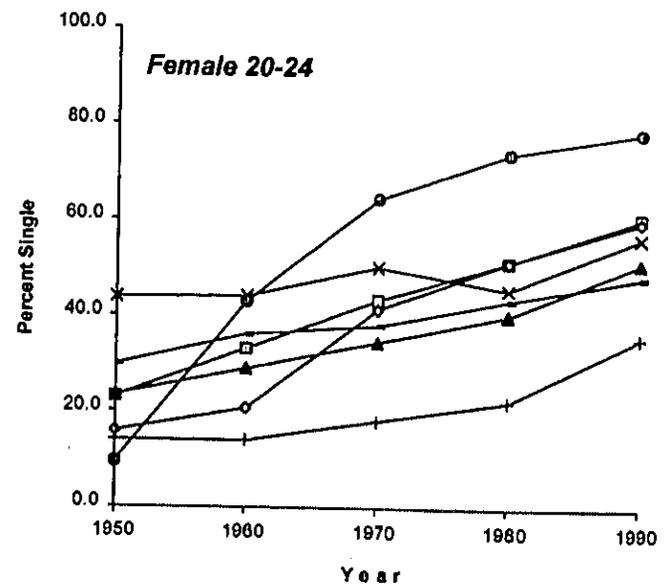
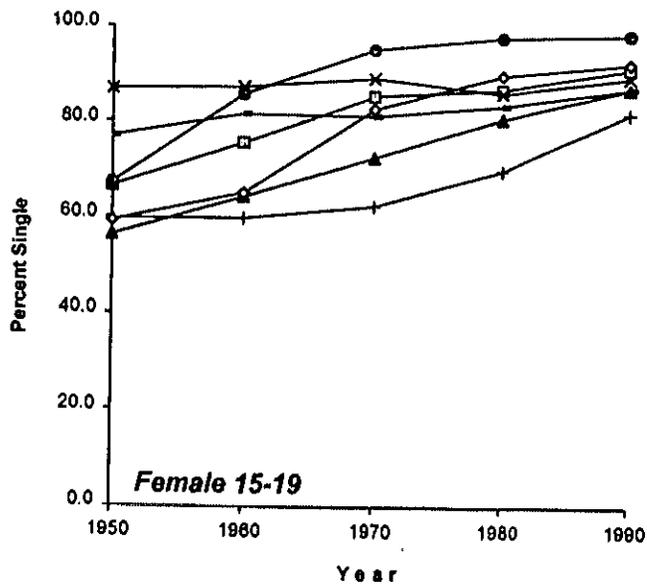
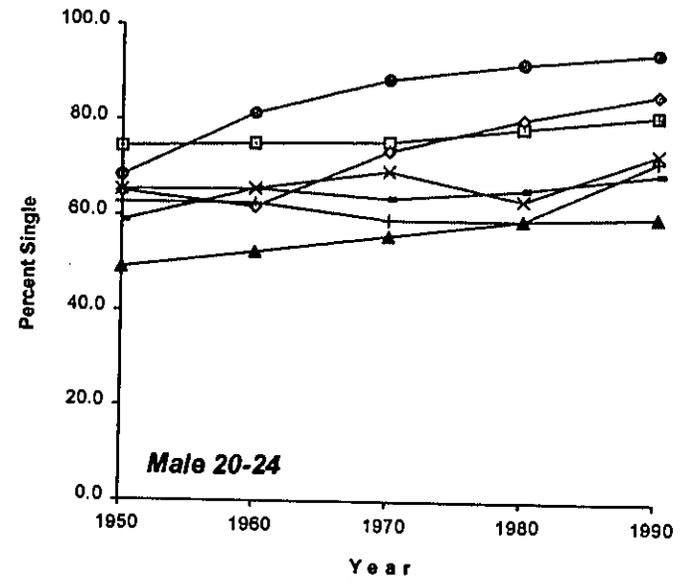
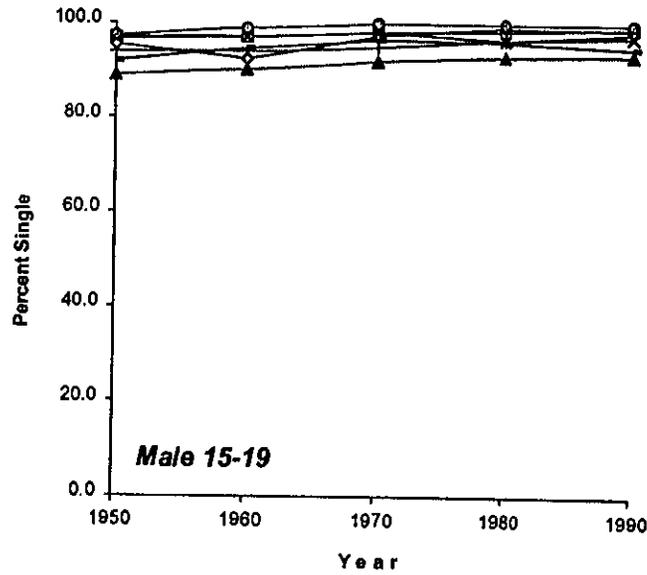


**Figure 11: Elements of the Youth Transition**

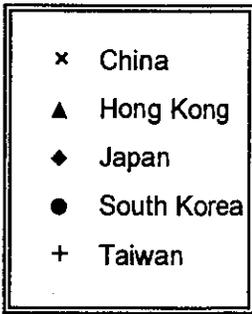
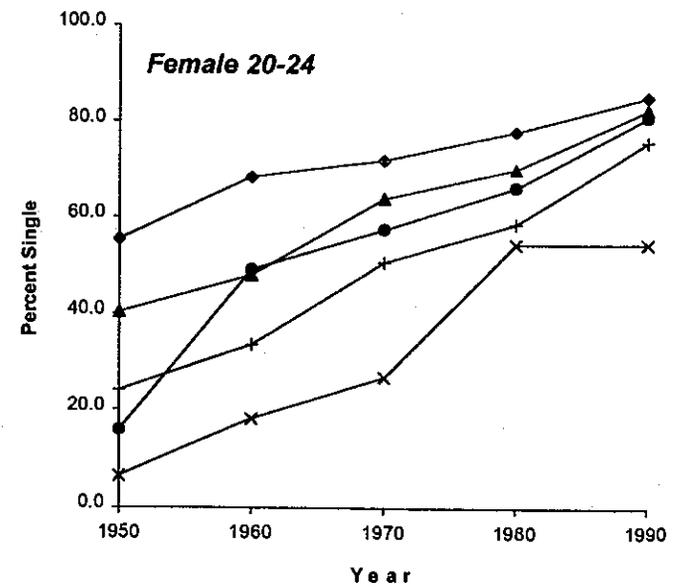
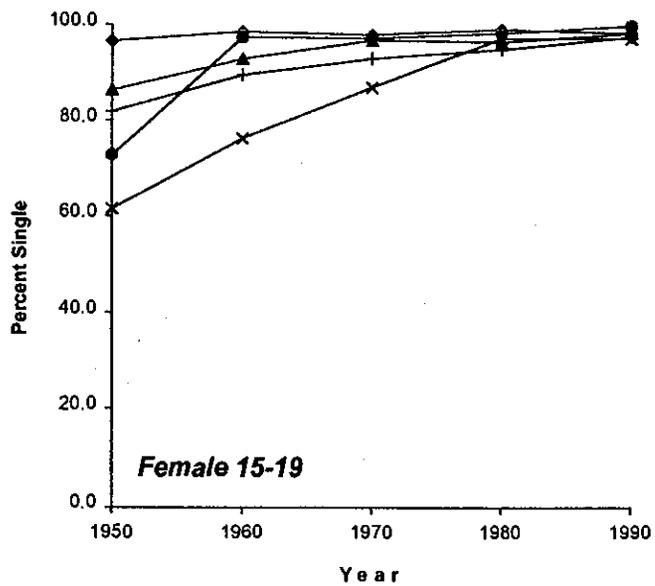
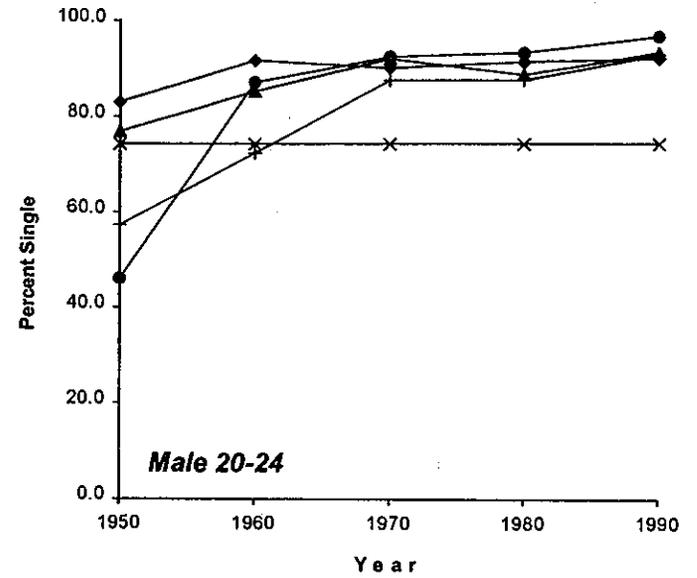
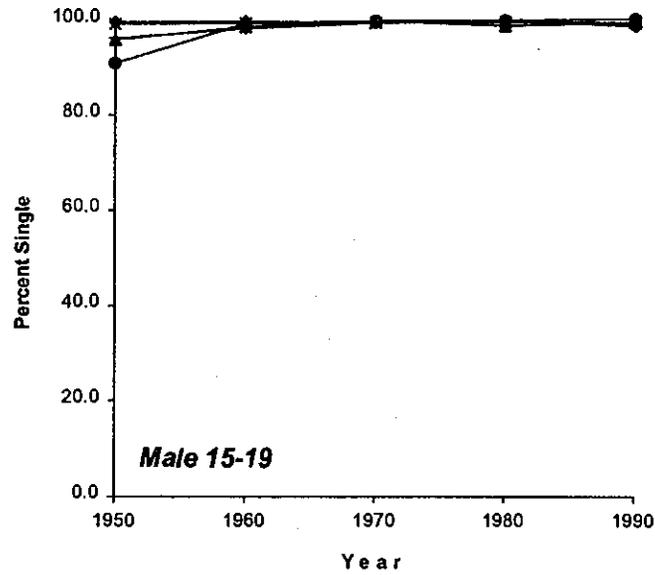
# Figure 12a: Percents Single, South Asia



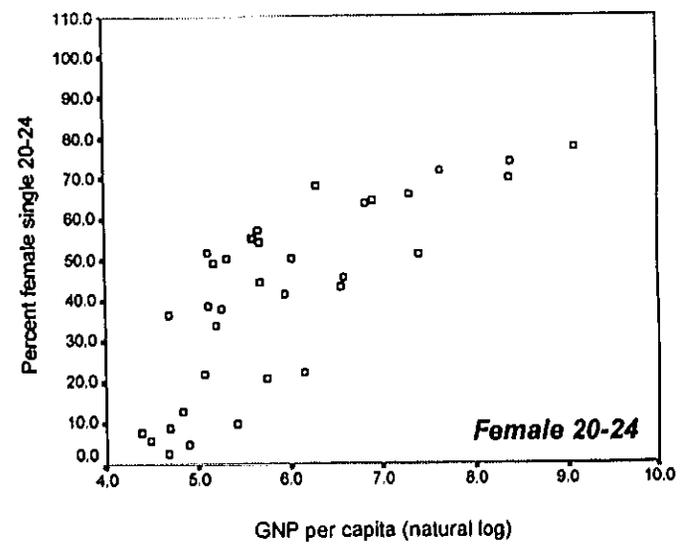
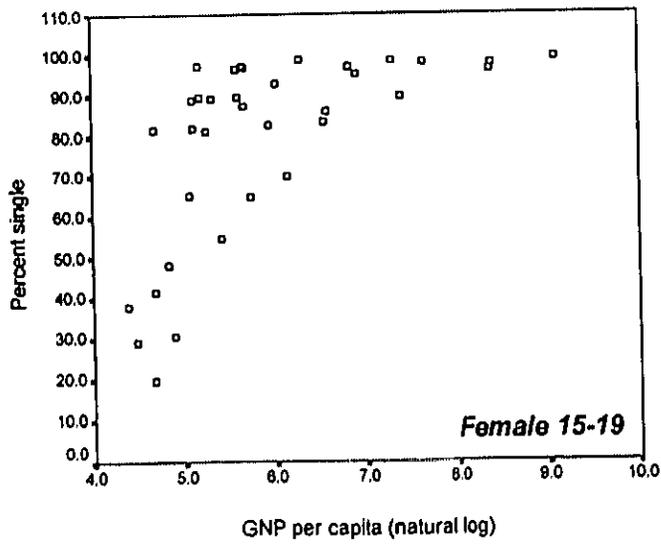
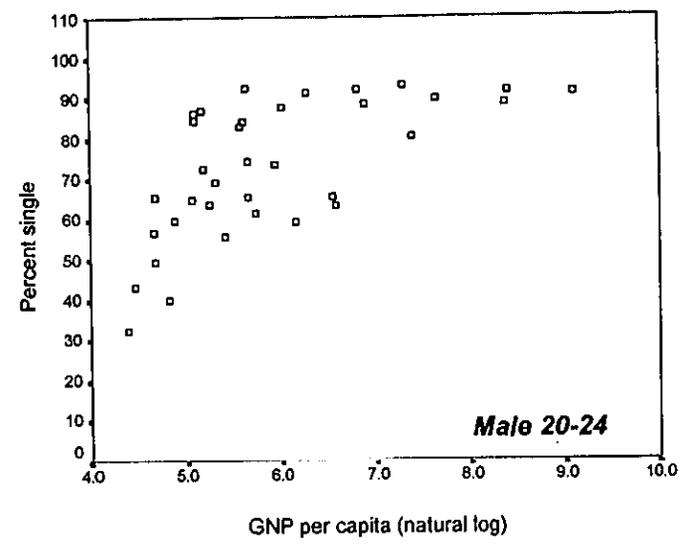
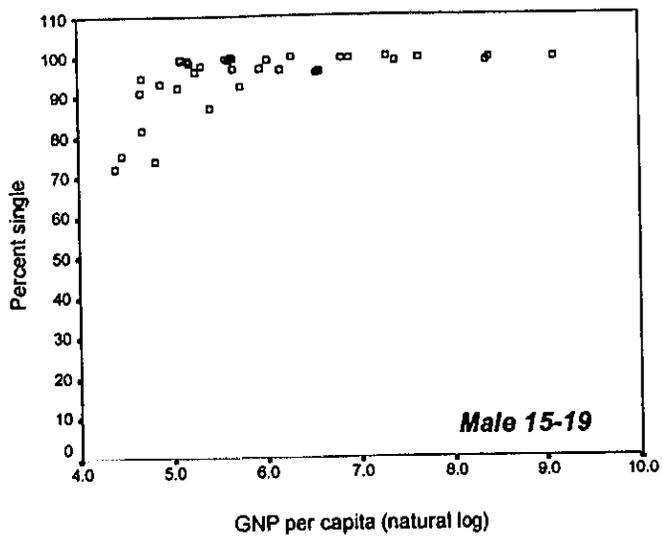
# Figure 12b: Percents Single, Southeast Asia



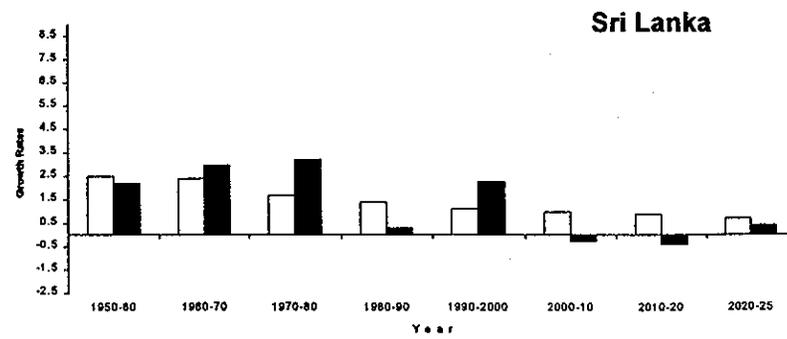
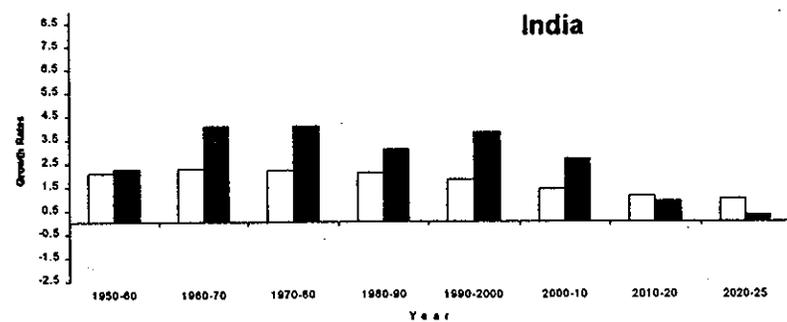
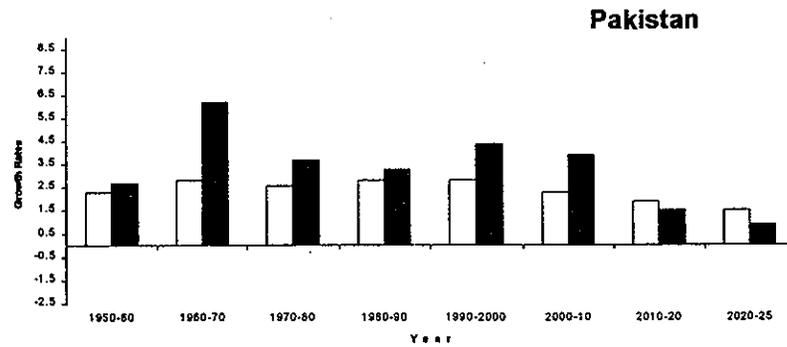
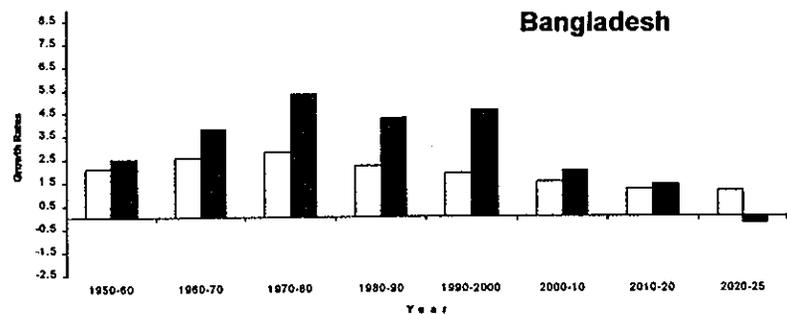
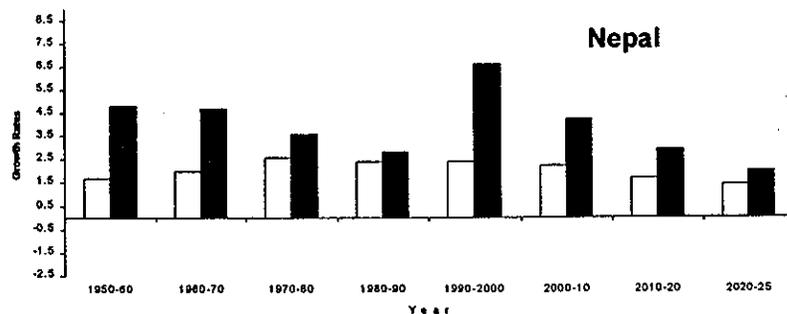
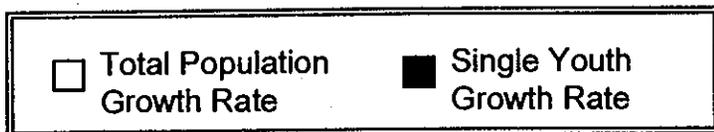
# Figure 12c: Percents Single, East Asia



