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Abstract

This paper examines the gender distribution of the benefits of economic growth in several Asian economies from 1970-90. Using Borda rank ordering, we compare the progress made in these countries towards closing the gender gap in well-being. In addition to commonly-used indicators, trends in the ratio of females to males in the population are examined. We explore determinants of changes in this ratio, using regression analysis. The results indicate that gender equity in quality-of-life ratings is highest in those Asian economies that grew the slowest over the period in question. Further, the data indicate that economic growth does not have a significant effect on the female to male population ratios for this set of countries. Variables that affect women's bargaining power do, however, have a positive effect on relative female life chances, as does spending on public education.

Biographical note: Stephanie Seguino is Associate Professor of Economics at the University of Vermont since 1995. Her primary research regards the relationship between income distribution and macroeconomic outcomes. She has spent several years studying the extent to which gender inequality in Asia has been a stimulus to export-oriented growth in that region.

Gender, Quality of Life, and Growth in Asia 1970 to 1990[1]

I. Introduction

Standard economic indicators highlight the rapid economic growth of many Asian economies in the late 20th century. This record is particularly impressive, given the slow and stagnating growth of Latin America and Africa during the same period. It is often assumed that economic growth generates the means for people to individually and collectively improve the quality of their material lives. For this reason, GDP growth is viewed by some as an adequate indicator of well-being and a good yardstick by which to evaluate the development and macroeconomic policies of countries. But measures of economic growth are only a means to the end of improving living standards, and it is useful to study improvements in the ends themselves.[2]

Moreover, the impact of a growth strategy on aggregate measures of quality of life depends on how equitably incomes and resources are distributed. This issue is particularly relevant for the Asia region, which is notable for wide gender gaps in a number of areas, including wages and education, indicating an unequal distribution of income and resources. Has growth caused these gaps to narrow, and have women been able to 'catch up' to men in standards of living over this period?

To address these questions, we turn to the empirical evidence to assess the correlation between measures of economic growth and a movement toward greater gender equity in quality-of-life (QL) indicators for the period 1970-1990 using two methodologies. First, the Borda Rule is used to rank order and aggregate QL indicators for Asian economies. Two rankings are

presented, one based on gender equity in quality of life in 1990, and a second based on change over time in QL indicators, permitting us to observe which countries have achieved the most in terms of gender equity during this time period. Second, regression analysis is employed in order to consider the effects of several variables on the female to male population ratio, including per capita income growth, female bargaining power variables, and government expenditures.

II. Growth and Gender Equity

Despite the Asian financial crisis, many observers point to that region's experience with export-led growth as a model development strategy for other developing regions. The determinants of growth in individual Asian economies differ, but there is a regional dynamic to growth as a result of deepening economic integration (Zysman, Doherty, and Schwartz 1997). As a result, the region, which reflects the ideal of 'economic success' in the minds of some, makes an interesting case study of the effects of growth on gender equity. Growth rates and per capita income levels vary widely within the region (Table 1). Notably, South Korea, Hong Kong, and Singapore have the highest income by far and growth rates have been persistently higher since the 1960s. Export-led growth was adopted much later by the remaining economies and, in most cases, in the context of structural adjustment programs. It is therefore useful to assess whether the more rapidly growing economies in this region have also been more successful at reducing gender inequalities in well-being.

[Table 1 about here].

Despite the plethora of studies on the determinants of Asian growth, there has been little work done to consider how growth has affected the quality of life in the region, except as part of

broader cross-country studies (see, for example, Easterly 1999). For East Asia (that is, Hong Kong, Singapore, South Korea, and Taiwan), Tang (1988) finds that problems of relative inequality and poverty persist, despite rapid growth, although gender QL indicators are not examined. Other authors have been critical of the effect of Asian growth on women, but have not sought to quantitatively assess changes in women's relative well-being (Cheng and Hsiung 1998). This contradicts the results obtained by Dollar and Gatti (1999) who argue that growth does promote gender equity, using a developing country data set (not confined to Asia) and a very limited set of indicators of well-being.[3] Thus the relationship between growth and gender inequality in well-being in Asia has yet to be established.

With regard to the role of the state, there is again great diversity within the region. For example, East Asian governments have argued that economic growth is adequate to raise living standards, and these countries have largely left the provision of social welfare to the family. The benefits of growth are largely distributed to the family in the form of higher wage incomes, and this is likely, therefore, to be the primary pathway through which quality of life improves. Because of strong patriarchal family structures, we may wonder whether these benefits have been equitably distributed (Greenhalgh 1985; Cheng and Hsiung 1998). Other Asian economies have, however, taken a different stance on these issues. Sri Lanka has adopted state-level redistribution policies since the 1950s (Isenman 1980), while Malaysia's New Economic Policy has explicitly addressed ethnic inequality.

An initial hypothesis with regard to the relationship between gender equity in well-being and growth, implicit in the claims of many proponents of export-led growth, is that women should differentially benefit from this strategy because they are the preferred source of labor as a

result of pressures to keep unit labor costs low to compete in world markets. Sustained demand for female labor should drive up female wages relative to those of men as labor markets tighten. Moreover, rapid growth, signaling rising per capita incomes, should generate more revenue for households to invest in female family members, closing the gender gap in quality-of-life indicators. This 'income effect', in the view of some neo-classical economists, is not necessarily gender-biased, since females' lower future earnings make it rational to direct household investments to men when income is limited. By implication, this view suggests that economic growth will overcome the structural bias against females.

We can summarize this discussion by describing the potential effects of growth on women's relative well-being as occurring along three pathways. As per capita income rises, more resources can be shared with women: 1) at the household level, because higher incomes leave more resources for female members of the family, who previously received a smaller share; 2) due to higher levels of government spending, insofar as these increase female access to education and health care, 3) because job creation disproportionately benefits women, and as a result, women have more bargaining power and are seen as more economically valuable.

An alternative hypothesis is that growth is not sufficient to improve relative well-being. Rather, women's ability to achieve parity in quality of life with men is likely to depend on the type of growth process and development strategy, with equity dependent on strategies that favorably affect, for example, the distribution of jobs by sex, and state-level expenditure patterns that are female-enabling. Indeed, it can be argued that growth is not necessary for 2) and 3) to occur since, regardless of the growth rate of the economy, government could choose to reallocate expenditures to social spending that benefits women, or could increase women's relative access

to jobs, by such policies as affirmative action.[4]

This inquiry seems a particularly important task, given the recent flurry of research that examines how gender inequality affects the rate of economic growth. Some research suggests that gender inequality, measured primarily as educational gaps, slows growth (Hill and King 1995; Klasen 1999). But when measured by wage gaps, gender inequality is found to promote growth in export-oriented economies (Seguino 2000a, 2000b; Blecker and Seguino 2002). If the latter is the case, the acceptance of gender wage inequality, insofar as it promotes growth, may be acceptable if growth leads to a reduction in gender inequity in QL indicators. The achievement of gender equity in well-being may, however, be influenced by factors other than growth, as noted above. If that is the case, we may find that adherence to an export-led growth strategy that depends on gender inequality is not necessary to improve the status and well-being of females.

III. Gender and Quality of Life in Asia

Despite the difficulty of assessing quality of life, numerous efforts have been made in recent years to develop adequate indicators. A convergence of preferred indicators has emerged over the last decade with life expectancy, child survival rates, income per capita, and adult literacy rates the most frequently used, individually or in some composite index (Dasgupta and Weale 1992). A by-now widely accepted aggregate measure is the Human Development Index (HDI), adopted by the United Nations. This composite index is based on measures of life expectancy, literacy rates, and per capita income.

Gendered measures of relative well-being similarly draw on some estimates of

female/male differences in health, nutrition, education, and less frequently, access to resources. Efforts have also been made to assess the degree of women's agency—the extent to which women can make choices that affect their and their children's well-being—frequently represented by measures of women's political participation. Empowerment, which reflects the ability of those who have been denied the ability to make choices in their life to acquire that ability, results from conditions in three interrelated dimensions—resources, agency, and achievements (Kabeer 1999). A composite index that reflects these categories is the Gender Development Index (GDI), created in 1995 (UNDP 1995).[5] This indicator adjusts the HDI for gender inequalities, measured as women's share of income as well as gender differences in life expectancy and literacy. There have been numerous criticisms of the GDI (see, for example, Bardhan and Klasen 1999). Some of those concerns are reflected in the choice of measures adopted here.

Focusing on factors that lead to women's improved functioning, some of which also enhance their ability to make choices (that is, that are not only ends but also means to an end of living a good life), I consider achievements in three areas using the following indicators: 1) Health indicators: the ratio of females to males in the population, male to female mortality rates, and the fertility rate; 2) Education indicators: the ratio of female to male educational attainment for those over 15 and the ratio of female to male gross secondary school enrollment rates; and 3) Indicators of women's relative access to material resources: the ratio of female to male wages, and women's share of employment.[6] Because these indicators differ substantively from those used in the GDI and other studies measuring women's relative well-being, they require some explanation. (All variables are measured so that a positive value indicates greater gender equity).