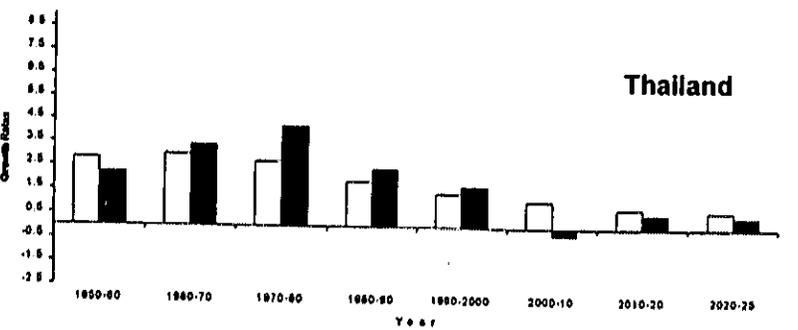
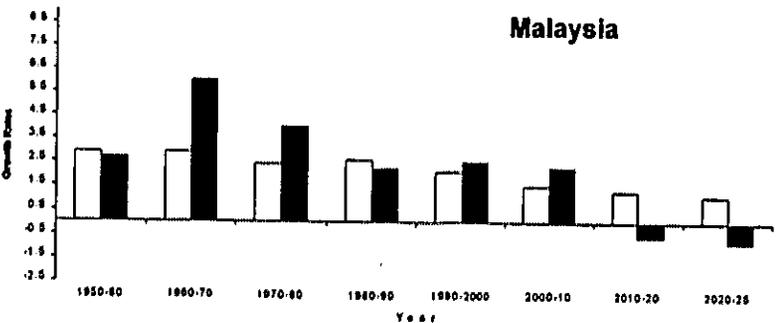
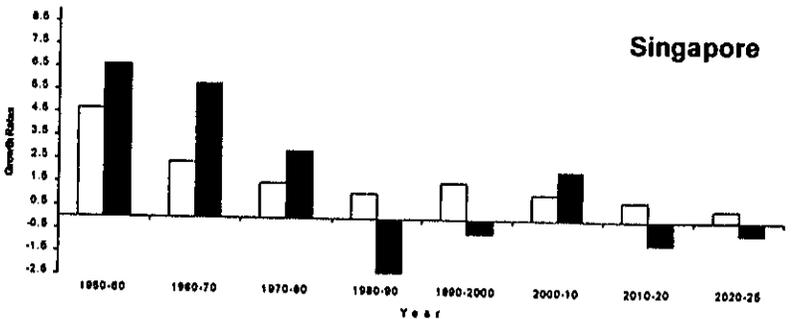
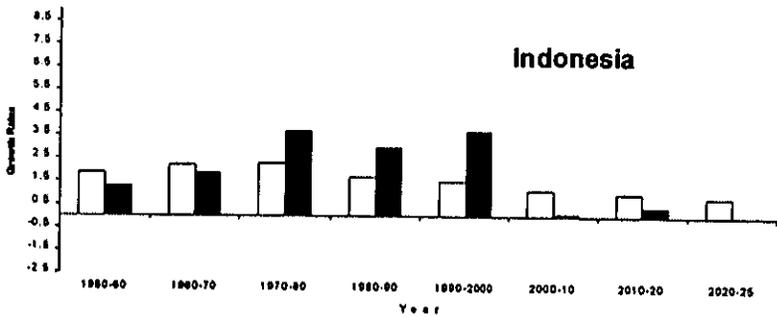
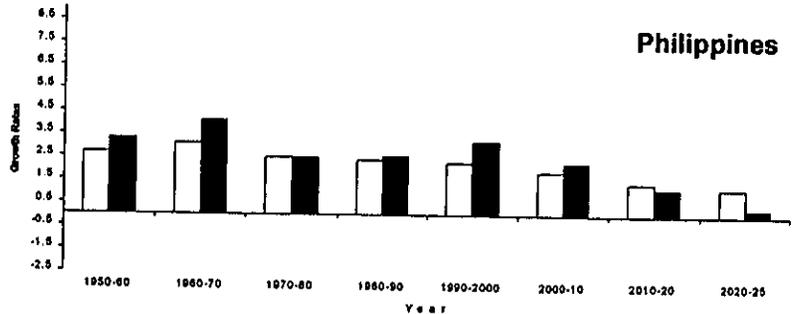
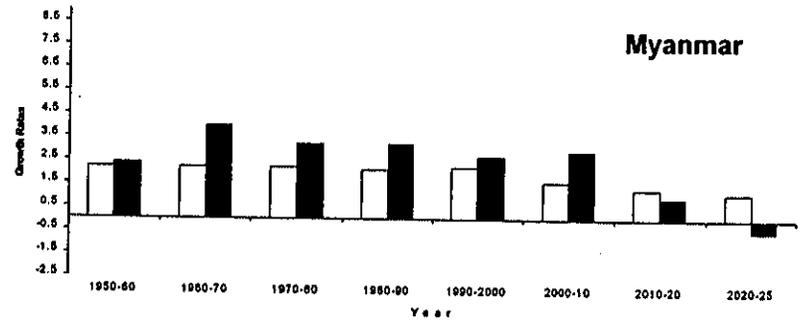
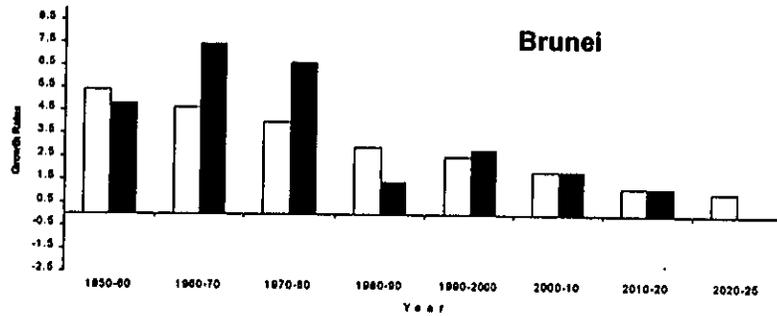
# Figure 13: Percent Single and GNP per Capita



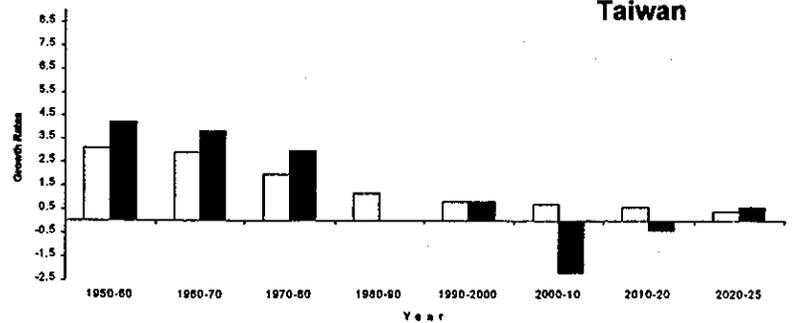
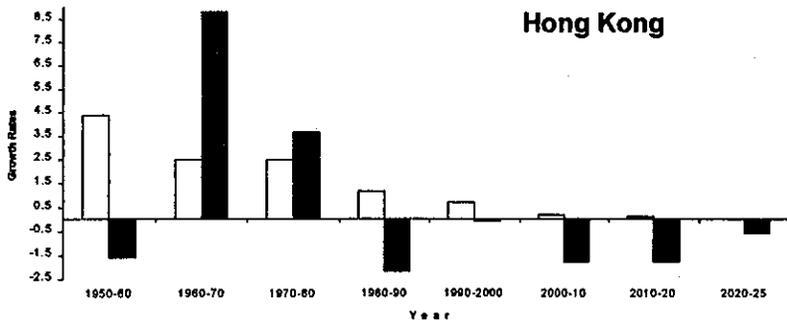
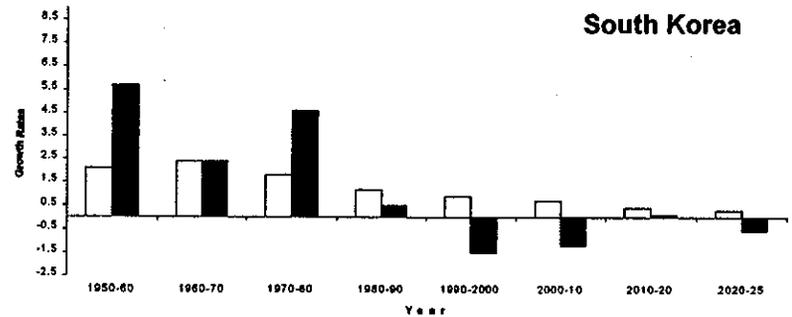
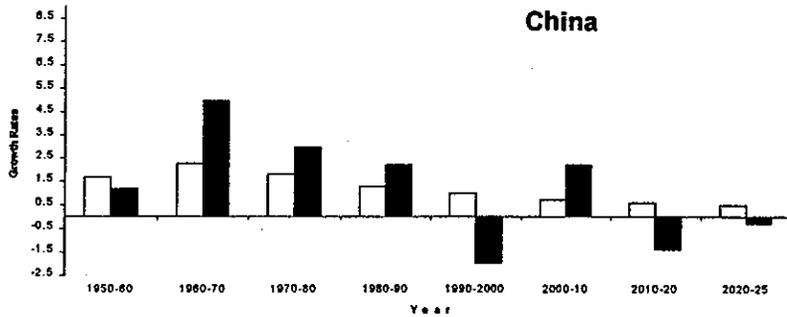
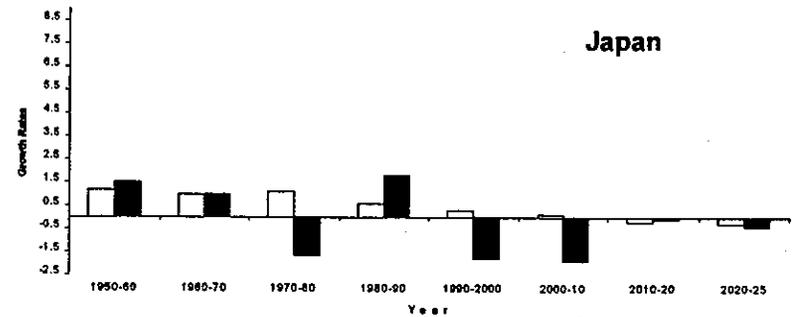
# Figure 14a: Total Population and Single Youth Growth Rates: South Asia

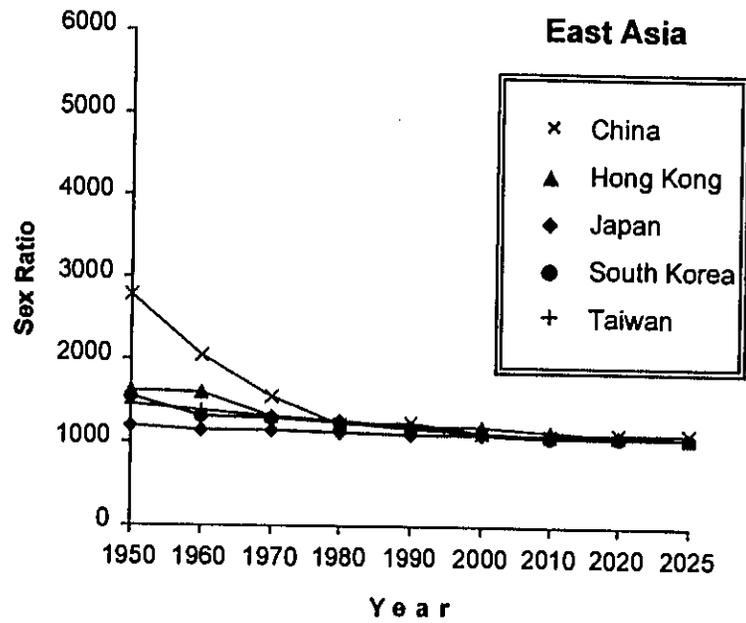


**Figure 14b: Total Population and Single Youth Growth Rates: Southeast Asia**

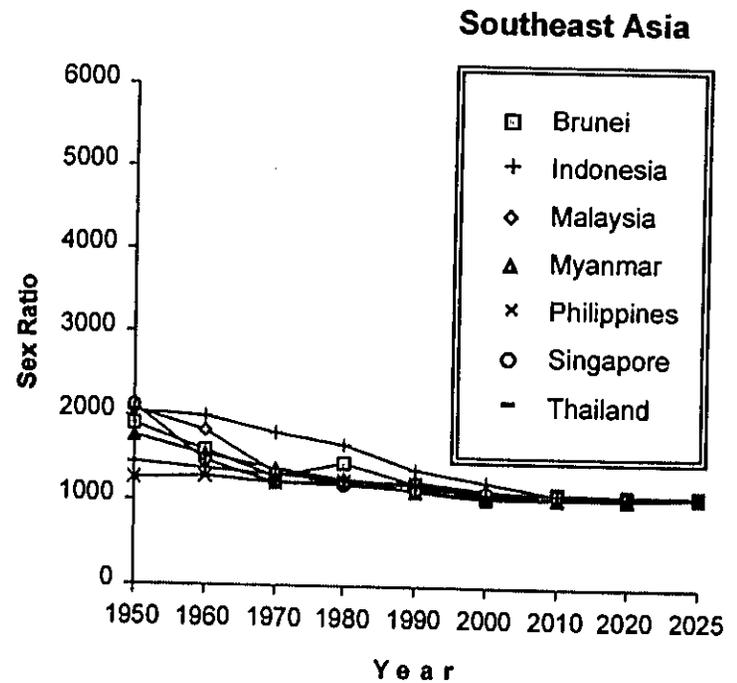
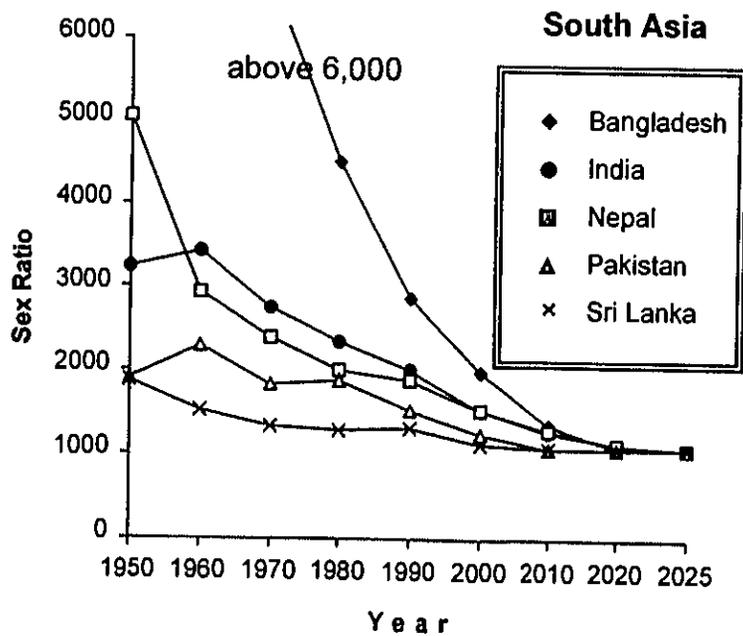