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1) Health Indicators

The Ratio of Females to Males in the Population

I rely on the number of females per 100 males (heretofore called the FMR)[7] in the

population as an indicator of health, following Saith and Harriss-White (1999) and others. This

measure is used in place of life expectancy data, which are based on model life tables rather than

real data. A weakness of the latter approach is that the tables are estimated from data that are

often difficult to verify, given the underreported number of infant deaths (Bardhan and Klasen

1999). Moreover, that variable does not capture age-specific differences in mortality due to

gender discrimination. The ratio of females to males in the population, on the other hand,

captures society's valuation of women as well as women's ability to protect female children in

vulnerable years. Thus it reflects both women's agency and women's status. This can be

considered a stock variable (rather than a flow) since it summarizes cumulative gender inequality

as it has operated over a long period of time.

The FMR varies over the life cycle. Male birth rates exceed those of females by roughly

five percent at birth due to biological factors, but female survival is higher from the fetal stage

forward, if females and males are given similar care. This is explained by female resistance to

diseases in infancy and differences in sex hormones in adolescence which lead to higher

mortality rate for males up to the age of 30. At that point, the ratio becomes balanced. But

beyond this stage, female survival rates exceed males' up to menopause, causing the population

ratio to favor females.

In industrialized economies, the mean value of the FMR is 105, while in Sub- Saharan

Africa (SSA) it is approximately 102.5 (Klasen 1994; Drèze and Sen 1995; Saith and Harriss-

White 1998). The Sub-Saharan Africa ratio provides a useful benchmark against which to

compare Asian data since there is little female disadvantage in relative mortality rates in that

region, and life expectancy is no higher than in Asia (which would otherwise tend to bias upward

the FMR) (Sen 2000). Ratios that fall below this benchmark are likely to be the result of excess

female mortality, gender inequities in access to resources for female children, including health

care and nutrition, and sex-selective abortions reflecting preference for male children.[8] Insofar as

males are seen as socially and economically more valuable, or women are unable to exert

sufficient power to protect female children on an equal basis with male children, we would

expect this ratio to fall below its threshold. A movement toward a higher FMR can be interpreted

as a higher quality of life, or greater well-being for females, though the exact chain of causality

is not revealed in the indicator.

A similar measure that I refer to in this paper, and is useful to discuss here, is the FMR

for the age group 0-14 years. This ratio provides information on excess female mortality in

infancy and childhood, and avoids the problem of sex-specific out-migration that is reflected in

the total female to male population ratio. Using this age-specific measure, we can infer that, if

the care of children were not gendered, the ratio of females per 100 males could be benchmarked

at 96 since males outnumber females at birth (Drèze and Sen 1995; Saith and Harriss-White

1998).

Ratio of Adult Male to Female Mortality Rates

Adult male mortality rates (measured per 1000 persons) generally exceed female rates

due to a variety of factors, including a higher incidence for males of such behaviors such as

alcohol and tobacco consumption and violence. The gap between male and female mortality

rates will be smaller, however, if women have less access to health care or food, if maternal health care provision is lacking, and if mortality from domestic violence is severe. In contrast to the FMR, which captures differences in treatment of the young, this measure focuses on the adult population, although in some sense, it reflects cumulative discrimination since women's health status in adulthood may be more compromised than men's if treated unequally in earlier years.[9] No benchmark for gender equity is set for this variable.

Fertility

Measures of female fertility (average number of live births per adult female) are an indirect measure of women's well-being. Excess fertility frequently points to women's lack of control over reproductive decisions, and reflects stress on women's health, both through the physical cost of child-bearing and nurturing in early years, as well as in the labor time required to care for additional children. (In the latter regard, this can also therefore be considered a variable that measures access to resources. As women spend more time in the care of children, there is less time available for activities that generate income). I do not set any ideal (or gender equitable) benchmark for this variable, and simply assume that a decline in fertility is an indicator of improvement in women's quality of life, reflecting improvements in their agency.

2) Education

Ratio of Female to Male Gross Secondary School Enrollment Rates

In many societies, the primary goal of female education is not necessarily to enhance wage opportunities, and therefore access to material resources. Rather, it serves as a signaling device to attract suitable male partners, with subsequent female material well-being dependent on the male's economic status. In some Asian societies, parents' motivation to invest in their

daughters' education is to ensure support in old age, through a complex chain of causality. A study by Greenhalgh (1985) indicates, for example, that parents in Taiwan invest in their daughters' early education to ensure their access to low wage jobs. Some portion of the daughters' earnings are then given to parents to repay their investment. (Repayment must occur before the daughter marries, in part because women frequently face social pressure to quit their jobs upon marriage). Parents rely on those earnings to fund their sons' higher education, with sons responsible for supporting their parents in old age. Nevertheless, we assume that there is intrinsic benefit to women's education beyond income-earning possibilities, in that it leads to women's enhanced understanding of the array of choices they may face, as well as their agency to change inequitable situations.

One measure of education that we use here is the gross ratio of female to male secondary enrollment rates, which is a flow variable. It tells us, at a given point in time, what percentage of female children of secondary school age are enrolled relative to the male rate in the same age group. This variable reflects treatment of females relative to males, indicated by society's relative willingness to invest resources in them. There are limitations on the ability of this variable to reflect gender inequality since these data do not take account of past discrimination against women in access to education. Further, because this is a gross (not net) ratio, it does not account for gender differences in drop-out rates.

Another measure of education used here, therefore, is the ratio of women's to men's total educational attainment of those over 15. This is a stock variable in that it gives information about older members of the population and summarizes past discrimination. It has an advantage over literacy rates where literacy is defined as the ability of a person (15 or above) to read and write,

with understanding, a short simple statement on everyday life. Frequently, the characteristic is self-reported and, further, it does not measure total educational investments. The ratio of female to male total educational attainment overcomes some of these problems.

3) Access to Resources

Female Share of Labor Force

Women's contribution to economic well-being of the household via their productive labor can improve their status within the family and society. Berik and Bilginsoy (2000) provide convincing evidence for Turkey that women's participation rate in unpaid labor activities is a good measure of their economic value, perhaps related to the importance of female labor in agriculturally-based economies. Sen (1990a) and others, in contrast, focus on women's paid labor as a measure both of their value and their bargaining power. Specifically, access to income is assumed to improve women's bargaining power since the cost of leaving a job or a relationship is reduced as they gain access to independent sources of income. Moreover, women's access to income can have important effects on the ability to provide material resources for themselves and their children that male members may not provide with their income. This can lead to an increase in women's ability to affect the distribution of resources within the family, and also the distribution of unpaid labor time between women and men.

My measures differ from these in that I emphasize bargaining power differentials between women and men and therefore use female share of the labor force (rather than the female labor force participation rate). Unfortunately, I lack sufficient time-series data to differentiate between paid and unpaid labor in all of the analyses. For the rank ordering exercise

in the next section, I use women's share of paid non-agricultural employment as an indicator of gender equity. The motivation for this is that Hong Kong and Singapore do not have significant agricultural sectors, and use of women's share of non-agricultural paid activities makes the data more comparable across economies, insofar as we are focusing more on urban than rural outcomes in gender equity. For the regression analysis, I use women's share of the entire labor force (which combines data on paid and unpaid labor).

Relative Female Wages

The ratio of female to male wages is an obvious indicator of women's relative access to material resources. Here I use the ratio of female to male manufacturing wages which are more widely available than wages in the non-agricultural sector. These data are not available in a long time series, and where necessary, we rely only on women's share of employment as the indicator of access to material resources.

IV. Has Relative Female Well-Being Improved in Asia?: Ordering Using the Borda Rule

A summary of gendered differences in QL indicators for eight Asian economies in 1990 is shown in Table 2. This cross-country comparison, not surprisingly, suggests substantial variation across the region. The data, however, do not suggest that any one country does uniformly poorly in all or most categories of QL indicators. Of particular note is the number of females per 100 males in the population. In no country does this ratio approach the SSA benchmark of 102.5.

Focusing on how women's relative well-being has changed over time, Table 3 summarizes changes (improvements have positive signs) in gendered measures of QL for the

period 1970 to 1990 in these economies. Here we drop from our list of indicators relative wages

for which there were not adequate time series data to make a meaningful comparison. In most

cases, the direction of change is toward improvement in well-being, but there are several cases

with negative changes, indicating worsening relative female well-being. (These are placed in

bold type). Most disturbing are declines in the number of females per 100 males, despite rapid

growth and a development strategy that presumably favors women.

[Tables 2 and 3 about here].

A comparison across countries requires that we find a method to aggregate these QL

indicators. To do this, I use a very simply method of rank-order scoring, the Borda Rule. The

basis of the rule is very simple. To rank countries according to an aggregate measure, we give

equal weight to each indicator. A country is awarded a point equal to its rank for each criterion

(or indicator). I then sum the points for each indicator to obtain an aggregate score and that

score is used to rank countries.[10] Table 4 gives this ranking at a moment in time—for the year

1990. The top-ranking country is the one with the most points according to our 7 criteria.

Interestingly, those countries that exhibit relatively greater gender equity in the QL indicators—

Sri Lanka and the Philippines—are also those that have experienced the slowest growth over the

last 20 years and have relatively low per capita incomes (see Table 1). This is shown more

clearly in Figure 1, which plots total points in Borda rank ordering against the natural log of per

capita income, measured in 1995 international dollars (See Table A.1 in the appendix for a list of

variables and data sources). As Figure 1 shows, there is very little apparent correlation between

income level (and thus stage of development) and aggregate Borda rankings of gender equity. In

individual categories (see Table 2), however, income does seem to matter. Fertility and male to

female mortality rates are more strongly related to per capita income than the remaining variables.

[Figure 1 about here].

The rank ordering achieved with these indicators differs from that obtained using the GDI. (Table 5 compares the results of these two methods). Given the weight accorded to the GDI in recent years, it is useful to consider why the results presented here differ to such a large extent. The GDI is used to adjust the Human Development Index which, as noted, is comprised of measures of life expectancy, literacy, and per capita income, for gaps in gender inequality. Adjustments using the GDI have only a small effect on prior rankings of the HDI, which are heavily influenced by cross-country differences in per capita income levels (Bardhan and Klasen 1999). That factor, coupled with the different indicators of health and education, explain why the first-tier Newly Industrialized Economies (NIEs) of Hong Kong, Singapore and South Korea rank so high in the GDI but lower in the QL indicators used here, which focus exclusively on gender inequality. In other words, the GDI places a great deal of weight on absolute levels of per capita income, with much less emphasis on how that income is distributed between males and females.

[Tables 4 and 5 about here].

We also want to know which Asian countries have come the farthest in closing gender gaps over the last 30 years. Ranking country performance of improvements in gender equity is a more complex matter, however, since there are different ways to measure the degree of change. For example, we can measure how far countries have come in absolute terms. We can also calculate change relative to some norm. Finally, we could measure change relative to a country's

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distance from complete gender equity (since those that start out with greater gender equity do not have as far to go). It is also useful to consider how rapidly gender gaps close, relative to the growth rate of the economy. For comparative purposes, I present three rankings of improvements in gender equity, taking into account these various factors.

First, I consider the absolute change in gender equity variables (Table 6).[11] Malaysia, Thailand, and Sri Lanka have experienced the greatest improvement in gender equity during this time period. This is an interesting result, since the East Asian economies experienced rapid growth rates much earlier than these countries, and we might have expected, therefore that they would lead in terms of absolute change in gender equity if in fact growth is a primary vehicle for promoting gender equity. The Philippines, in this ordering, moves to last place. This may in part be explained by small gains made in the area of education, but given that the initial education gap was very small in that country, there was little room for improvement.

We might, therefore, want to recalculate these rank orderings, giving greater weight to achievements by those countries that have come closer to the gender ideal in each category.[12] Table 7 reports these weighted rank orders. This method has the effect of moving the Philippines up in the rank order, but leaves the first-tier NIEs again, in the middle in terms of achievements in gender equity. There is little evidence that movement up the economic ladder to higher per capita incomes automatically brings with it gender equity in well-being. This can be seen in Figure 2, which is a scatter plot of the weighted rank ordering plotted against the change in per capita income.

[Tables 6 and 7 and Figure 2 about here].

Finally, in one last exercise using Borda rankings, I rank order the countries according to

which achieved more in terms of gender equity <u>per unit of growth</u>.[13] This can tell us something about the 'quality' of growth in terms of its effect on gender equity in well-being. Here low quality growth is defined as growth that shows little improvement in women's relative well-being per unit, relative to other countries. The data indicate that the first-tier NIEs are substantially behind slower-growing and poorer Sri Lanka and the Philippines (Table 8). Indeed, Hong Kong ranks last with less than half the points obtained by Sri Lanka. That is, growth has been of a higher quality in Sri Lanka and the Philippines than in the more industrially-advanced East Asian economies.

Growth seems to be negatively related to relative improvements in women's well-being, using this method. This relationship can be seen in Figure 3 where per capita income growth rates are plotted against improvements in gender equity, weighted as described. This finding is consistent with evidence from India, showing an inverse relationship between gender equality in well-being and growth. That evidence suggests that inequality is lower among poorer income households (Murthi, Guio, and Drèze 1995), while higher FMRs go hand in hand with higher levels of poverty (Drèze and Sen 1995).

One reason why relative female well-being may decline as incomes rise is the 'emulation' effect, explained as follows. In low-income households, women's labor is crucial for family survival, especially in agricultural households. But as incomes rise, poor classes seek to emulate wealthier ones that limit women's economic activity (despite women's high levels of education). The practice of circumscribing women's activities enhances the patriarch's social status since it acts as an indicator of the male head of household's wealth. The result for women, however, is that their bargaining power decreases.

The process by which the 'emulation' effect occurs in individual countries may vary, and of course, may not occur at all, depending on how the growth process unfolds insofar as it affects women's labor opportunities. For example, rather than being made to be completely economically inactive as household income rises, women may be allowed to work in paid jobs. But their work opportunities may be so severely circumscribed as the economy transforms that their bargaining power is weakened, or men's simply increases more rapidly. An example of this is the case of South Korea where women's labor opportunities have been severely circumscribed. Women tend to be concentrated in production jobs in the export-sector, and have little chance for employment in jobs that provide training and job security. They continue to be excluded from managerial and supervisory positions, holding only 4.2 percent of those jobs in 1995 (UNDP 1999) and, at least until recently, the marriage ban was enforced, whereby women were forced to resign from their jobs upon marriage. In this case, women's movement into paid positions did not significantly improve bargaining power since the conditions of employment offered little in the way of remuneration, status, and security.[14]

Conversely, women may gain access to good jobs that pay high wages and allow job mobility. This may generate sufficient power for women to overcome norms that encourage men to enforce women's idleness to increase their control within the household and to enhance their social status outside the household. However this process unfolds (a question that has to be investigated at the micro level), the decline in female-male well-being may be a reflection of the intensification of gender bias during the growth process (Drèze and Sen 1995).

[Table 8 and Figure 3 about here].

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In sum, this methodology reveals some interesting features of the economic growth process in Asia during this period.[15] A number of indicators suggest that women's relative quality of life in Asia has improved from 1970 to 1990, although this may be unremarkable, given improvements in other regions of the world as well (UNDP 1999). What is most distinctive about these results is that women's well-being improved relatively more in those Asian countries with the slowest growth. Clearly, factors other than income matter—and may matter a great deal more than income, suggesting that it is not sufficient to rely on economic growth to improve women's relative well-being.

Nor does women's relative status automatically improve with growth. Indeed, looking at female to male population ratios, we can see that despite growth, women's relative life chances have diminished in some countries, and in no case, have their life chances reached those of women in SSA. This suggests that while we may have anticipated growth to be gender-enabling insofar as women were likely to be beneficiaries of export-oriented strategies, this did not materialize. To consider this issue further, in the next section, we take a closer look at trends in population ratios. Following that, we turn to multiple regression analysis to assess determinants of FMRs in addition to (or in spite of) economic growth.

V. Gender Inequality and "Missing Women"[16]: Trends in Population Ratios

If we were to choose a single measure of gendered differences in quality of life, a good proxy candidate would be the female to male population ratio. Decisions to invest in female children's nutrition, health care, and even seeing a pregnancy through when the fetus is known to be female, reflects society's valuation of females. Social perceptions aside, improvements in

women's access to power and material resources enable them to invest more in their daughters' health and nutrition, and to avoid sex-selective abortions or infanticide that favor males. Thus, as an indicator, this ratio can be quite revealing. It was pointed out in Section II that it is also useful to look at age-specific sex ratios since much of the effects of gender discrimination in health and nutrition, related to a lower valuation of women, shows up in the early years of childhood.

Figure 4 gives trends in the number of females per 100 males from 1960 to 1995 in the Asian economies we are considering in this paper. Trends for the East Asian NIEs, which have the highest per capita incomes, have a thick line to differentiate them from lower income Asian economies that adopted export-led growth strategies much later. The wide variations in ratios reported for Hong Kong from 1980 to 1995 seem unusual. A possible explanation for the rising FMR there and to a lesser extent in Singapore is the in-migration of a large number of female domestic workers—numbered at 152,000 in Hong Kong by 1995 and 80,000 in Singapore (United Nations 1997). South Korea has not been a major importer of foreign domestic workers.