# Figure 14c: Total Population and Single Youth Growth Rates: East Asia

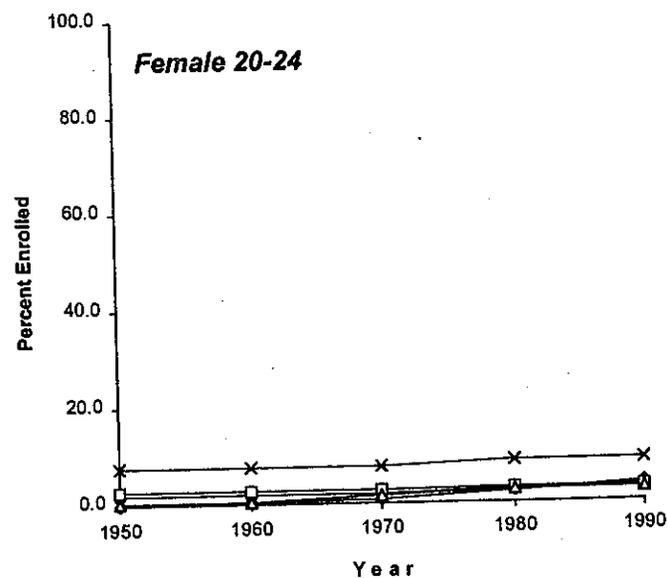
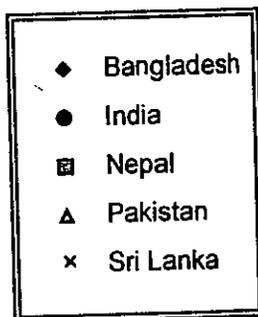
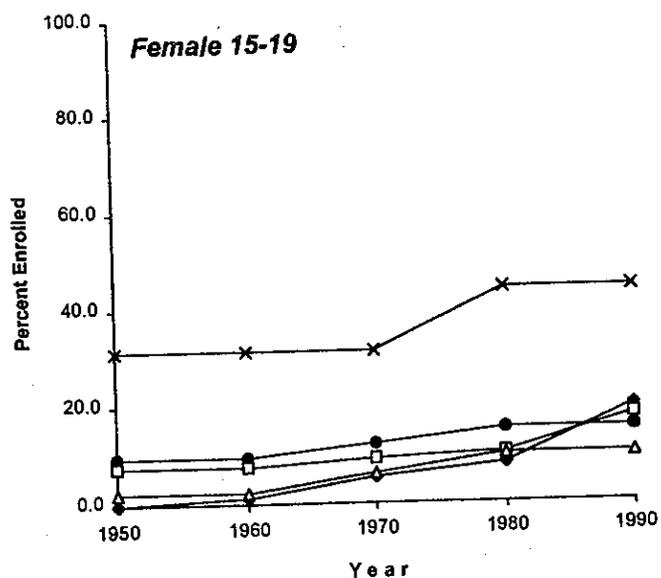
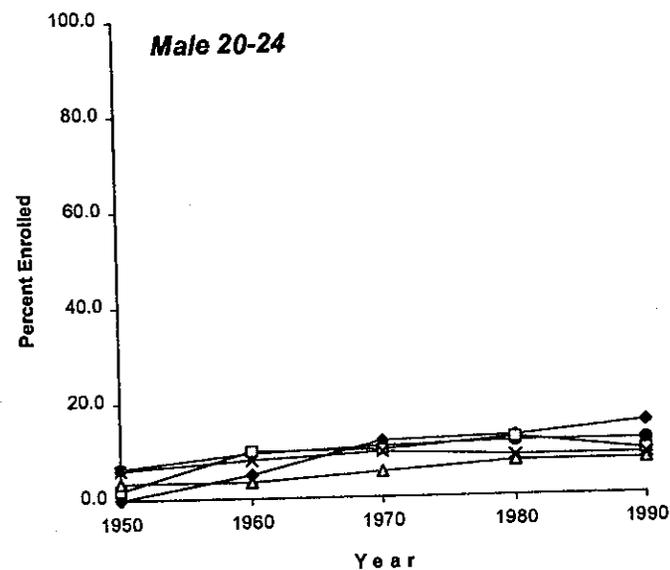
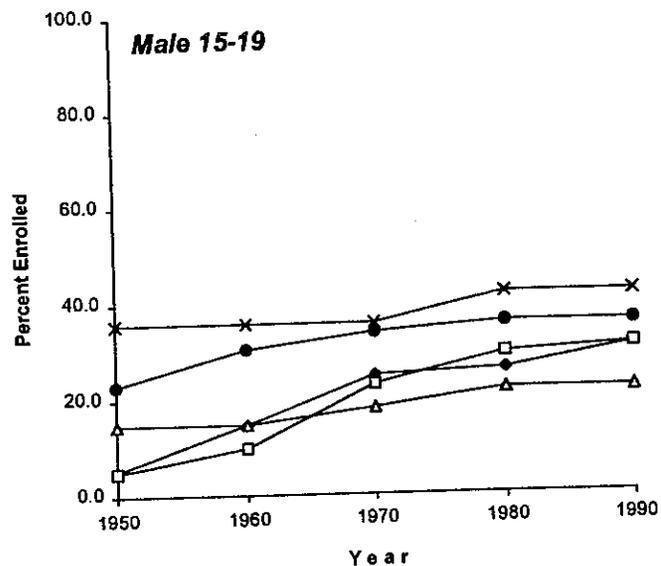




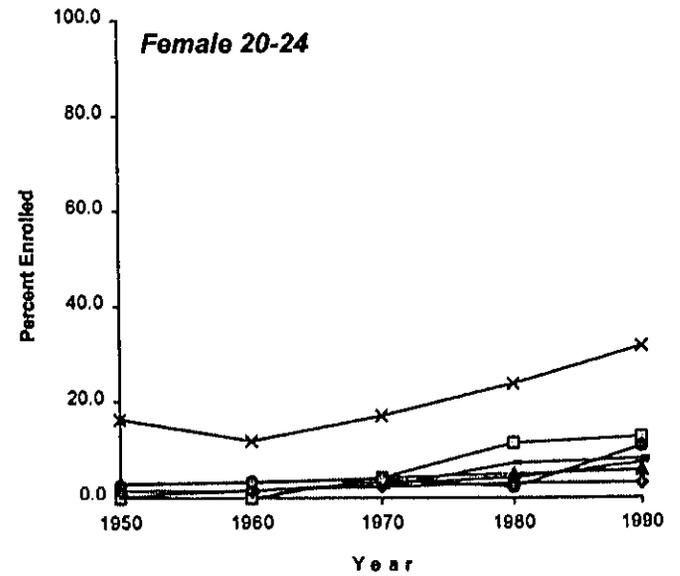
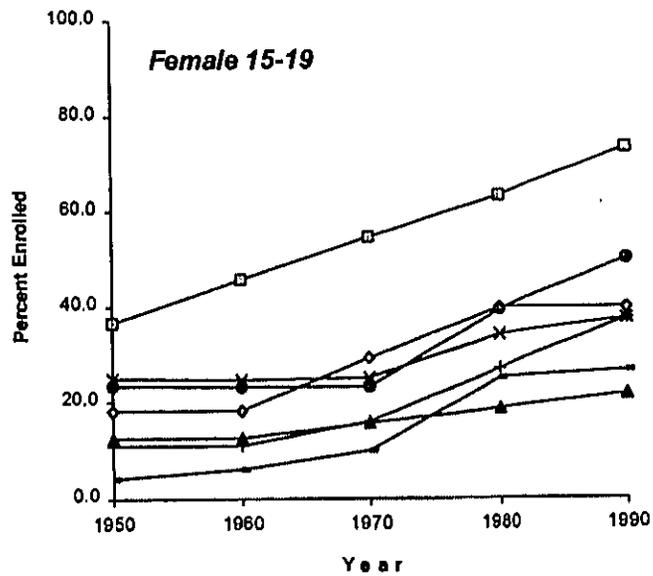
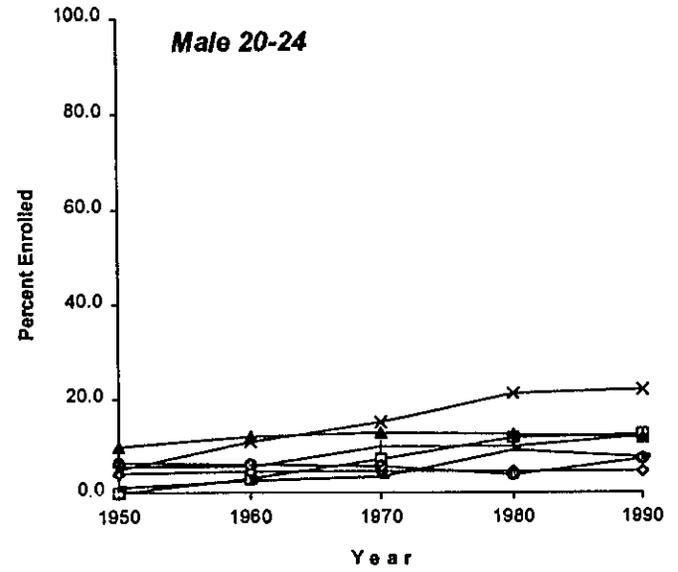
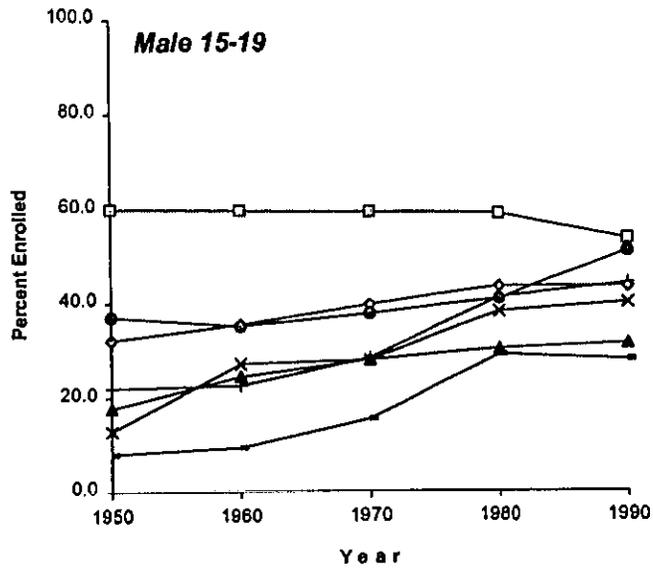
**Figure 15: Single Youth Sex Ratios**



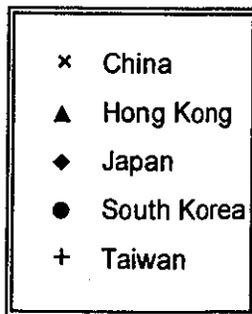
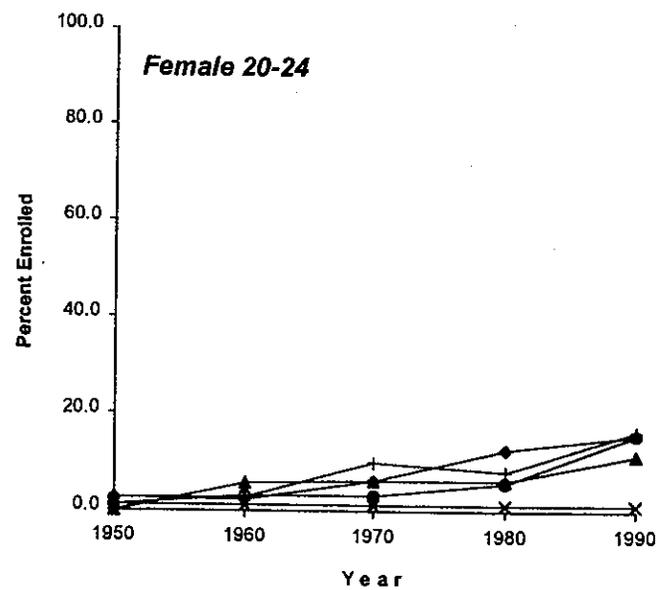
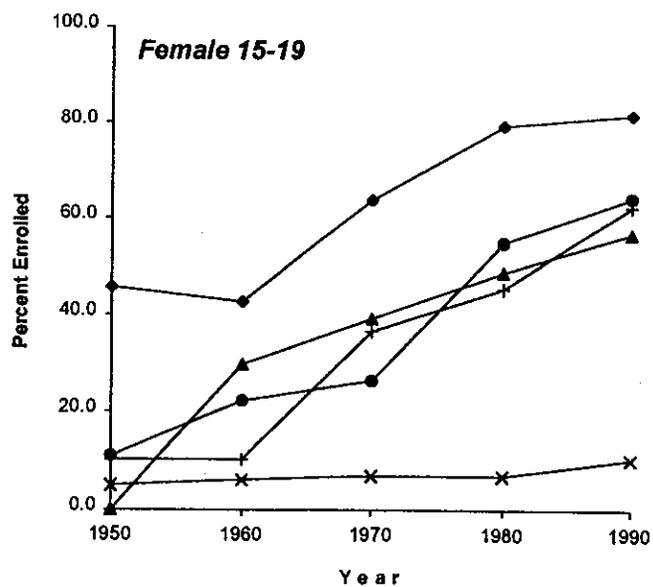
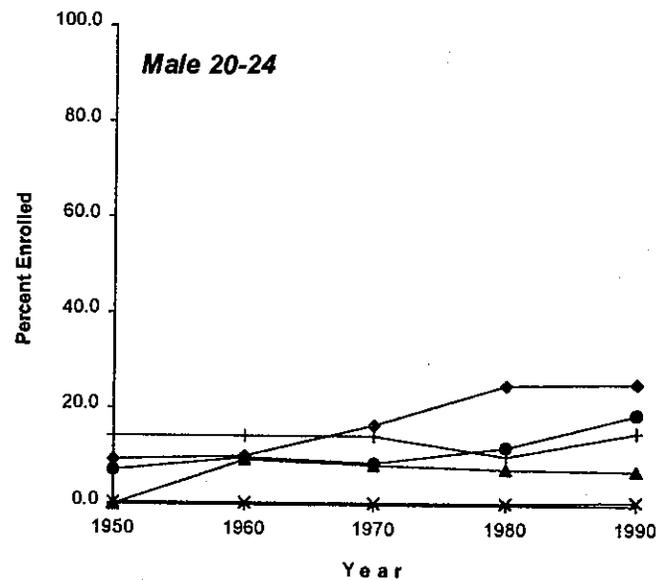
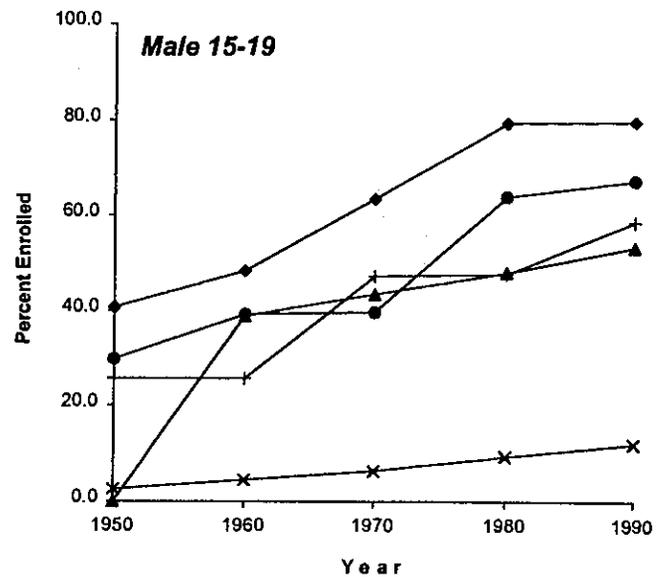
# Figure 16a: Percents Enrolled, South Asia