The major sending countries have been Indonesia, the Philippines, Sri Lanka, and Thailand—countries that show a declining FMR. In the case of Indonesia, the export of female labor has been an explicit government policy, whereby a goal of sending 500,000 female migrants overseas was set out in the 1989-94 Fifth Five-Year Plan (United Nations 1997).

Figure 4 shows that FMRs in the region are converging, but despite this, continue to be highest or rising in the poorest countries. Even more surprising is that these trends run in the opposite direction of more slowly growing regions of the developing world for the period 1970 to 1995. Figure 5 gives a comparison of these trends. Regional data are given, and for Asia, the unweighted average for countries in our sample is shown, as well as the (weighted average) ratio

for all Asia, including Japan, but excluding Sri Lanka, for comparative purposes. Sub-Saharan Africa has the highest ratio of women to men, despite several decades of disappointing economic performance, and that ratio is rising. Latin America, too, has shown some improvement. For the Asian countries in our sample, however, we see little improvement in the sex ratio from 1970 to 1995.

As noted, the FMRs for the total population might be masking sex-selective out-migration trends within the region and so it is useful to examine age-specific sex ratios, and in particular, the ratios for the age group 0-14 years.[17] It will be remembered from Section II that the number of male births exceeds female births, but thereafter, females have stronger survival chances if given similar treatment in health care, nutrition, and caring. At birth, a benchmark for females per 100 males is 96 (Sen 1990b; Saith and Harriss-White 1999).

Downward trends in the FMR for the 0-14 age group can occur as a result of two causes. If infant mortality rates decline, and males have a survival disadvantage in that age group, then the FMR for older age groups can fall, assuming the FMR in that younger group is lower than unity. After Drèze and Sen (1995), we call this the 'changing mortality bias' effect.[18] A fall in the FMR for this group could also be the result of worsening conditions for females in terms of access to resources and caring, or sex-selective abortions, and by implication, social valuation. Figure 6 gives decadal estimates for the countries in our sample, and Figure 7 gives regional estimates for Sub-Saharan Africa and Latin America, as well as the unweighted average for the Asian countries in our sample.

[Figures 4 through 7 about here].

The number of females per 100 males in this age group has been declining in all the

countries in the sample. The data are not sufficiently disaggregated by age group to be able to assess the degree to which this trend is being driven by worsened gender discrimination or the 'mortality' effect. It is noteworthy, however, that the trends for higher income NIEs contradict those trends in the aggregate FMR ratios in Figure 4. That is, FMRs for the 0-14 age group are falling, but are rising for the total population, which captures in-migration of foreign female domestic workers. Figure 7 shows a similar downward trend of the FMR for the age group 0-14 in all regions, but this is occurring at a steeper rate in Asia. Still, in Sub-Saharan Africa and Latin America, the ratio is above 96, while it below that in the Asia region. These results suggest an uneven distribution of the benefits of growth, though this finding should be the starting point, not end point of analysis, to understand why this is occurring.[19]

VI. Improving Women's Life Chances: Does Economic Growth Help?

The low FMRs in Asia are indicative of women's relative lack of bargaining power, stemming in part from their limited access to and control over resources. What can be done to improve women's life chances? We can explore this question by examining the factors that explain changes in the female to male population ratio in the developing and semi-industrializing Asian countries in our sample. This is done using econometric analysis, for the period 1970 to 1990.

Of particular interest is whether economic growth leads to more equitable opportunities for women to live a quality life, construing the FMR as a proxy for relative female well-being. Economic growth, should it influence well-being, may operate through its effect on women's access to jobs which raises their status within the family and permits a more equitable

distribution of household resources. Therefore, a measure of women's share of jobs is also included as an explanatory variable. Also, women's education may increase women's bargaining power and their ability to make choices that improve their daughters' life chances. Following Murthi, Guio, and Drèze (1995), I use literacy rates to reflect a threshold of empowerment that improves women's status and bargaining power.[20] Male literacy rates are also included as an explanatory variable, but are not expected to have a significant positive effect on FMRs. Finally, an avenue through which women's relative well-being may be improved are government programs that redistribute income. Thus we include measures of government consumption as a share of GDP and expenditures on public education as share of GDP. It would have been useful to also include a measure of government expenditures on health but the sparse data made this impossible.

These relationships were estimated with ordinary least squares (OLS) regression, two-stage least squares (TSLS), and a fixed effects model. The precise specification of the model and explanations for variations of the model are given in Appendix B. We turn to the results of the regression analysis, summarized in Table 9. That table shows the direction of the effect of the explanatory variables on changes in the FMR and asterisks denote the statistical significance of that relationship. (Detailed results are given in Appendix B, Table B.2).

[Table 9 about here].

Immediately obvious from these results is that that the growth of per capita income does not have a statistically significant effect on FMRs, though in the OLS and TSLS models the direction of effect is positive and in the fixed effects model it is negative. In contrast, female bargaining power variables exert a positive effect on FMRs. It may be that women's increased

share of the labor force is the result of economic growth, and that therefore, growth's effect on women's relative well-being is in fact significantly positive, with its effect captured by this variable. A similar argument can be made for female literacy. But the results also suggest, that even in the absence of growth, women's life chances improve as they gain access jobs and to schooling.

On the other hand, male literacy rates have a negative and significant effect on the FMR. Perhaps more surprising is the negative effect of government consumption as a share of GDP on the FMR. The implications of this are that government expenditures do not automatically lead to an improvement of women's status, and that their distribution in fact may be unequal by gender. The reverse is true with regard to expenditures on public education as a share of GDP, however.

Some caveats about these results should be noted. The relatively low adjusted R^2s on these regressions suggest that numerous other factors are not accounted for that we might want to include. For example, data on health care, a longer time series on gender-disaggregated wages, and social security expenditures as a share of GDP would be useful to include in the model, and these results should therefore be interpreted with caution.

Further, as was noted earlier, women's access to jobs may improve their bargaining power, but not all jobs are created equal. Jobs that are insecure, that provide intermittent earnings, or that are dead end, may lead to little improvement in women's position in the household. In that regard, the positive effect of women's increased share of the labor force found in this regression analysis should be viewed with caution, although it would seem that in the aggregate, for the countries examined here, access to paid jobs has had a positive effect.

Nevertheless, insofar as this analysis indicates associational relationships, the strikingly

similar results obtained from each of these regressions have some important policy ramifications. They suggest that efforts to promote economic growth as a panacea for gender inequality may not yield the expected outcome. It is more likely that state-level policies the redistribute income to women, or provide them opportunities for secure employment, will make a bigger difference. Insofar as growth increases public revenues that can be allocated to educational spending, this may be the most important avenue by which growth enhances gender equity.

VII. Conclusion

Rapid growth in some Asian economies has raised absolute levels of living standards, measured by a wide array of indicators, though poverty and inequality persist. In a number of ways, women have benefited differentially from this process, as evidenced by greater improvement in female than male adult mortality rates, for example. Women's access to jobs and education have also increased so that they represent a larger share of the labor force in most of these economies today, and their years of educational attainment relative to men's have risen.[21] A surprising result, however, is that women's relative quality of life increased substantially—in fact, the most—in those economies with slow growth, suggesting that growth may not be the driving factor behind improvements.

Of particular note and cause for concern is the evidence that female life chances have decreased relative to those of men in a number of these countries. This is a surprising result, if we anticipate that an economic growth strategy that relies heavily on female labor will enhance women's status in society, making them more valuable and giving them increased bargaining power.

What lessons are to be drawn from these results? An important implication is that growth is not sufficient to remedy the gender inequality that exists in the distribution of resources and assets. An exception is that growth can generate public revenues to be invested in closing the gender gap in education. However, it appears too simple to assume that economic growth that depends on low-wage female labor will erase inequalities that pervade a variety of legal, political, and social institutions, as the case of the first-tier NIEs so clearly shows. The reliance on what is perceived to be 'cheap' female labor may reinforce and ratify social norms of gender inequality. Access to jobs, in order to reduce inequality, must yield some increase in bargaining power. But the types of jobs available in low-wage export industries do not generate those benefits—or they produce only limited benefits that may be insufficient to overcome social and political resistance in other arenas.

We can also infer from the findings presented here that macro-level redistributive policies that empower women are necessary to improve their relative well-being, and these can work, even absent favorable growth conditions. In place of uncritical adherence to market outcomes, countries might begin to explore a broader role for the state to play in enacting policies that raise women's bargaining power. Among others, these might include some combination of the following: affirmative action, higher and expanded coverage of minimum wages, policies that encourage firms to treat low wage (female) workers as an asset to be invested in. Social safety net legislation that extends protection and unemployment insurance to part-time workers would improve the quality of those jobs. [22]

 Further, the pursuit of gender equity in well-being is reason for the state to adopt an industrial policy that moves a country up the industrial ladder to higher value-added production,

and employment and training policies that insure women access to those jobs.[23] Such a focus would be necessary in order to move a country out of a labor-intensive export-led growth trap, whereby women churn in insecure jobs, and efforts to raise their wages lead to a decline in export demand, a loss of foreign investment, and thus female employment. The goal of industrial policy would be to create good jobs, accessible to women, that pay high wages and provide job security, and for which export demand is price inelastic.

To achieve these ends, industrial policies may include, as they have in South Korea and Taiwan, restrictions on foreign direct investment, trade restrictions, and government influence over credit allocation. But it is also necessary to use macro-level policies to insure women access to technologically advanced jobs, which neither South Korea nor Taiwan has done.[24] Eradication of the bias against employment of women in jobs that require technical training would necessitate policies, among others, that redistribute the responsibility for unpaid or caring labor. These might include childcare subsidies, and policies that permit men to participate in caring, such as paid paternity leave.

This is not to suggest that markets do not matter, but rather, to make the point that there are important complementarities between markets and government intervention. And in some cases, markets may simply have to be overridden by state policies (such as, for example, in the case of minimum wages). The extent to which governments override or complement markets will depend on a variety of institutional conditions, the nature of the gender system in any country, including the gender division of labor in paid and unpaid work, the structure of the economy, and conditions in competing economies. There is thus no one-size-fits-all set of state-level policies that will promote gender equity in well-being.

In sum, the results presented here point to some problems with the Asian export-led growth model that has relied on relatively low female wages to stimulate exports. Subsequent growth cannot, apparently, be relied on to raise women's well-being relative to men's, at least in these economies, and suggests that while women may be absolutely better off, the goal of gender equity in well-being remains elusive.

That women have absolutely raised their economic status is not to be dismissed lightly, however. Women who are more educated, and who can assure that their children will live longer and healthier lives, and that they themselves will have longer lives with fewer days spent in illness are likely to prefer some aspects of life today relative to what it was thirty years ago. But persistent gender inequality can place a ceiling on women's ability to advocate for themselves and for their children. Explicit state-level policies that enhance women's access to resources and empowerment are necessary to achieve that goal.

There is another lesson here—that a growth strategy that relies on gender inequality, because it reproduces women's low and vulnerable economic status, may not be the best one to improve their relative well-being. Life's richness and indeed survival itself depend to a large extent on our ability to make choices about how we live our lives, a choice that is less available to women than men when there is persistent gender inequality.

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Table 1.- Asian Growth Indicators

Country	Real Per Capita GDP in 1990 (1995 International Dollars)	Average Annual Growth Rate of GDP, 1975-95
Hong Kong	$18,813	7.3 %
Indonesia	741	6.3 %
South Korea	7,386	8.0 %
Malaysia	3,051	7.0 %
Philippines	1,059	3.2 %
Singapore	20,966	7.5 %
Sri Lanka	595	4.5 %
Thailand	1,977	7.7 %

Source: *World Development Indicators 1999.*

Table 2.- Quality-of- Life Indicator Values, 1990

Indicator	Hong Kong	Indonesia	South Korea	Malaysia	Philippines	Singapore	Sri Lanka	Thailand
Female Share of Labor Force	36.5%	38.5%	39.6%	35.9%	45.5%	40.4%	39.1%	45.4%
F/M Secondary School Enrollment	105.2	82.4	97.1	106.8	99.2	93.1	108.8	96.7
M/F Mortality	1.91	1.26	2.05	1.58	1.32	1.73	1.53	1.68
F/M Population	95.2	100.6	98.8	98.3	98.9	97.5	99.5	95.2
F/M Total Education	87.0	79.0	83.3	77.4	100.6	88.3	88.5	90.2
F/M Earnings	69.0%	65.7%	52.1%	53.8%	76.0%	56.0%	85.2%	64.5%
Fertility	1	3	2	4	4	2	3	2

Table 3.- Change in Quality-of-Life Indicators, 1970 to 1990

Indicator	Hong Kong	Indonesia	South Korea	Malaysia	Philippines	Singapore	Sri Lanka	Thailand
Female Share of Labor Force	2.4	*-0.4*	4.3	2.2	1.8	6.8	25.5	3.9
F/M Secondary School Enrollment	26.7	31.4	32.4	38.2	4.7	*-3.1*	3.8	26.5
M/F Mortality	0.02	0.08	0.78	0.36	0.12	0.04	0.44	0.42
F/M Population	4.9	*-1.8*	*-3.1*	0.6	*-0.9*	8.9	5.0	4.9
F/M Total Education	38.8	32.0	29.1	41.3	16.2	34.9	15.2	18.5
Fertility Decline	2.1	2.4	2.5	1.7	1.6	1.2	1.7	3.3

Note: Data on female share of labor force, female to male secondary school enrollment rates, and

female to male total educational attainment should be interpreted as percentage point changes.

Table 4.-Borda Ranking For Gender Equity in Quality of Life Indicators, 1990

	Rank (1=highest)	Total Points	Female Share of Paid Labor Force	Female to Male Secondary School Enrollment	Male to Female Mortality	Female to Male Population Ratio	Female to Male Educational Attainment	Relative Female Wages	Fertility
Sri Lanka	1	40	4	8	3	7	6	8	4
Philippines	2	37	8	5	2	6	8	7	1
Hong Kong	3	35	2	6	7	2	4	6	8
South Korea	4	33	5	4	8	5	3	1	7
Thailand	5	32	6	2	6	3	5	3	6
Singapore	6	31	7	3	5	1	7	4	5
Indonesia	7	23	3	1	1	8	2	5	3
Malaysia	8	21	1	7	4	4	1	2	2

Note: Maximum possible points = 56. Minimum possible points = 7.

Table 5.- Comparing Borda Rankings with Gender Development Index Rankings, 1990

	Borda Ranking	Gender Development Index Ranking
Sri Lanka	1	6
Philippines	2	7
Hong Kong	3	1
South Korea	4	4
Singapore	5	2
Thailand	6	3
Indonesia	7	8
Malaysia	8	5

Note: Gender Development Index Rankings are from UNDP (1995).

Table 6.- Improvements in Gender Equity, Measured by Quality of Life Indicators, 1970-1990: Unweighted Borda Ranking

	Rank (1=highest)	Total Points	Female Share of Paid Labor Force	Female to Male Gross Secondary School Enrollment	Male to Female Mortality	Female to Male Population Ratio	Female to Male Educational Attainment	Decline in Fertility
Malaysia	1	35	8	2	7	8	1	4
Thailand	2	31	5	4	6	5	3	8
Sri Lanka	3	30	3	8	5	4	8	7
South Korea	4	29	6	7	8	1	4	3
Hong Kong	5	28	4	5	1	6	7	5
Singapore	6	24	7	1	2	7	6	1
Indonesia	7	23	1	6	3	2	5	6
Philippines	8	16	2	3	4	3	2	2

Note: Maximum possible score = 48 minimum possible score = 6.

Table 7.- Improvements in Gender Equity, Measured by Quality-of-Life Indicators, 1970-1990: Borda Ranking Weighted by Distance from Ideal

	Rank (1=highest)	Total Points	Female Share of Paid Labor Force	Female to Male Gross Secondary School Enrollment	Male to Female Mortality	Female to Male Population Ratio	Female to Male Educational Attainment	Decline in Fertility
Thailand	1	38	7	7	6	5	5	8
Sri Lanka	2	29	8	2	7	7	1	4
South Korea	3	28	2	5	5	4	4	7
Philippines	4	27	5	8	8	1	3	3
Malaysia	4	27	6	2	6	8	7	1
Hong Kong	6	25	3	1	4	6	6	5
Singapore	6	25	4	4	3	3	8	2
Indonesia	8	17	1	3	2	2	2	6

Note: Maximum possible score = 48 minimum possible score = 6. In the final ranking, in the case of ties, countries are accorded the same rank as would have been obtained, if others in the same group were ranked below it.

Table 8.- Improvements in Gender Equity, Measured by Quality-of- Life Indicators, per Percentage Point Increase in Per Capita Income, 1970-90

	Rank (1=highest)	Total Points	Female Share of Paid Labor Force	Female to Male Gross Secondary School Enrollment	Male to Female Mortality	Female to Male Population Ratio	Female to Male Educational Attainment	Decline in Fertility
Sri Lanka	1	35	8	2	8	8	3	6
Philippines	2	33	7	3	6	1	8	8
Malaysia	3	31	5	6	4	6	1	7
Thailand	4	29	3	8	5	4	7	4
Indonesia	5	25	4	5	7	2	2	3
South Korea	6	23	1	7	3	3	6	5
Singapore	7	21	6	1	2	7	4	1
Hong Kong	8	19	2	4	1	5	5	2

Note: Maximum possible score = 48 minimum possible score = 6.