# Figure 16b: Percents Enrolled, Southeast Asia

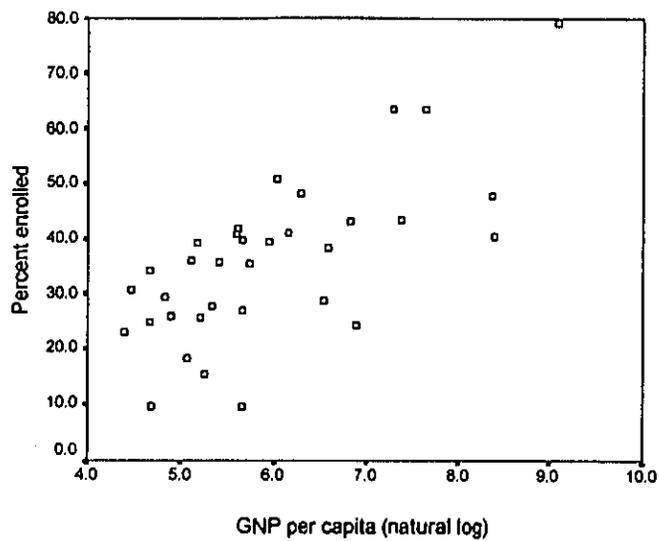


# Figure 16c: Percents Enrolled, East Asia

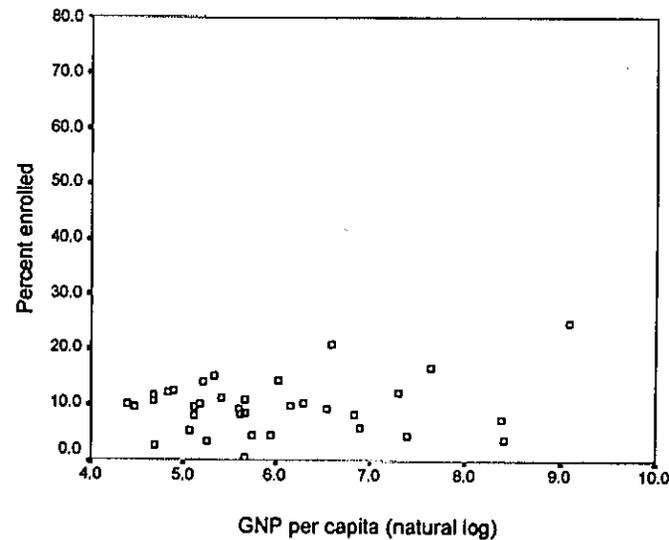


# Figure 17: Percent Enrolled and GNP per Capita

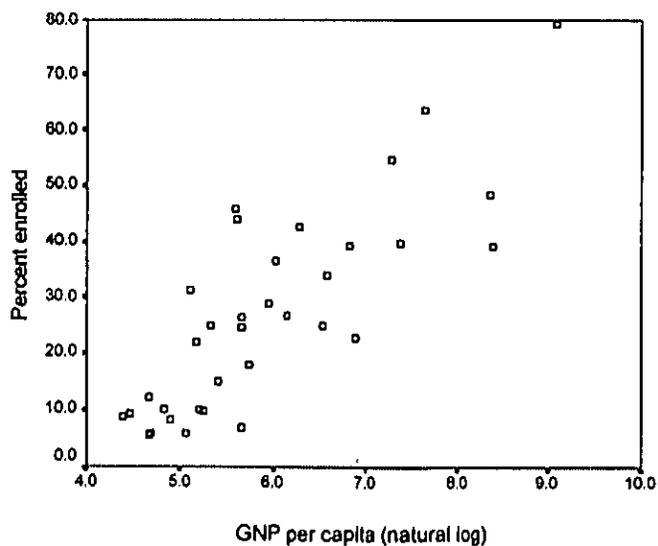
## Male 15-19



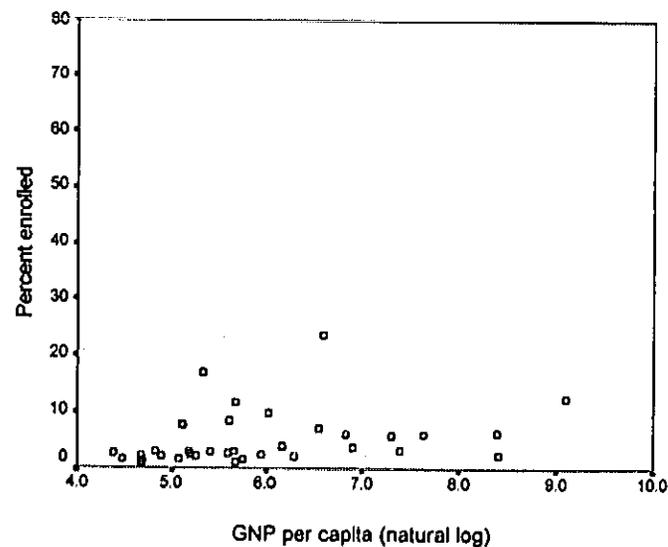
## Male 20-24



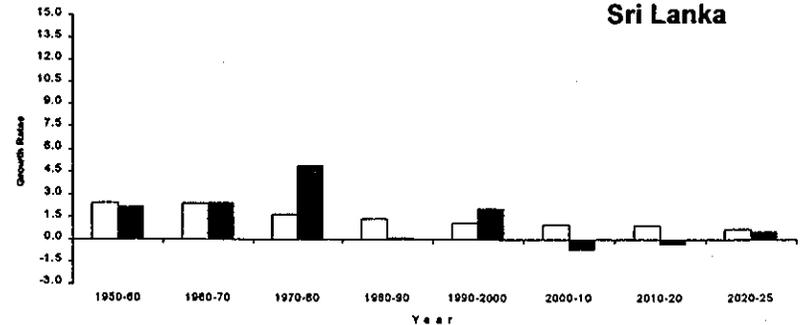
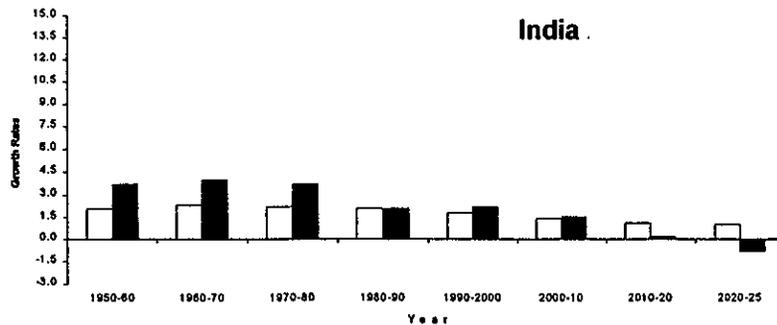
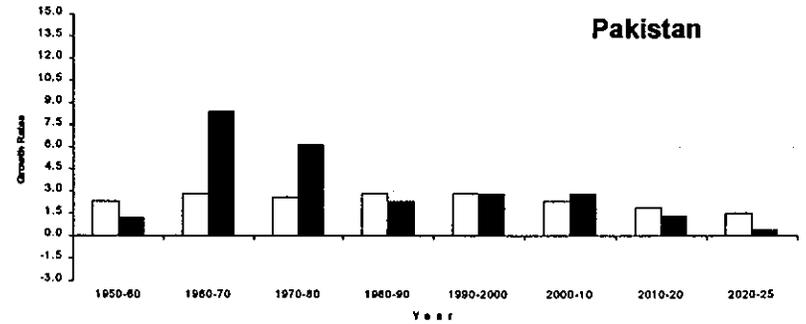
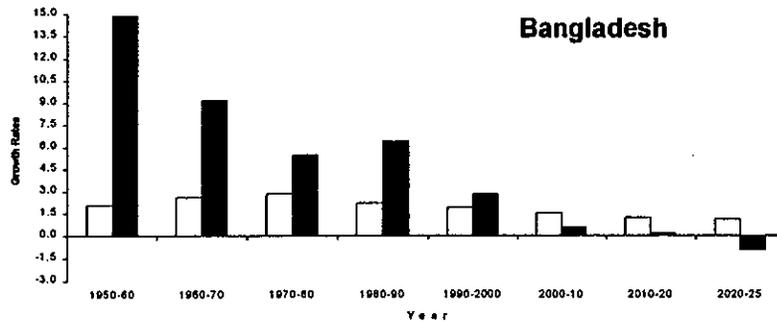
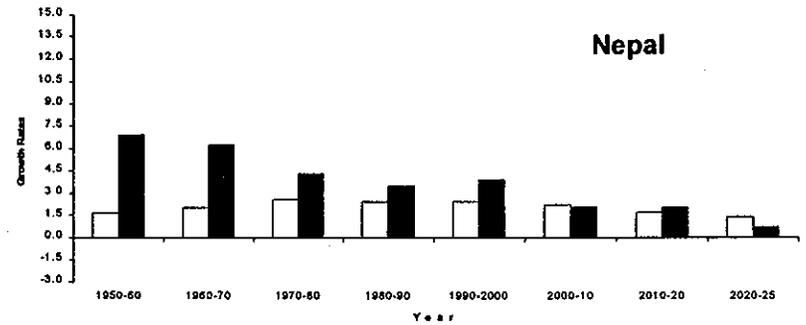
## Female 15-19



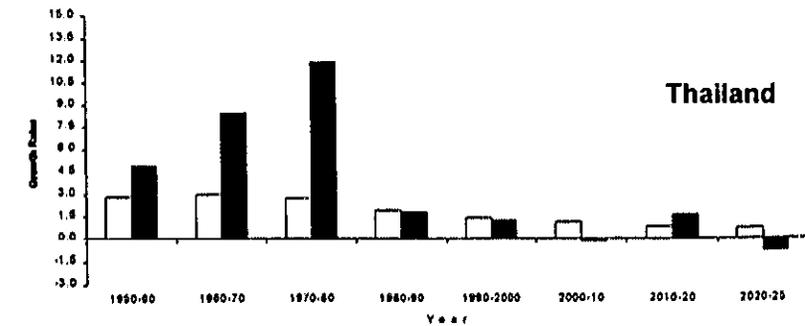
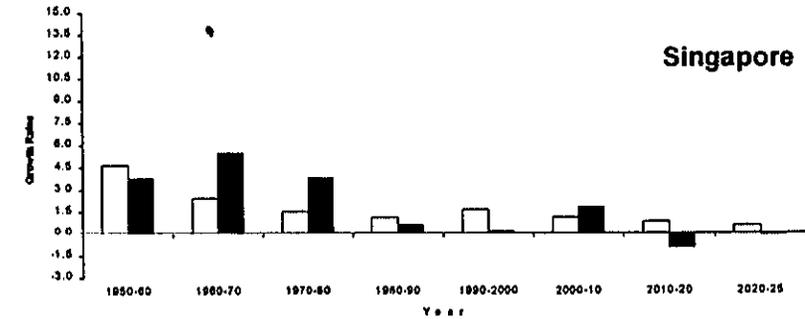
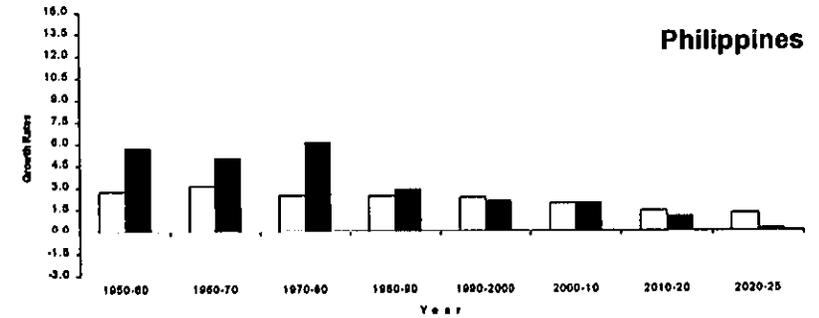
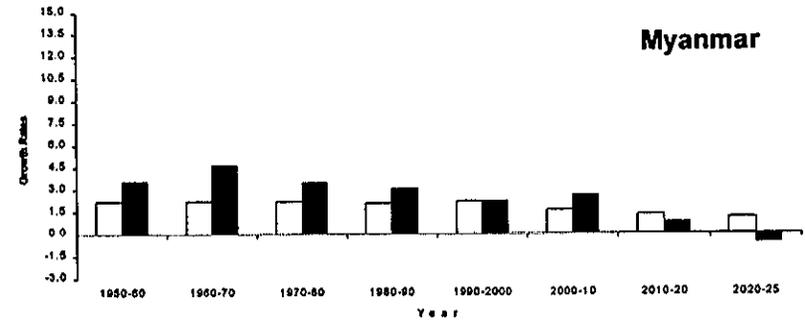
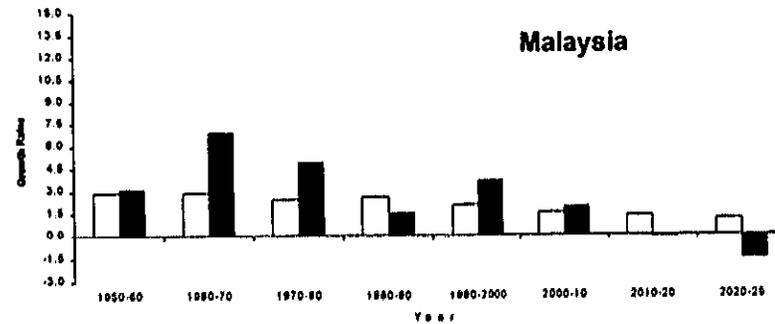
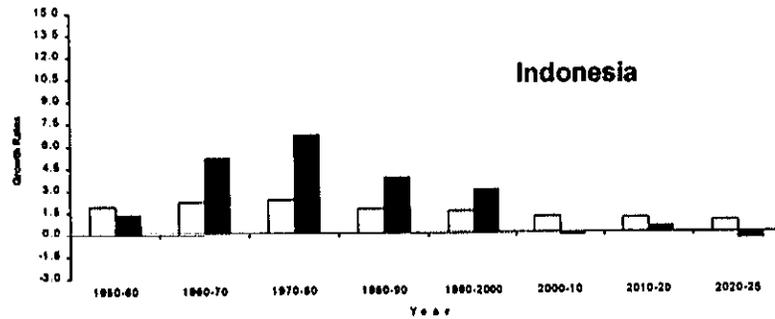
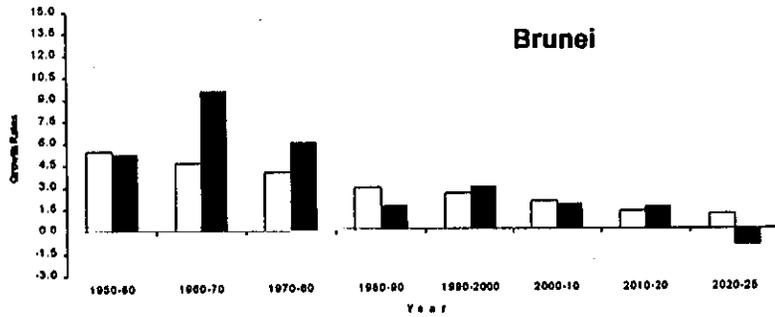
## Female 20-24



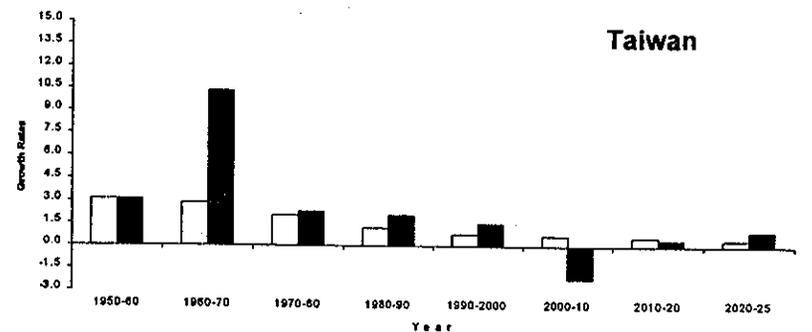
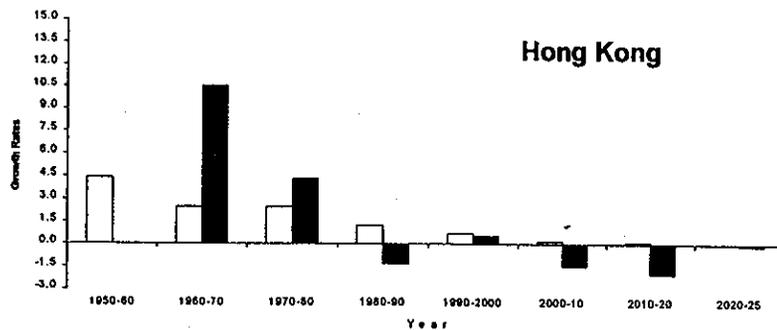
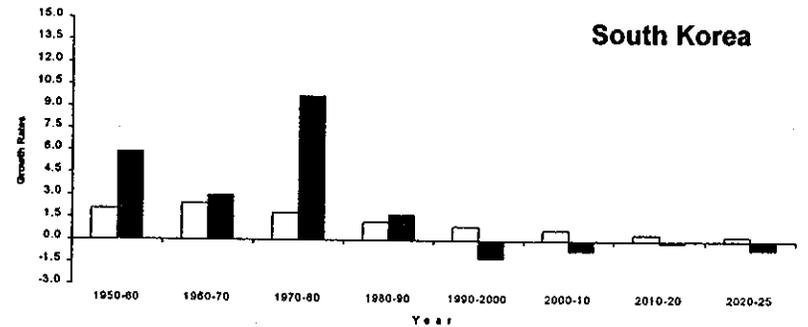
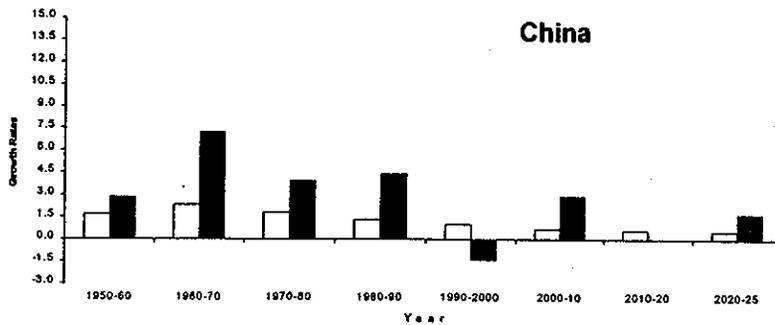
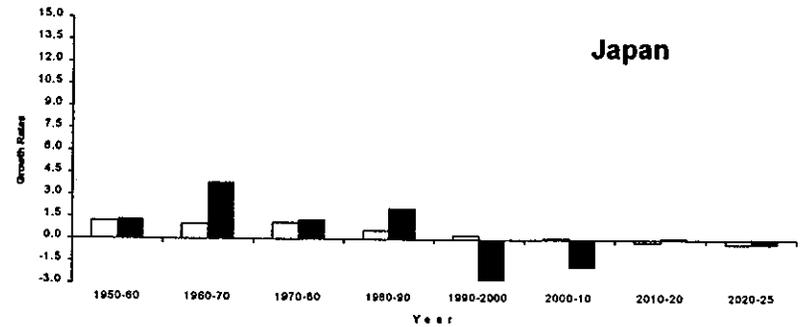
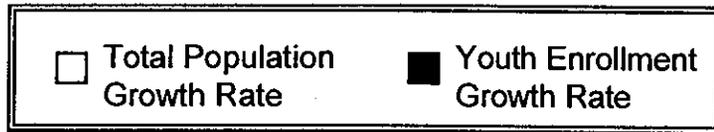
# Figure 18a: Total Population and Youth Enrollment Growth Rates: South Asia

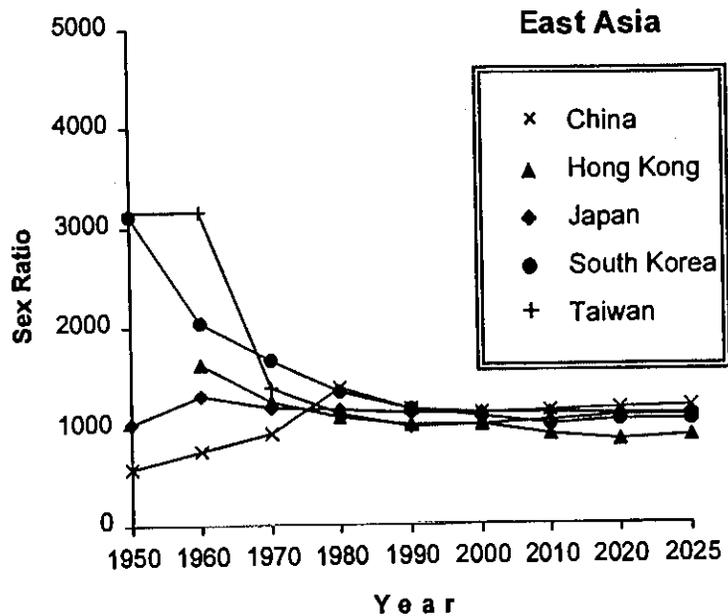


# Figure 18b: Total Population and Youth Enrollment Growth Rates: Southeast Asia

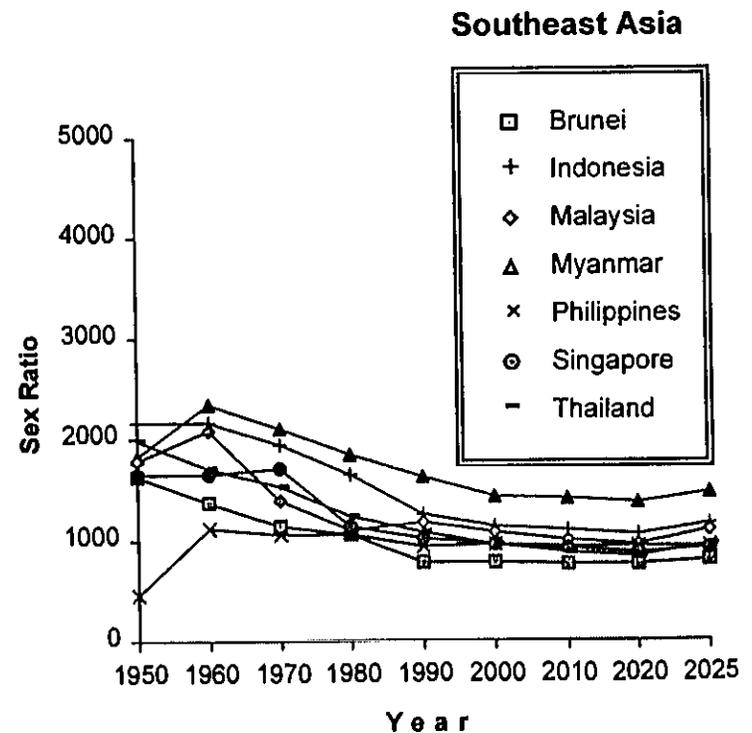
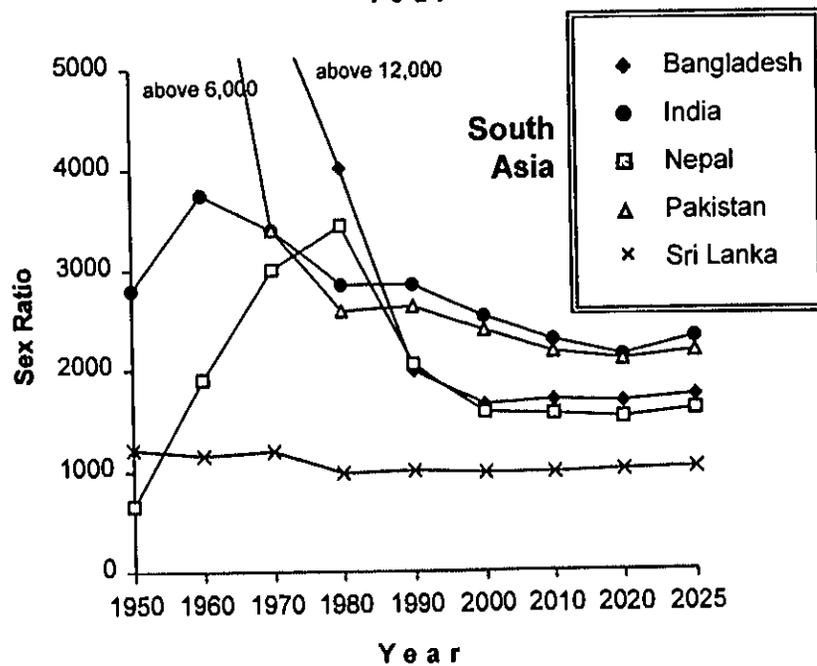