Table 9.- Explaining Changes in the FMR, 1970 to 1990

Independent Variable	OLS	TSLS	Fixed Effects
Growth of Per Capita GDP	+	+	—
Growth in Female Share of Labor Force	+ **	+***	+**
Female Literacy Rate	+ ***	+***	+***
Male Literacy Rate	— ***	— ***	— **
Government Consumption	— *	—	—
Government Expenditures on Public Education	+	+	+
Adjusted R^2	0.19	0.23	0.18

Note: Three asterisks (***) denote significance at 1 percent level, two (**) at the five percent level, and one (*) at the 10 percent level.

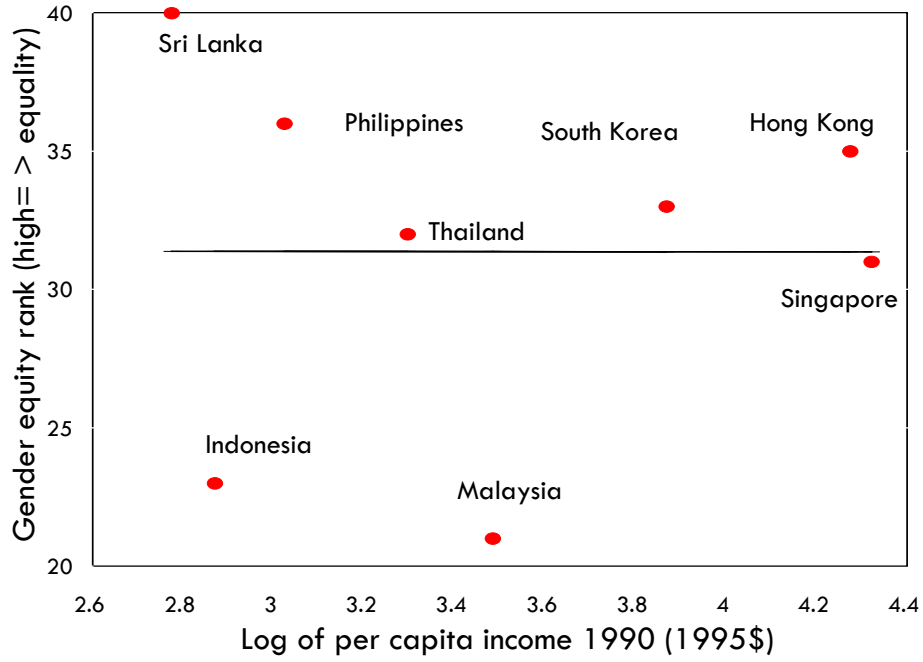Figure 1. Gender Equality (Borda Rank)
and Per Capita Income, 1990

Figure 2.-Weighted Borda Rank for
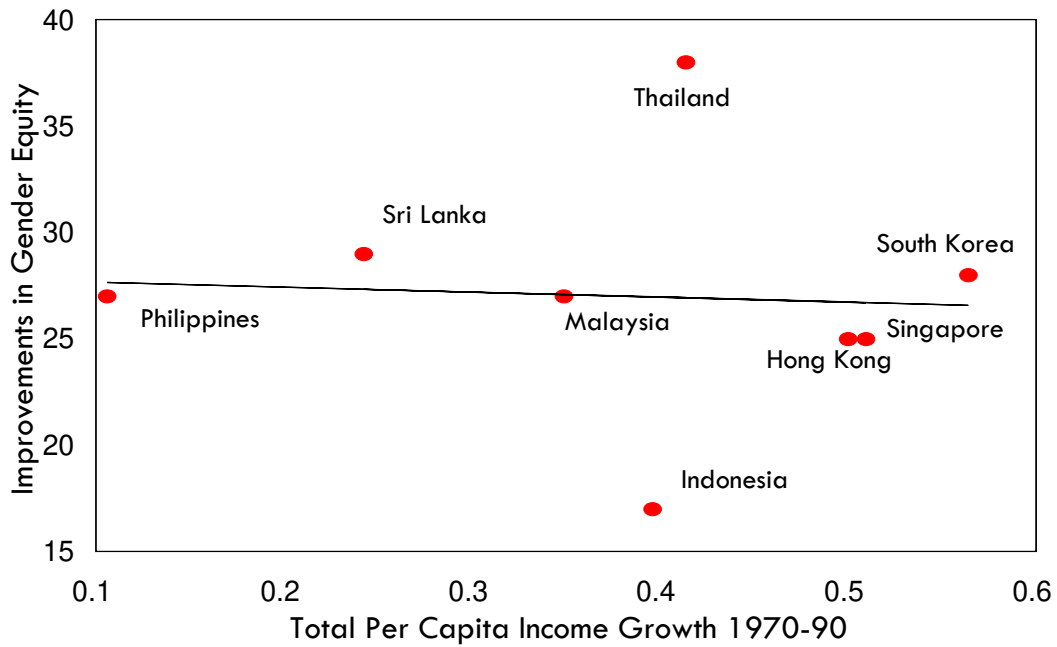Gender Equity and Income Growth 70-90

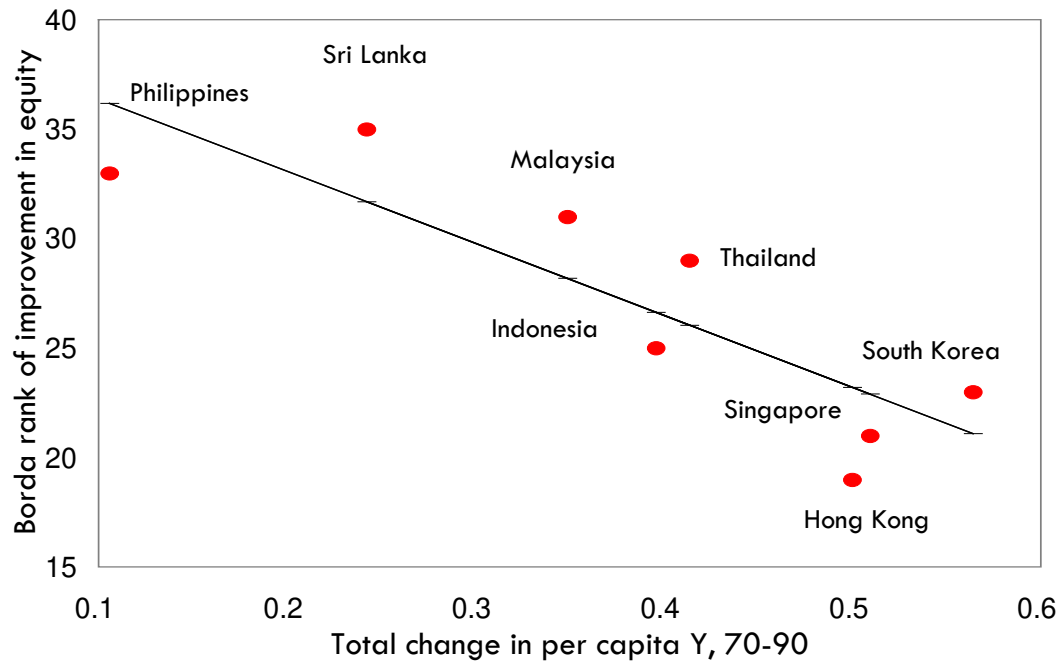## Figure 3.-Change in Gender Equity and Per Capita in Income