# Figure 18c: Total Population and Youth Enrollment Growth Rates: East Asia

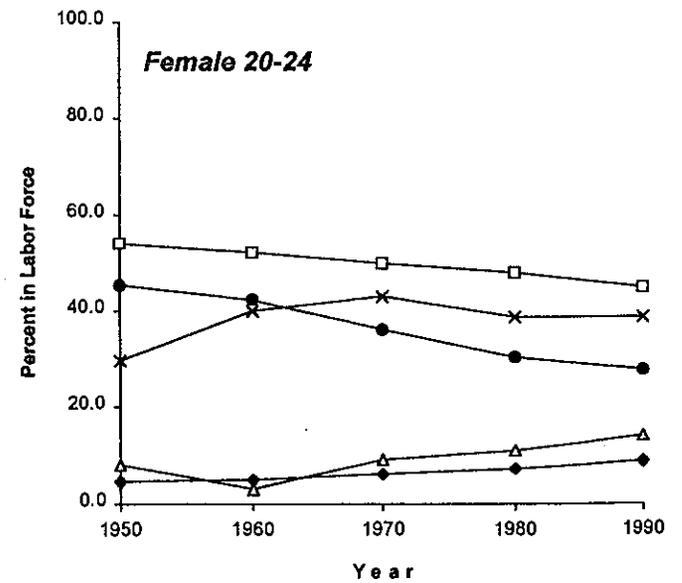
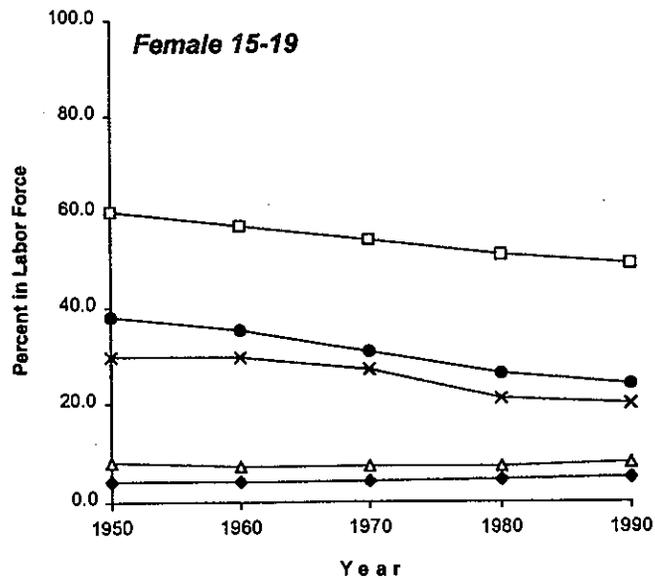
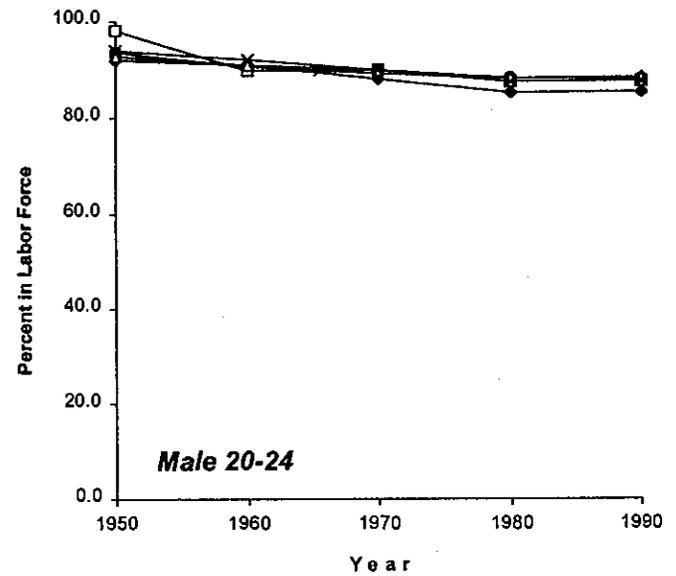
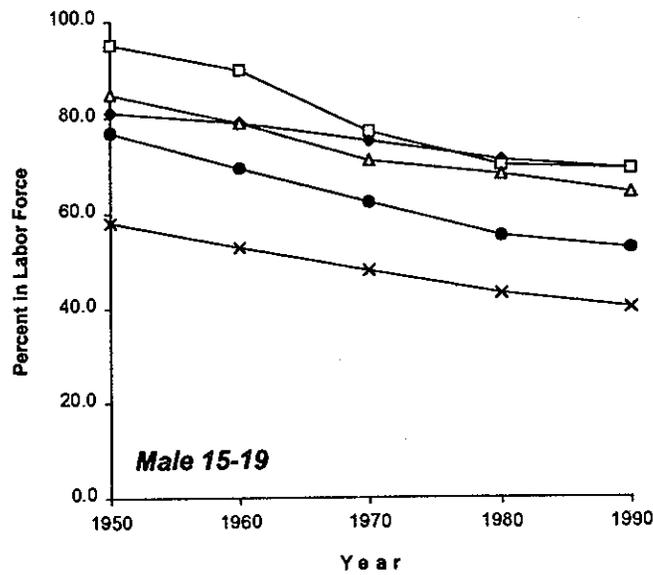




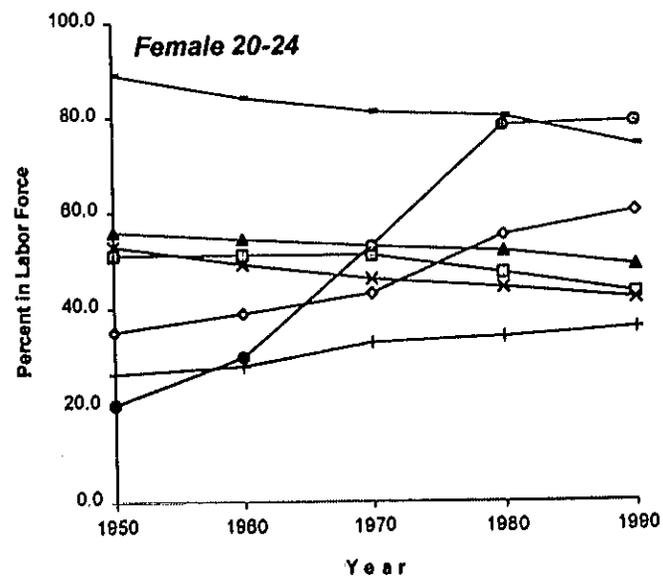
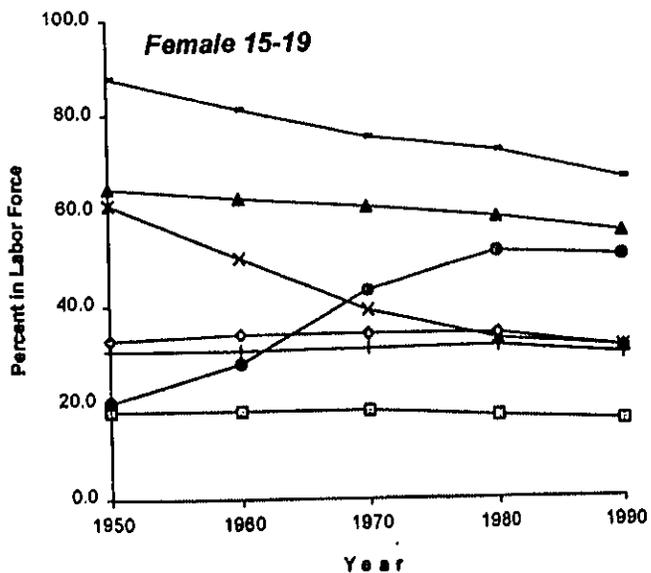
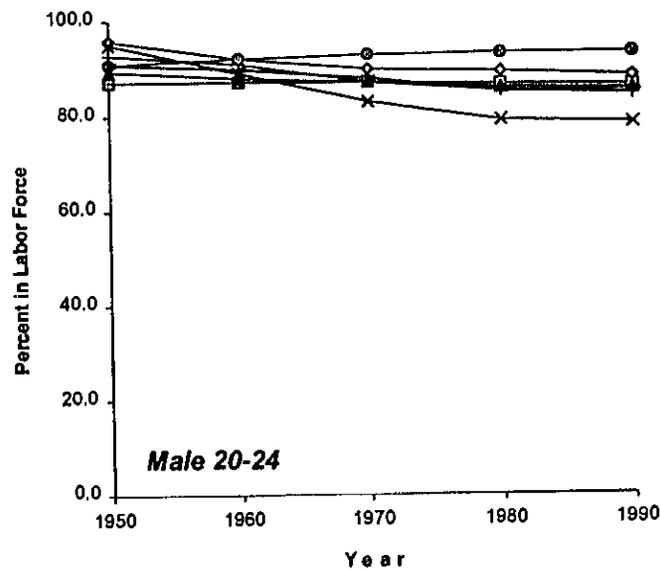
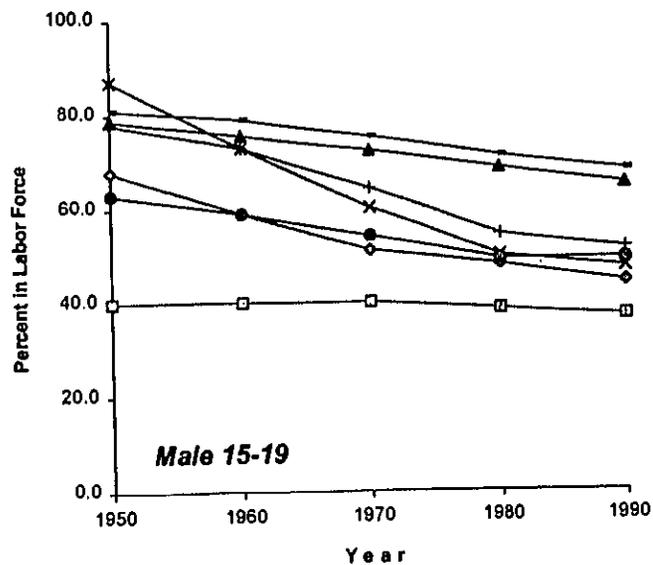
**Figure 19: Youth Enrollment Sex Ratios**



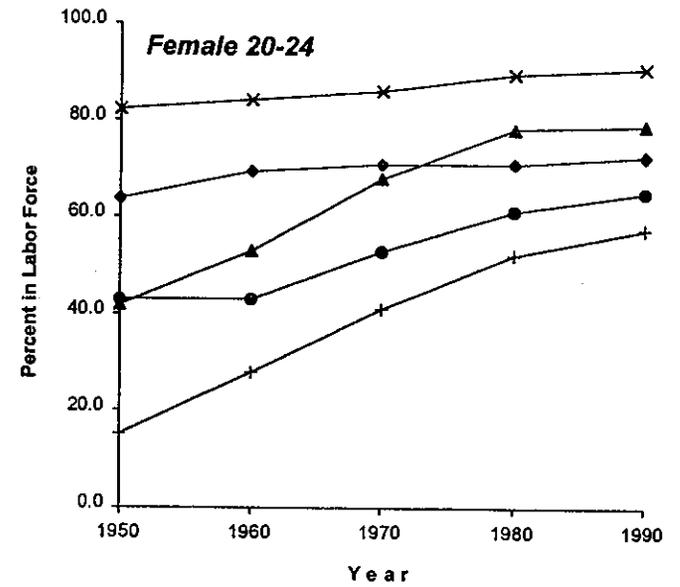
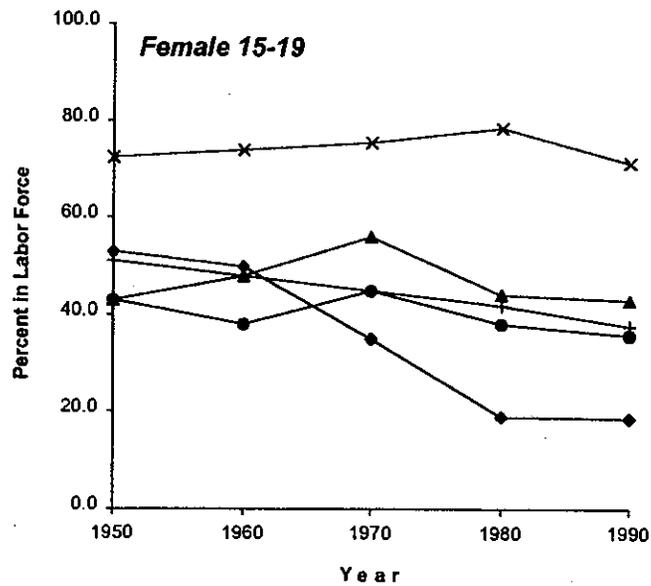
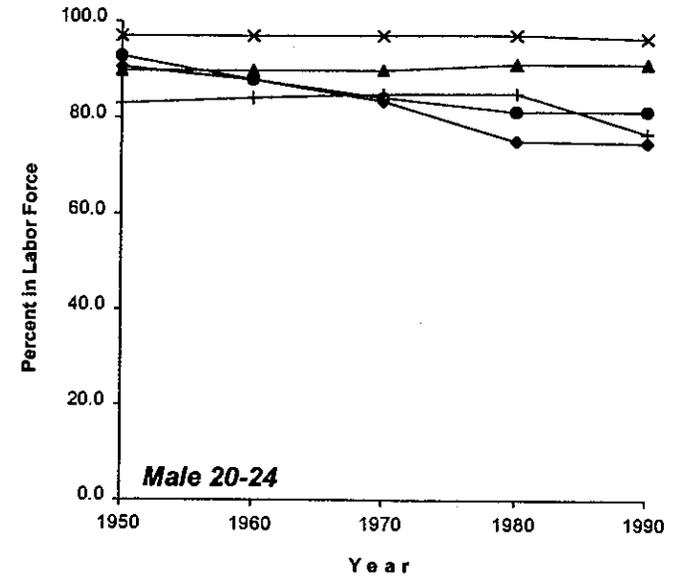
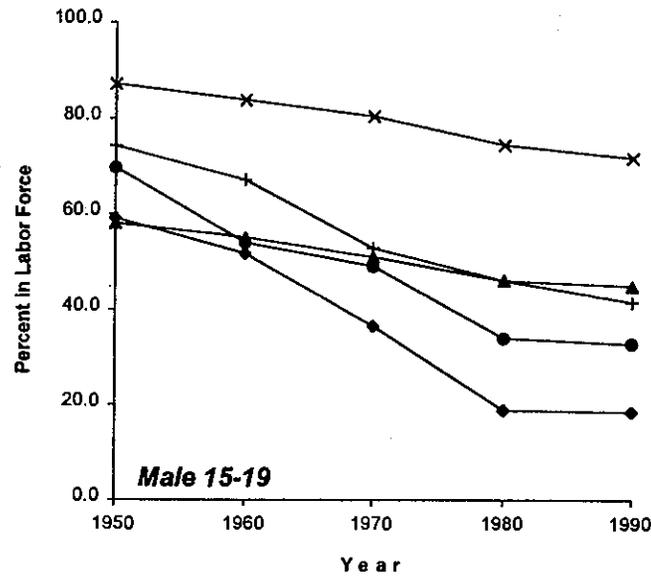
# Figure 20a: Percents in Labor Force, South Asia



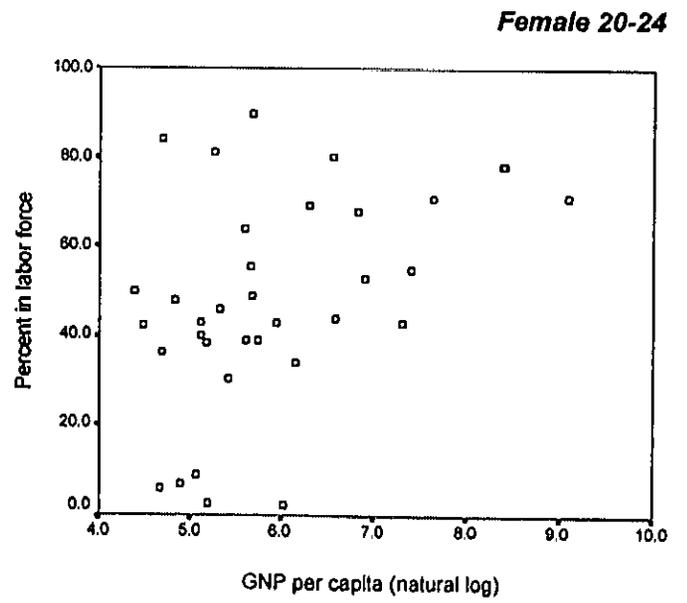
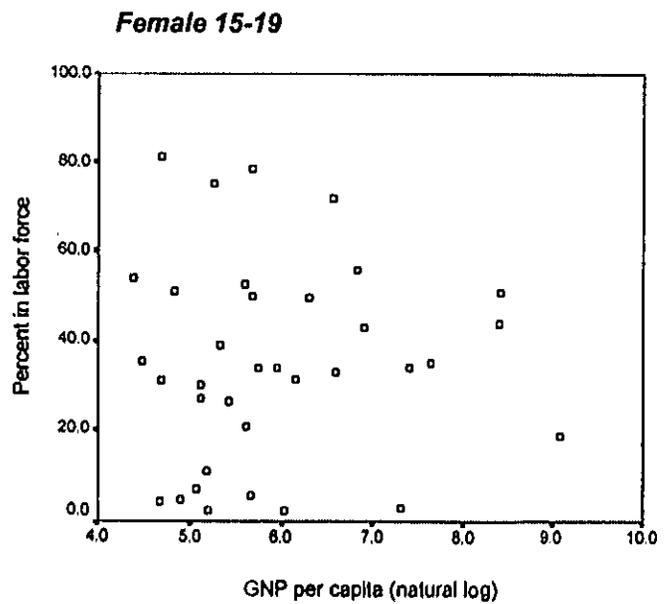
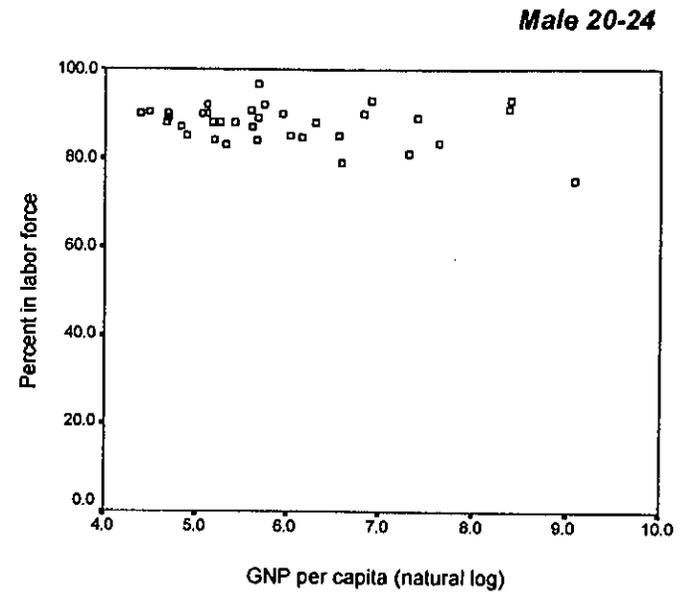
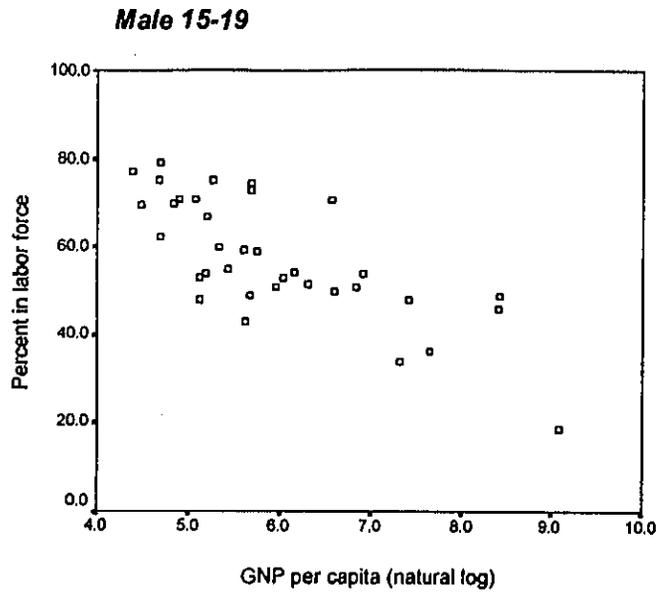
# Figure 20b: Percents in Labor Force, Southeast Asia