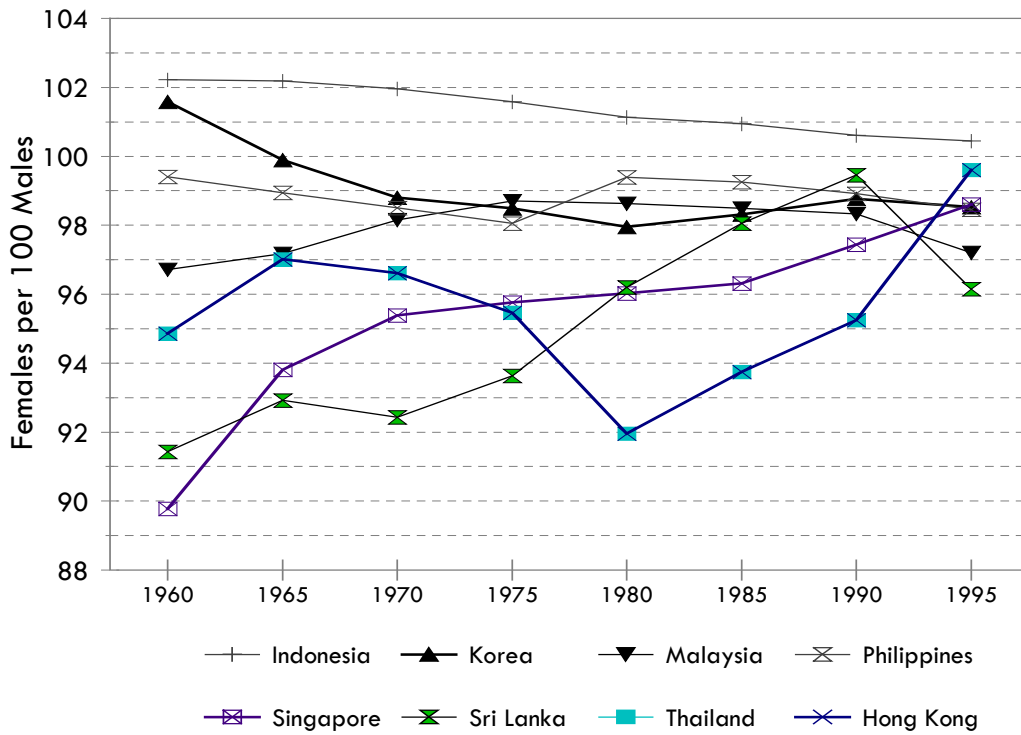## Figure 4.-Trends in Females per 100 Males, Total Population, Asia 1960-95

Figure 5.- Females Per 100 Males,
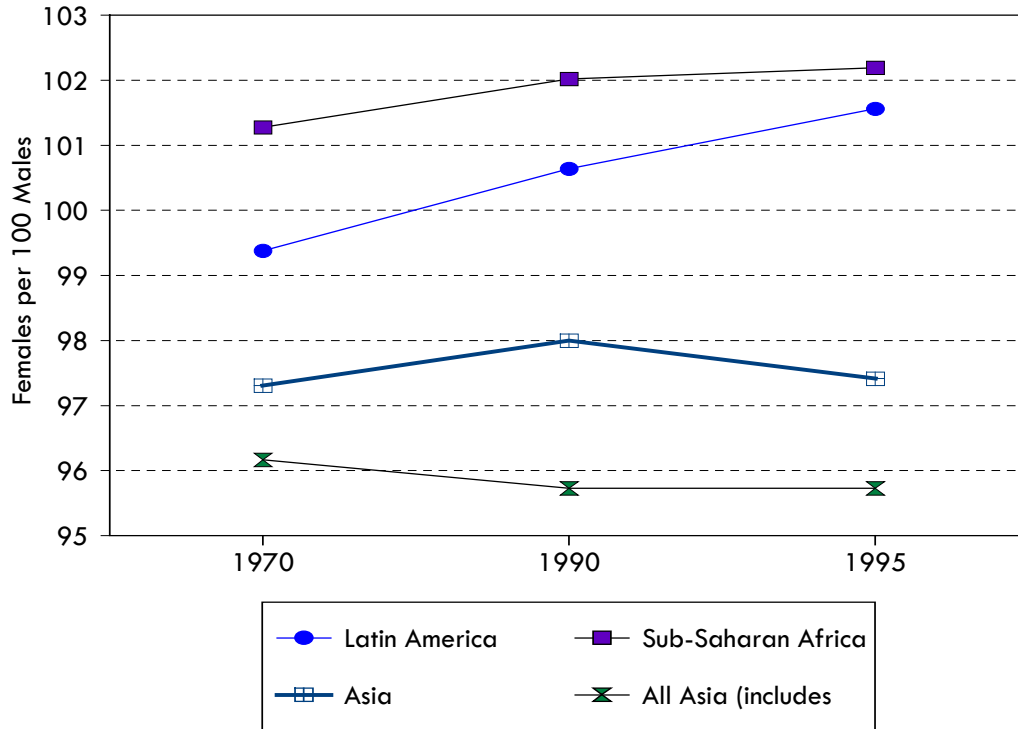## Total Population, 1970-90

Legend:
- Latin America (blue circle)
- Sub-Saharan Africa (purple square)
- Asia (square with cross)
- All Asia (includes (X mark)

Y-axis: Females per 100 Males (95 to 103)
X-axis: 1970, 1990, 1995

Figure 6 .- F/M Population, 0-14 Age
Group, 1970-90, Asia

Legend: Hong Kong, Indonesia, South Korea, Philippines, Malaysia, Singapore, Sri Lanka, Thailand
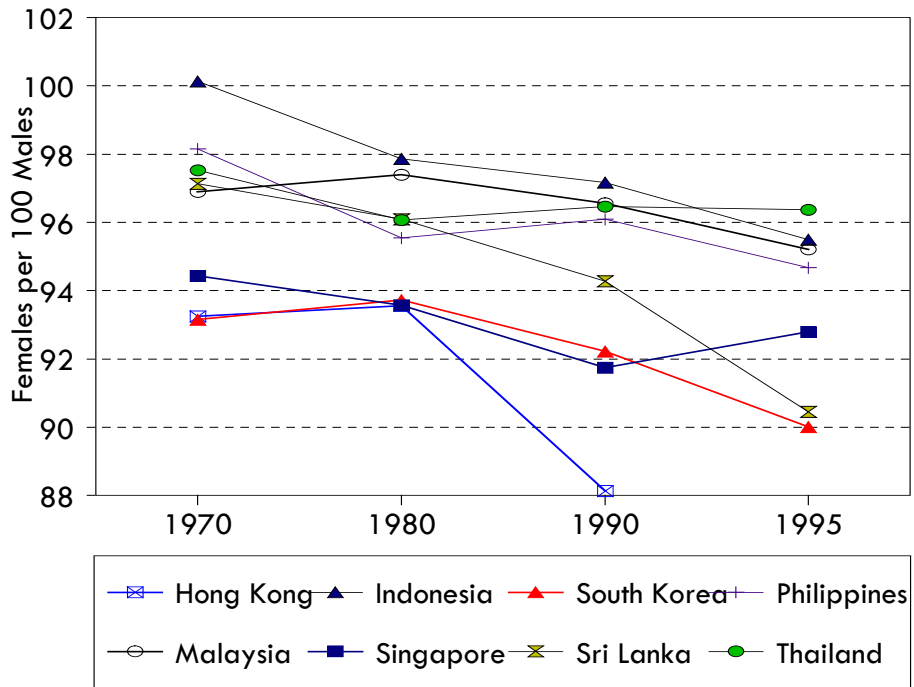
Figure 7.- Trends in Females per 100
Males, Ages 0-14

Legend: Latin America, Sub-Saharan Africa, Asia
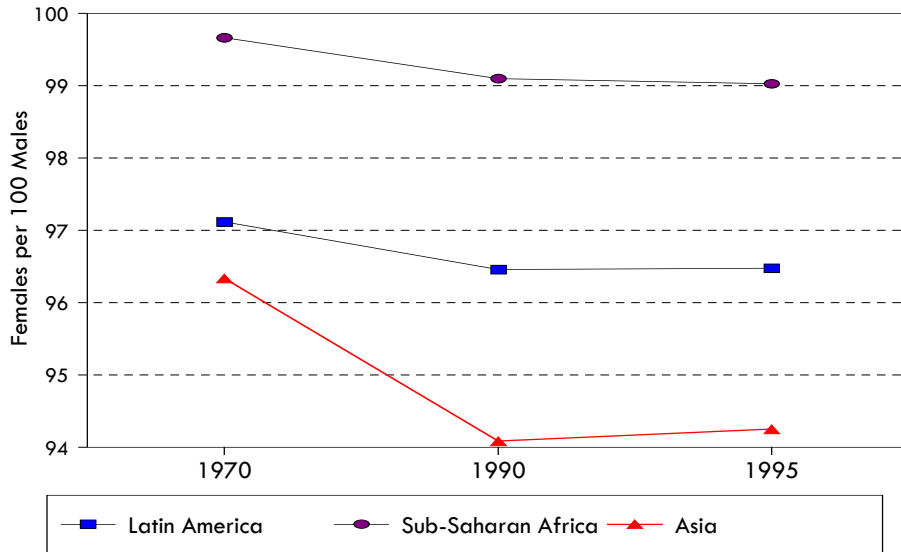
Appendix A

Table A.1.- Gendered Quality of Life Indicators: Definition of Variables and Data Sources