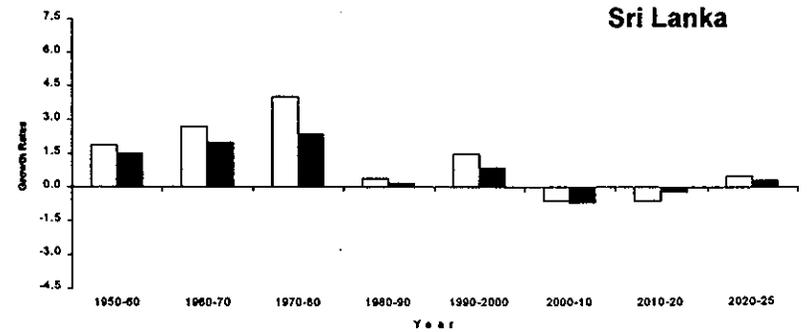
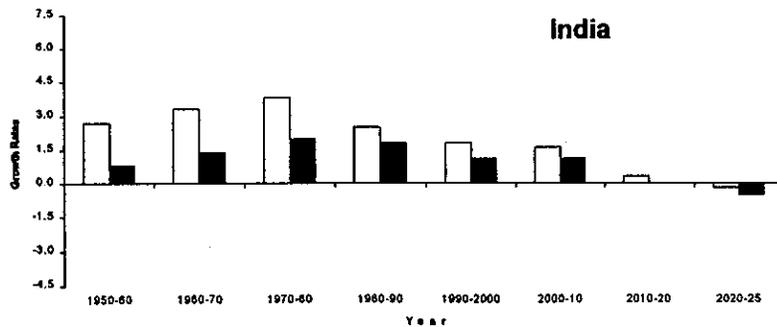
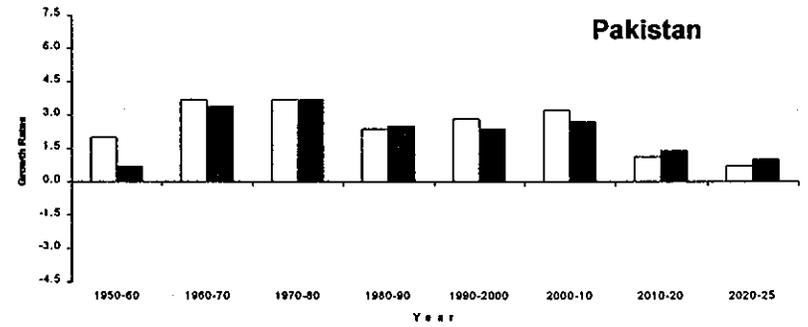
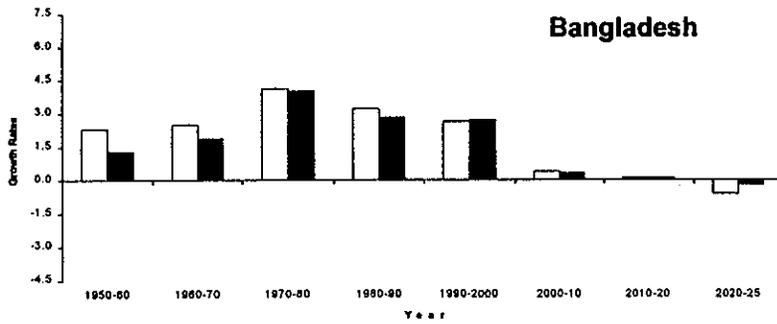
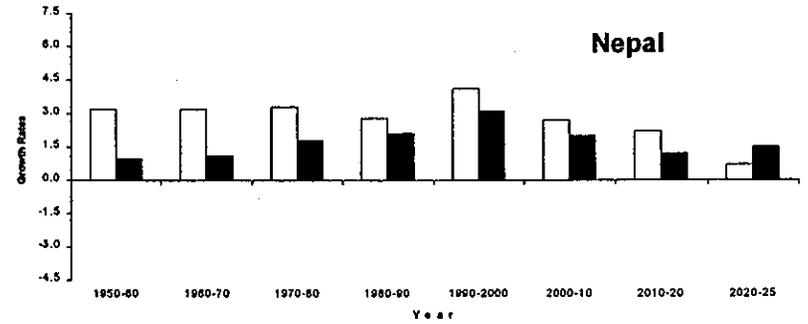
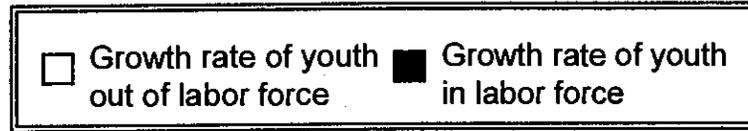
# Figure 20c: Percents in Labor Force, East Asia



# Figure 21: Percents in Labor Force and GNP Per Capita

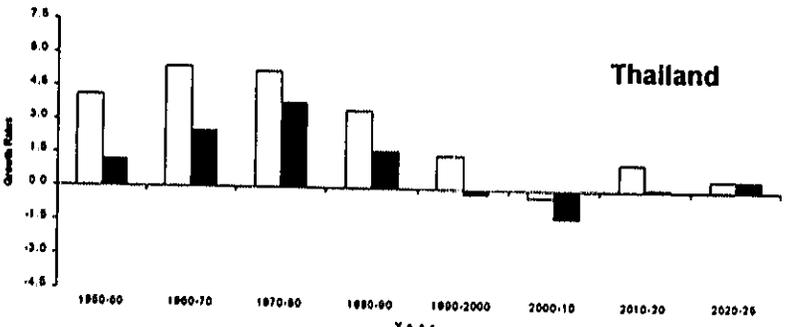
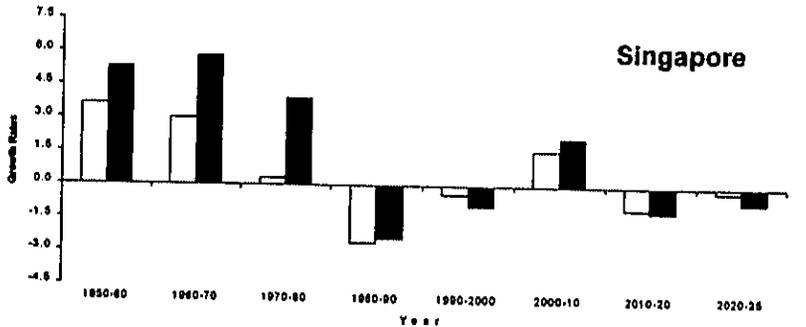
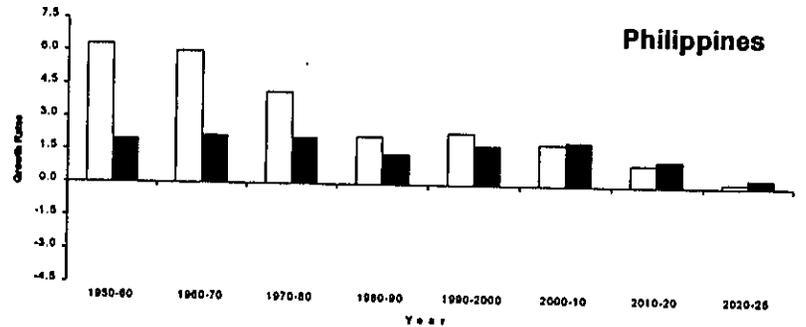
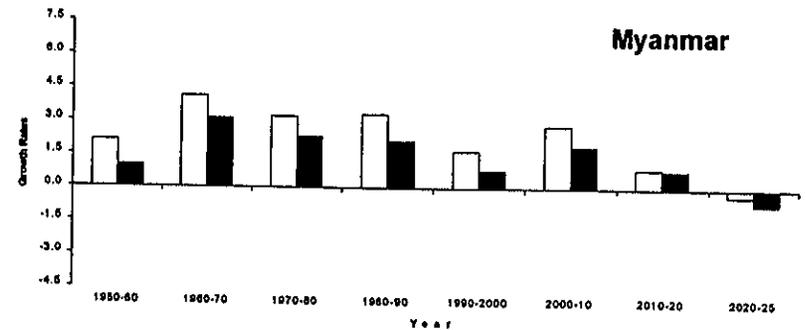
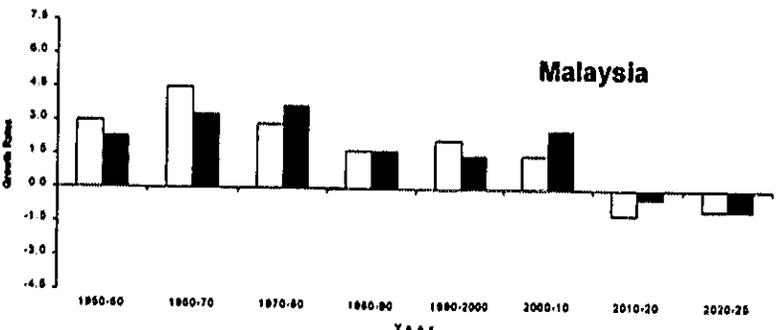
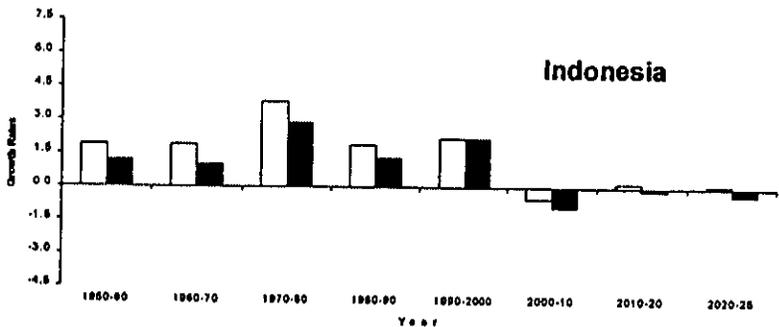
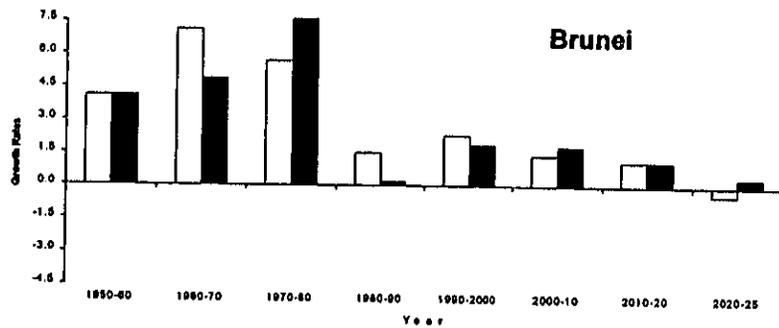


**Figure 22a: Growth Rates of Youth In or Out of Labor Force: South Asia**

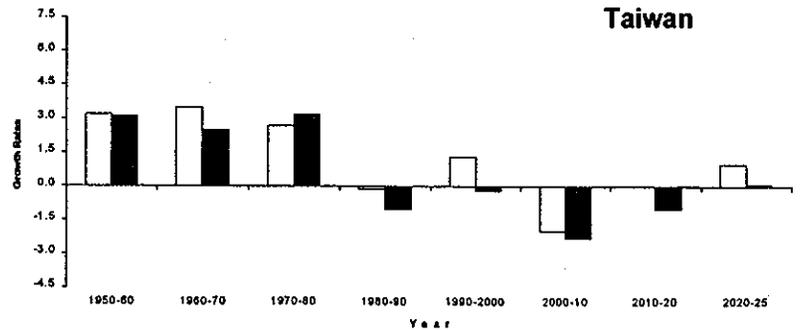
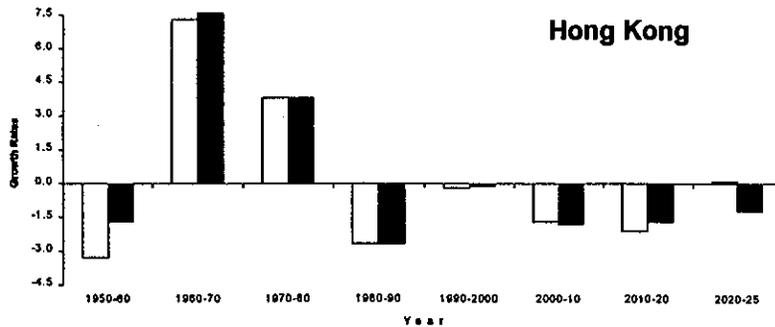
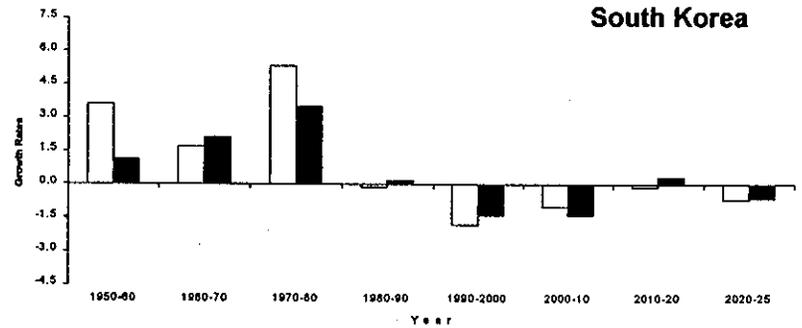
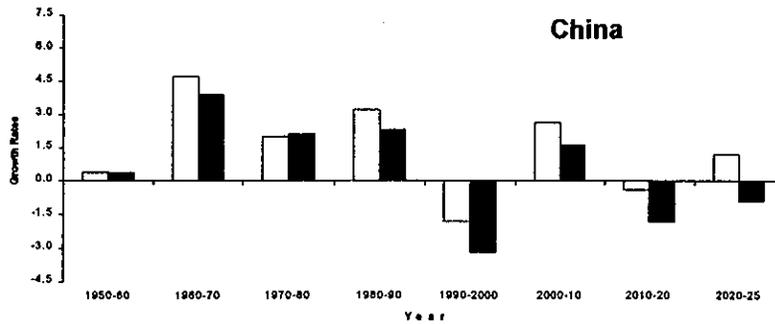
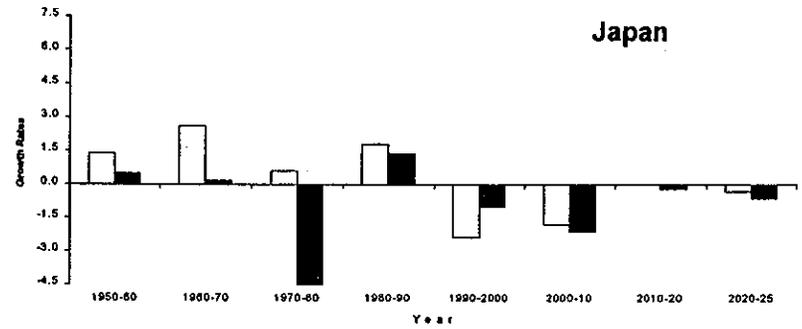
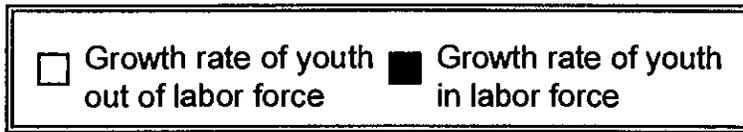


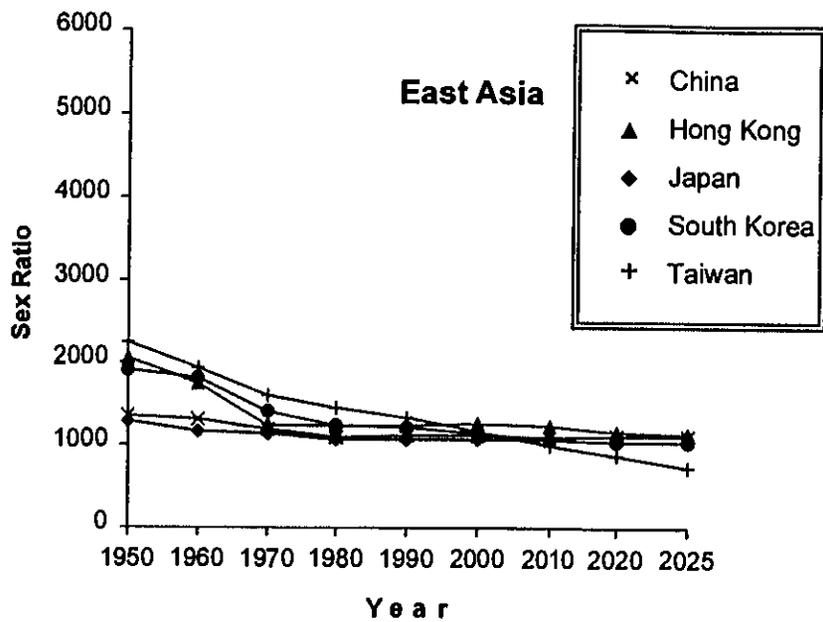
# Figure 22b: Growth Rates of Youth In or Out of Labor Force: Southeast Asia

Growth rate of youth out of labor force
  Growth rate of youth in labor force

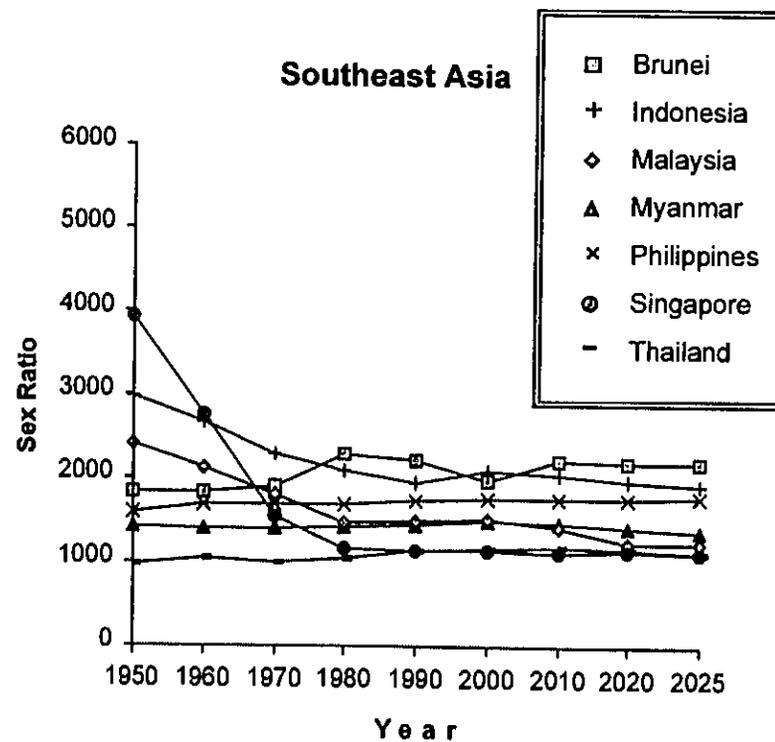
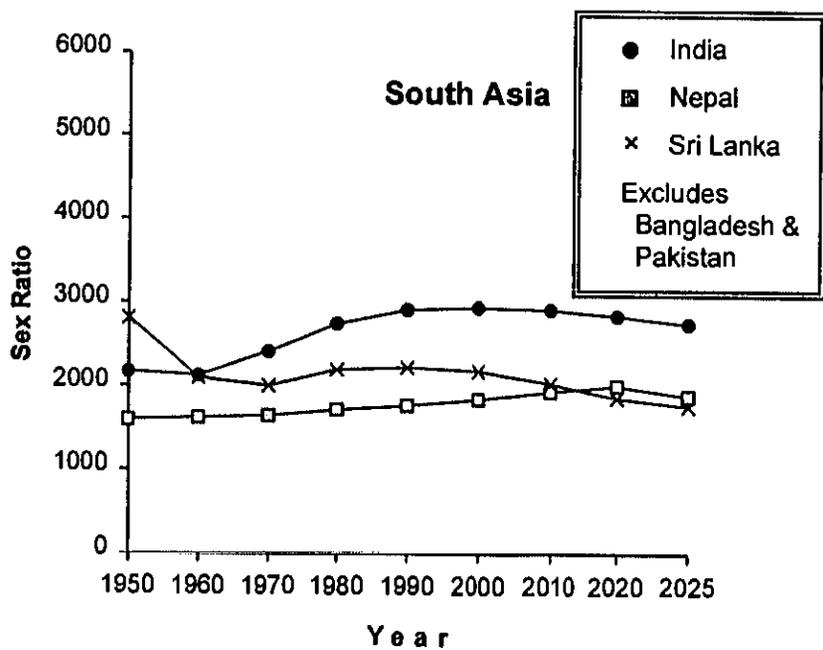


# Figure 22c: Growth Rates of Youth In or Out of Labor Force: East Asia

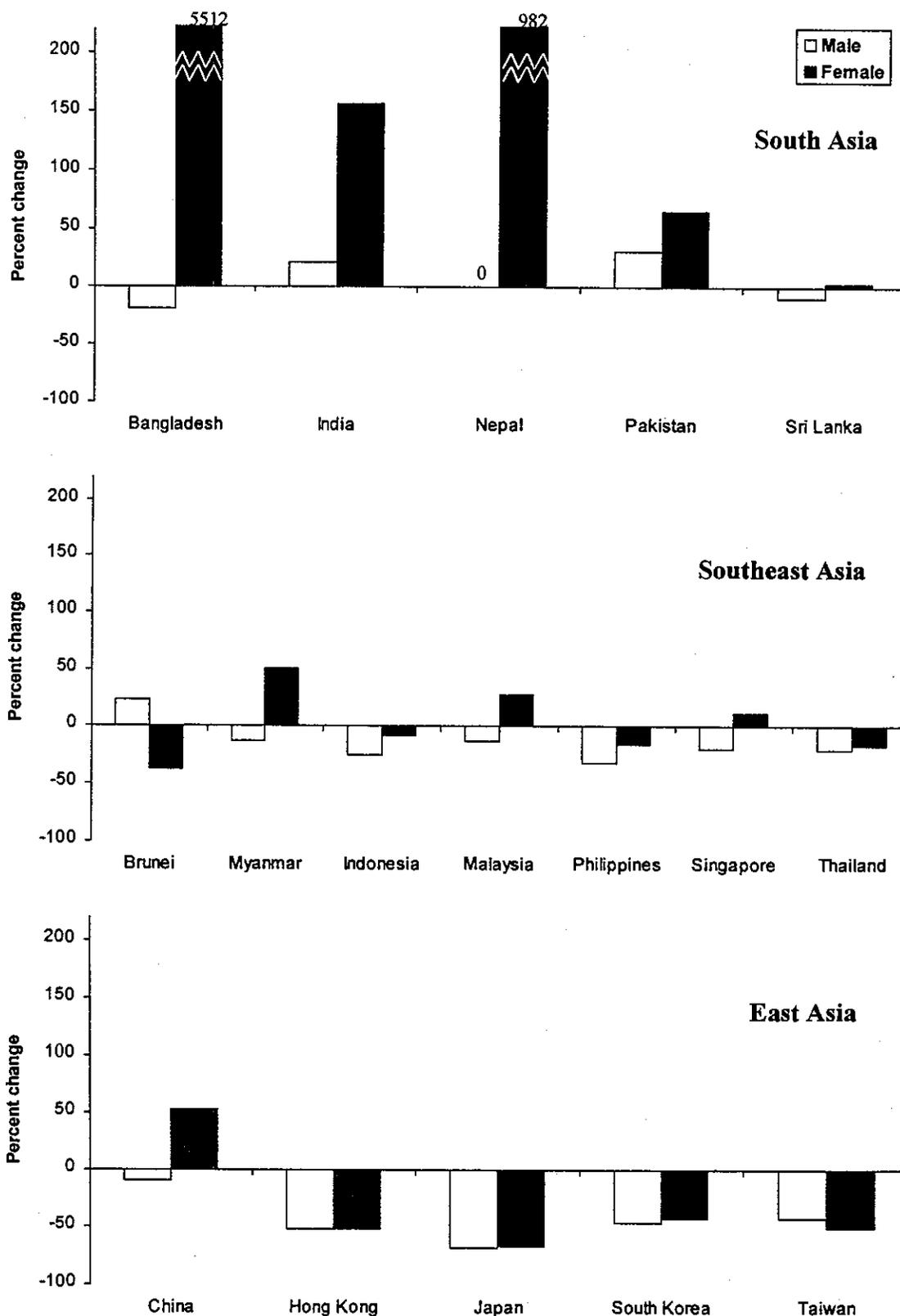




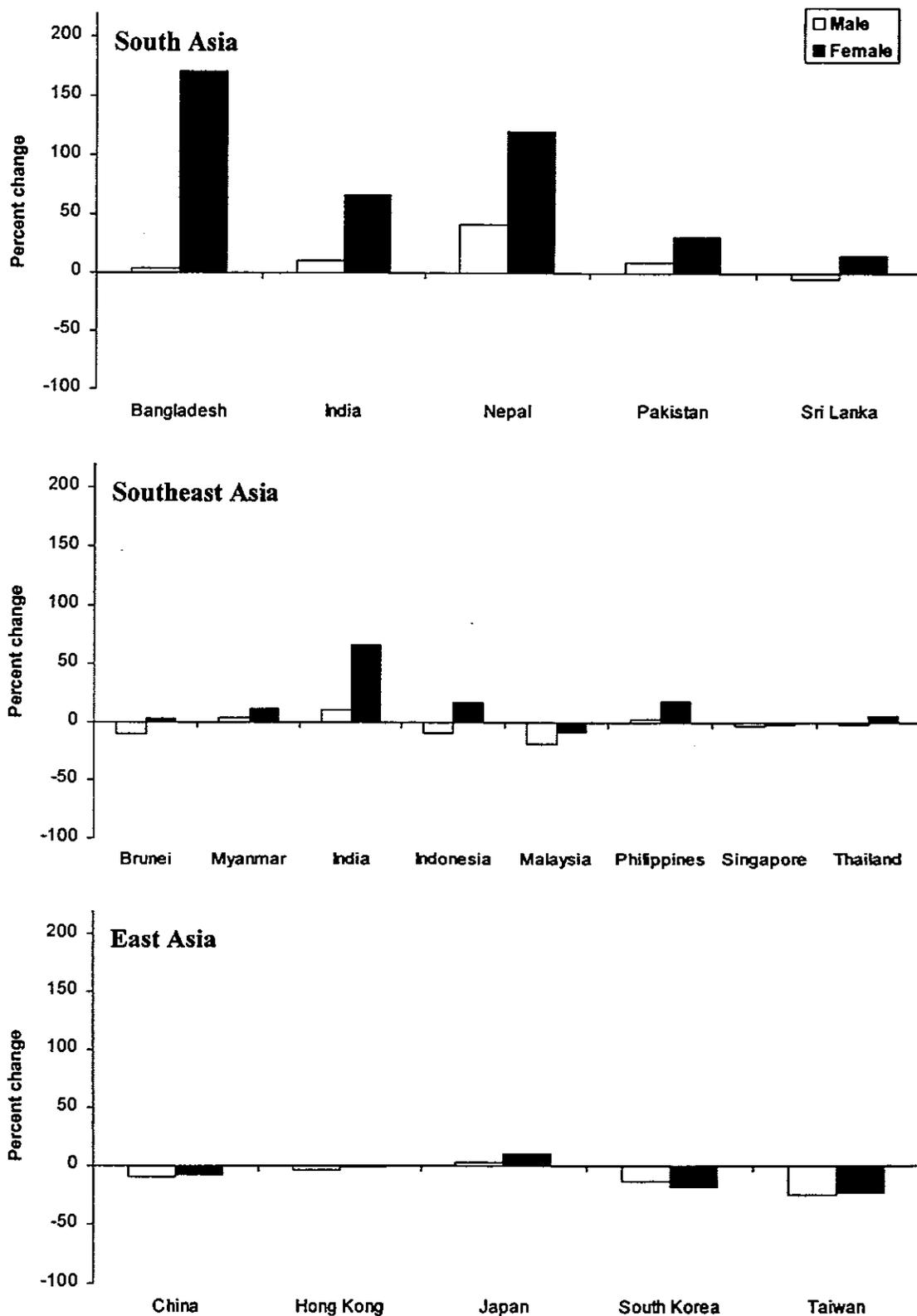
**Figure 23: Sex Ratios Among Youth in the Labor Force**



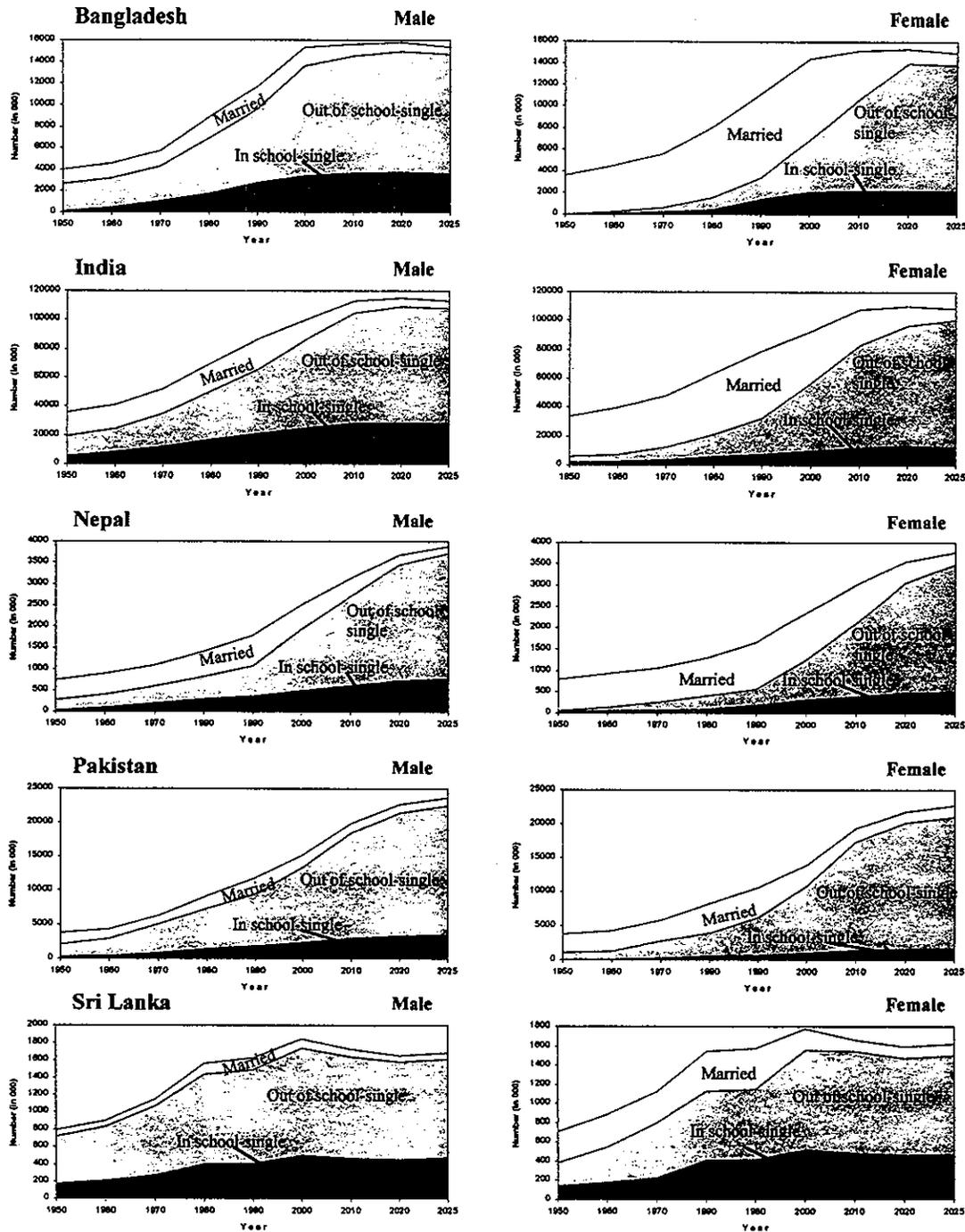
**Figure 24: Changes from 1950 to 1990 in the Percentage Single and Out-of-School Among Youth Ages 15-19, by Sex: Countries of Asia**



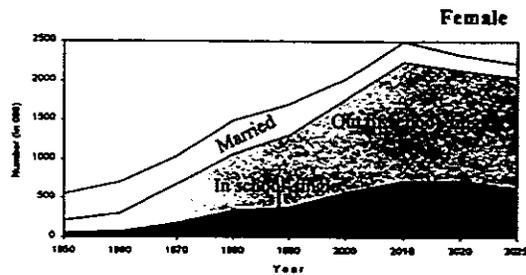
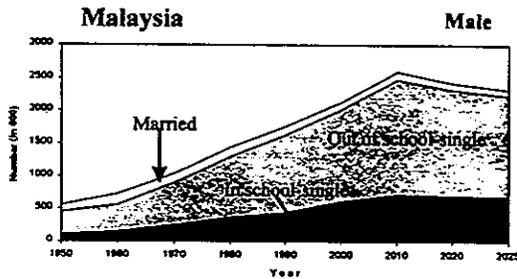
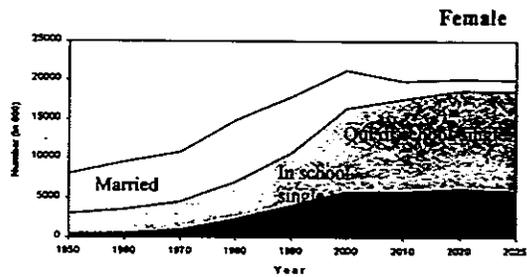
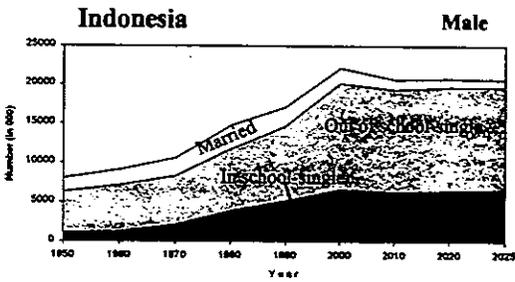
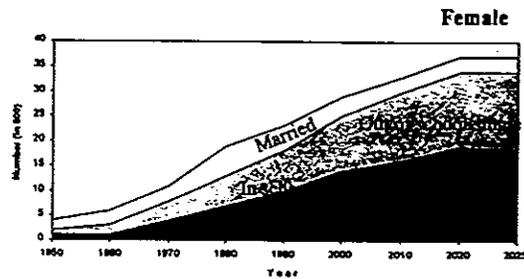
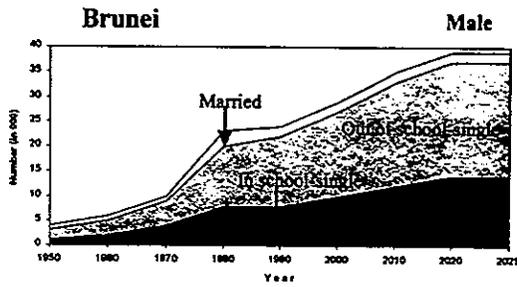
**Figure 25: Projected Changes from 1990 to 2025 in the Percentage Single and Out-of-School Among Youth Ages 15-19, by Sex: Countries of Asia**



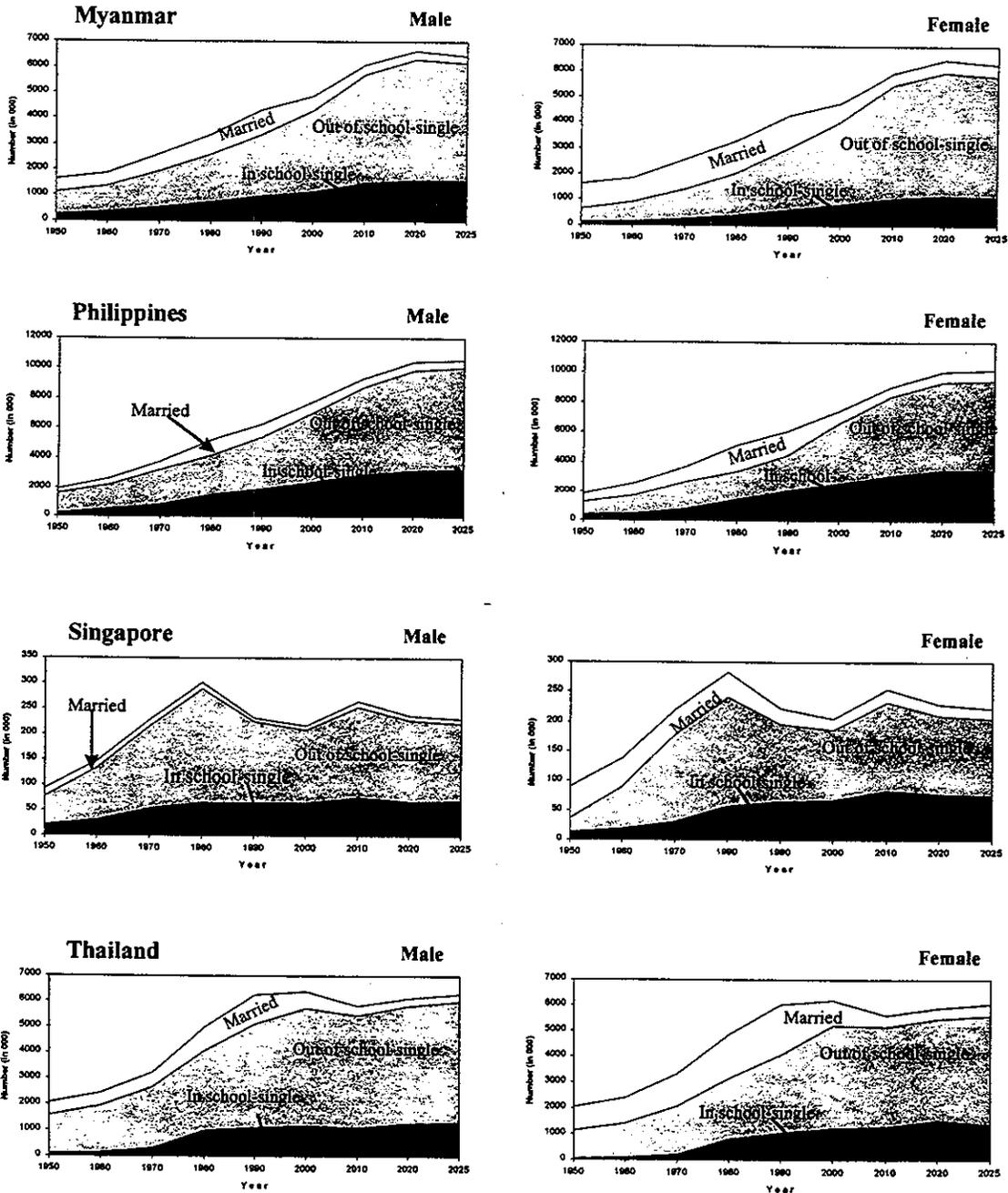
**Figure 26: Youth Population by Marital and Schooling Statuses, by Sex, 1950-2025: Part A, Countries of South Asia**



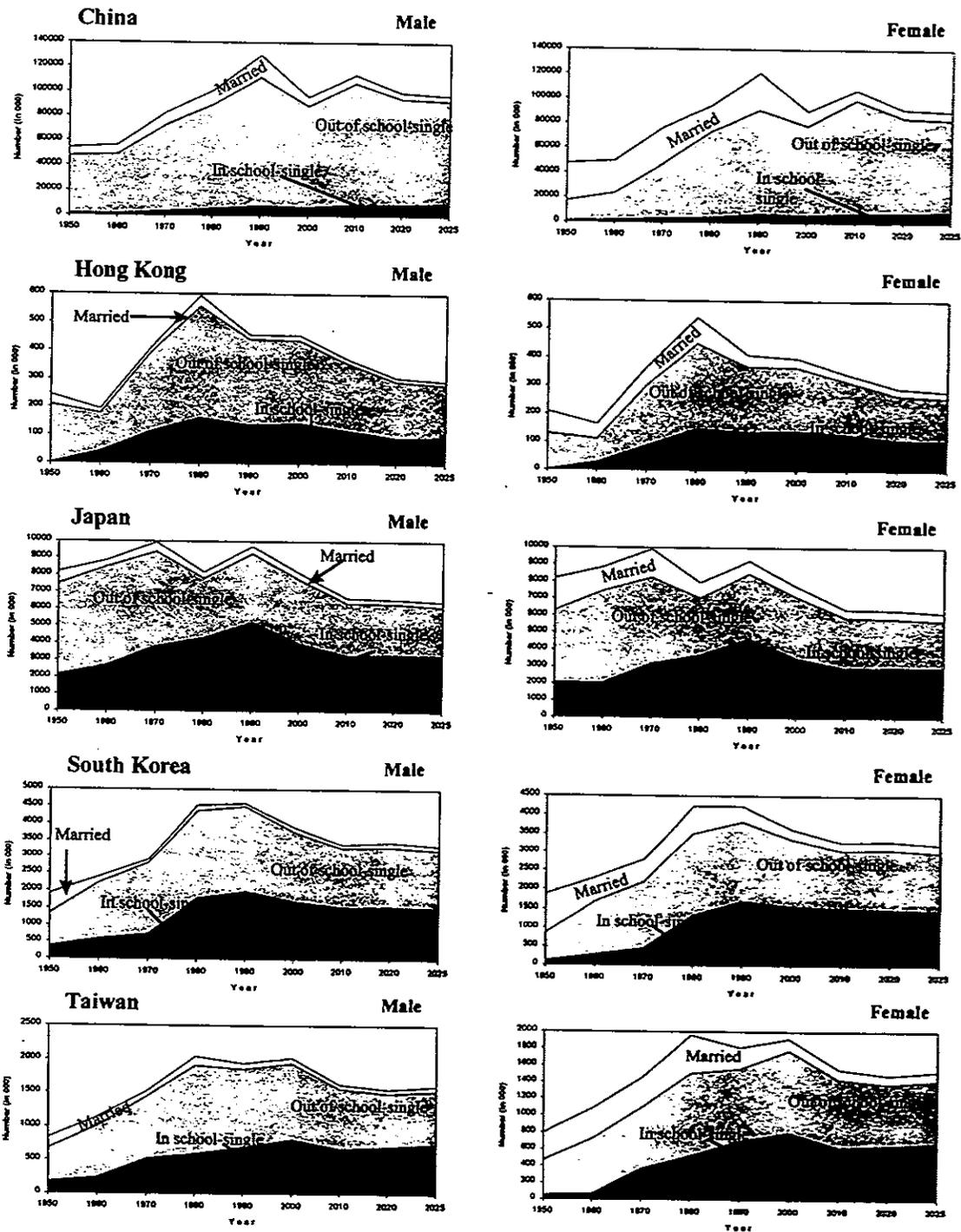
**Figure 26: Youth Population by Marital and Schooling Statuses, by Sex, 1950-2025:  
Part B, Countries of Southeast Asia**



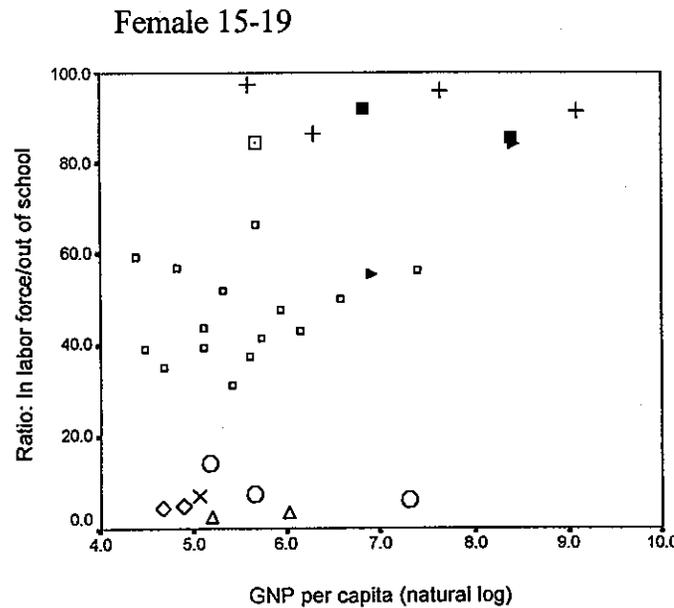
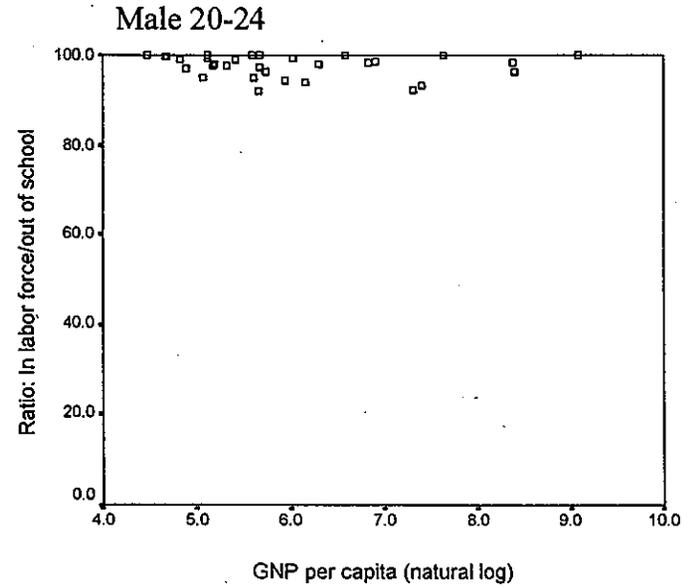
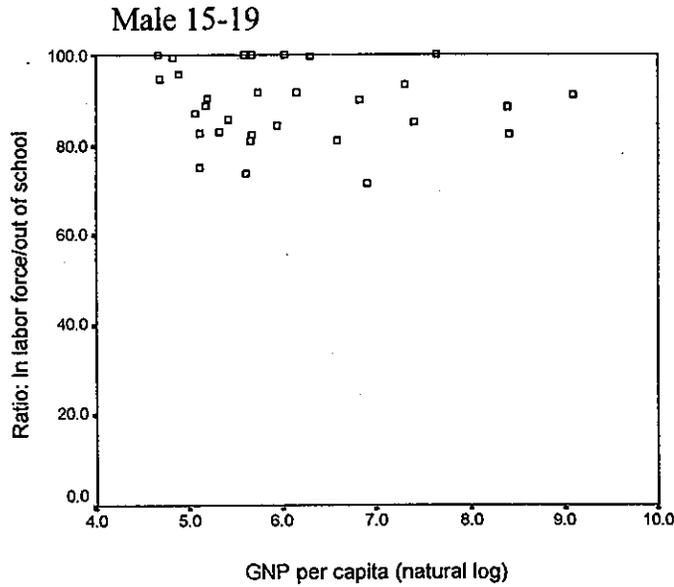
**Figure 26: Youth Population by Marital and Schooling Statuses, by Sex, 1950-2025:  
Part B, Countries of Southeast Asia (continued)**



**Figure 26: Youth Population by Marital and Schooling Statuses, by Sex, 1950-2025: Part C, Countries of East Asia**



# Figure 27: The Ratio of Youth in the Labor Force to Youth Out of School by GNP per Capita

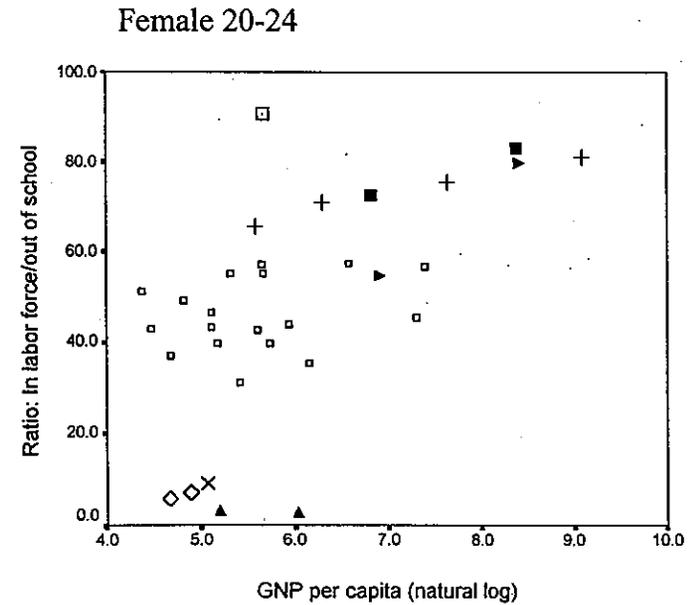


**Highest**

- Hong Kong
- + Japan
- ▣ China
- ▶ Singapore

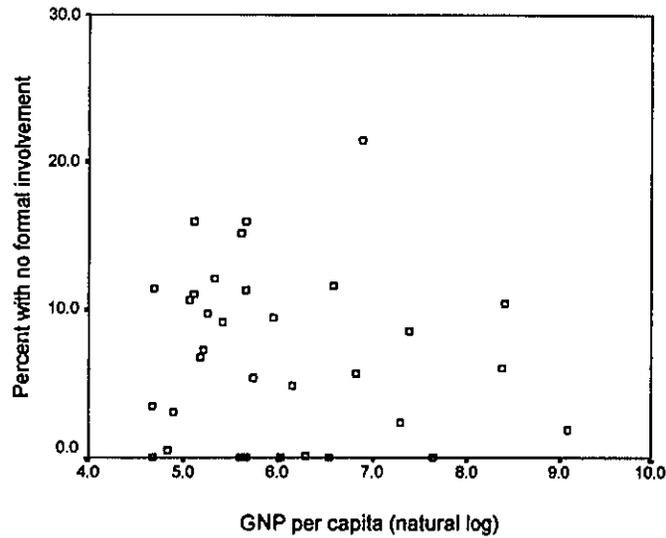
**Lowest**

- ◇ Bangladesh
- × Pakistan
- South Korea
- △ Taiwan

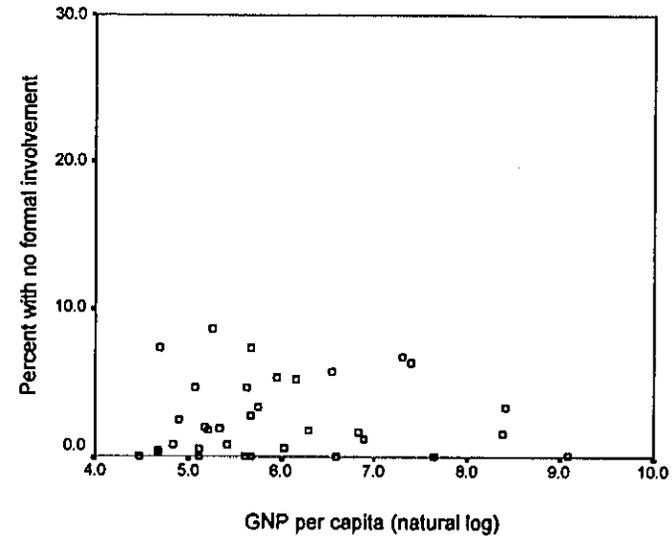


# Figure 28: Percent With No Formal Involvement in School or the Labor Force by GNP per Capita

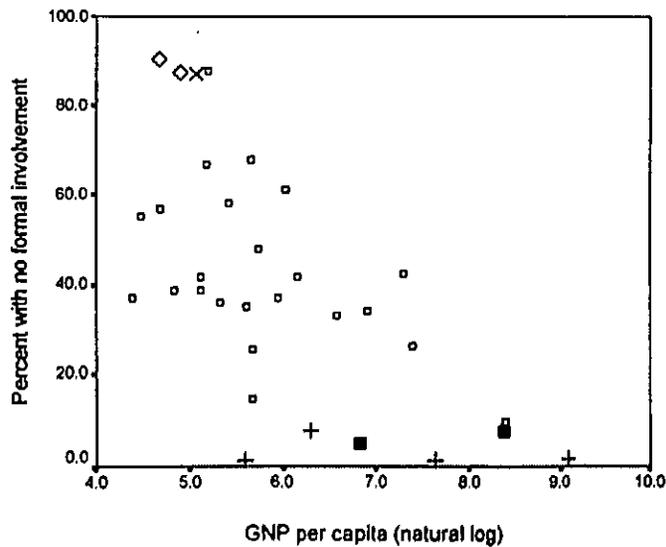
Male 15-19



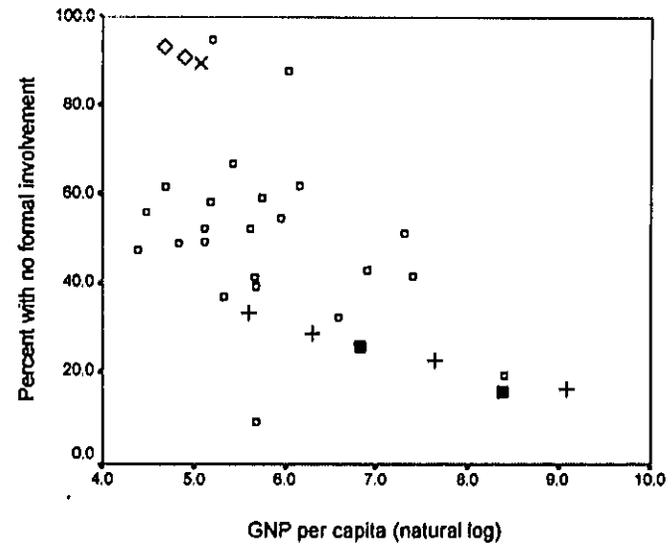
Male 20-24



Female 15-19



Female 20-24



Highest

◇ Bangladesh

× Pakistan

Lowest

+ Japan

■ Hong Kong

**Figure 29: Percent in the Labor Force by Percent Enrolled, Females by Age Group**