Variable	Definition	Source
Labor Force Representation	a. Female Share of Paid Non-Agricultural Activities b. Female Share of Labor Force	International Labour Organization (various years)
Secondary School Enrollment	Ratio of Female to Male Secondary School Enrollment Rates	World Development Indicators
Mortality	Ratio of Adult Male to Female Mortality Rates per 1000 (probability of dying between the ages of 15 and 60)	World Development Indicators
Population	a. Ratio of Females to Males in Population b. Ratio of females to males in ages 0-14	World Development Indicators
Education	Ratio of female to male average educational attainment for persons over 15	Barro and Lee (1996)
Relative Wages	Ratio of Female to Male Average Manufacturing Earnings	International Labour Organization (various years)
Fertility	Female Fertility Rate	World Development Indicators
Income	Per capita income in 1995$	World Development Indicators
Total Government Expenditures	Total Expenditures of Central Government as % of GDP	World Development Indicators
Government Consumption Expenditures	Current government expenditures (includes defense)	World Development Indicators
Gini Coefficient	Decade average of Gini Coefficient (from household surveys)	Deininger and Squire (1996)
Public Education Expenditures as % of GDP	Public spending on public education plus subsidies to private education at the primary, secondary, and tertiary levels.	World Development Indicators

Appendix B: The Econometric Model

To assess the determinants of changes in the female to male population ratio in the sample countries, the following basic model was estimated:

$$d(FMR_{it}) = \alpha_o + \beta_1 d(FMR_{it-1}) + \beta_2 d(LPCY_{it}) + \beta_3 d(LFF_{it}) + \beta_4 LITF_{it} + \beta_5 LITM_{it}$$
$$+ \; \beta_6 GC_{it} + \beta_7 PUBED_{it} + \varepsilon_{it}$$

where d is the difference operator, the subscripts *i* and *t* index across countries and over time, respectively, LPCY is natural log of per capita income measured in 1995 international dollars, LFF is the female share of the labor force, LITF and LITM are female and male literacy rates, respectively, GC is government consumption as a share of GDP, PUBED is expenditures on public education as a share of GDP, and ε is the normally distributed error term.

FMR_{it-1} is used to capture prior differences in the FMR across countries, with β_1 measuring adjustments to the FMR, assuming no differences in per capita income. β_2 measures the effect of changes in per capita income (the rate of per capita income growth) on changes in the FMR. The coefficients β_3 to β_7 measure the effect of variables affecting women's bargaining power and state expenditures as a share of GDP on changes in the FMR.

Because we might worry that per capita income is, not after, all a pre-determined variable, but is itself affected by the degree of gender equity in the economy, reflected in the FMR. To address this problem, the above equation was also estimated using two-stage least squares (TSLS). A number of plausible instruments are correlated with per capita income and excludable from the FMR equation. In particular, there is a great deal of evidence that growth in Asia is investment- and export-led and so we use as instruments: investment as a share of GDP, and exports as a share of GDP. Finally, in a third set of regressions, we use a fixed effects model which allows the constant term to vary across countries to capture country-specific characteristics that might affect FMRs but are not explicitly included in the variable list. The results of those regressions are shown in Table B.1.

Table B.1.-Regression Results on Determinants of FMR
Dependent Variable: D(FMR)

	OLS	**TSLS**	**Fixed Effects**
Constant	52.68 (3.65)***	52.73 (3.73)***	
FMR(-1)	-0.38 (-3.83)***	-0.38 (-3.90)***	-0.59 (-3.40)***
D(LPCY)	4.02 (0.83)	8.24 (1.02)	-0.62 (-0.10)
D(LFF)	0.44 (2.24)**	0.59 (3.51)***	0.48 (1.99)**
LITF	0.15 (2.70)***	0.17 (2.85)***	0.25 (2.78)***
LITM	-0.29 (-2.67)***	-0.33 (-2.80)***	-0.40 (-2.33)**
GC	-0.27 (-1.72)*	-0.17 (-1.24)	-0.24 (-1.27)
PUBED	0.45 (1.43)	0.29 (1.04)	0.30 (0.69)
N	46	46	46
Adj. R2	0.19	0.23	0.18
DW	1.73	2.53	1.87
F-Statistic	2.52**	3.09	3.95

Note: Three asterisks (***) denote significance at 1 percent level, two (**) at the five percent level, and one (*) at the 10 percent level.

[1] Eight countries and city-states in South and East Asia are covered in this study. Japan is not included since, by 1970, it was considered a 'developed' economy. Data limitations prevented the inclusion of some important countries in Asia such as India and China. It would be useful to expand this analysis to a broader range of countries as data become available.

[2] For an illuminating discussion of these issues, see Sen (2000).

[3] The primary indicator used is gender gaps in education.

[4] It could be argued, in response, that growth can enlarge the economic pie, making redistributive policies less gender-conflictive. The importance of that would depend on country specific institutional arrangements that mediate conflict. In some cases, where such arrangements do not exist, male backlash in response to redistributive policies that favor women can be socially disruptive and indeed dangerous to women in the cases where this is expressed in the form of domestic violence.

[5] A separate indicator, the Gender Empowerment Measure (GEM), is used by the UNDP to assess the degree of women's political representation.

[6] Explicit measures of agency such as political representation or legal rights are omitted because those that are commonly available in many instances do not always lead to improvement in outcomes, as in the case of land rights in India highlighted by Agarwal (1994). More accurate indicators of agency are required, but these necessitate detailed institutional analysis at the country level which can, however, be motivated by the results of a broader analysis of well-being such as this one.

[7] Some studies refer to the FMR as simply the ratio of females to males. I use that term here as a label for the number of females per 100 males.

[8] Sex-selective abortion is a relatively recent phenomenon, while in the past infanticide may have been used more frequently to achieve the same goal (Goodkind 1996).

[9] I am suggesting that the gap between female and male mortality rates narrows as women's choices become restricted, thereby having a negative effect on their life chances. One might argue, conversely, that gender oppression in the form of gender stereotypes that designate men as warriors, is an important cause of a male mortality rate that exceeds women's. The implication is that this gap reflects men's lack of 'choice' to influence their fate, which is instead culturally determined. There are clearly some costs to male hegemony, and this is one. Other male behaviors that lead to early death, such as alcohol and tobacco consumption, for example, are more likely the result of individual choice, although even here one might argue that gender norms shape behavior to some extent. I do not propose to resolve this debate here, but it may be informative to consider an analysis in which the norm for gender equity is parity in mortality rates. I do not pursue that exercise here because of my assessment that the preponderance of evidence is that women have less choice to make health and life style decisions that raise their life expectancy than do men.

[10] Thus, in our case, with 7 indicators (for 1990) and 8 countries, country A is awarded points between 1 (lowest achievement) and 8 (highest achievement) for each of 7 criteria. These are summed to provide the aggregate score (maximum = 56, minimum = 7), which is then used to rank countries on gender equality in well-being.

[11] Note that we now have 6 criteria by which to rank countries, since relative wage data that span the entire period are lacking for all countries.

[12] To do this, we take the absolute change in the variable and divide it by the gender ideal minus the value of the variable in 1990. The ideal is easy to determine for most categories although there are some exceptions. We assume that the ideal for school enrollments, total education, and labor force share is parity. Thus, the ideal school enrollment ratio is 100 females per 100 males (or 1), and for share of the labor force, we assume 50 percent is the ideal. For the ratio of females to males in the population, we set the ideal as SSA population ratios (102.5). For fertility, we use the unweighted value of the variable since it is not clear what the ideal number of children is. Similarly, we do not weight male to female mortality ratios for lack of information on what the ideal is.

[13] Specifically, changes in gender equity are weighted by total changes in per capita income.

[14] Similarly, Kabeer (2000), in her study of Bangladeshi women garment workers, found that earnings from homework in London were not likely to have as great an effect on women's valuation or bargaining power in the household as earnings from formal sector jobs in Dhaka.

[15] We might also wonder how individual gender well-being variables are related to one another and to possible determinants of gender equity in well-being. This can be done by calculating Pearson product moment correlation coefficients. I did this (results not reported here but available on request), and because of the apparently small effect of per capita income on gender equity, included some other variables that may influence gendered outcomes in well-being such as the Gini coefficient and government consumption as a percentage of GDP. The results indicated that growth was positively and significantly related to educational equity and government expenditures. Government expenditures did not appear, however, to have a significant positive effect on measures of women's relative well-being. This may not be surprising since, in many Asian economies, government spending is largely directed to economic activities, including export promotion, while only small percentages are spent on social welfare. Detailed measures of government spending could be more illuminating than this gross figure. The correlation matrix otherwise suggested that gender well-being variables do not move together, indicating the usefulness of a composite index.

[16] The term "missing women" is from Sen's (1990b) work that sparked interest in the lower-than- expected FMRs in several countries and regions.

[17] Data on FMRs at birth and in the age group 0-4 years old are preferred to 0-14, since they would make it easier to detect gender discrimination. But those data were not available for all of the countries in our sample.

[18] This does not mean that the decline in the FMR for the age group 0-14 is a natural phenomenon since, in many areas of the world, this decline in mortality has been accompanied by a rising FMR, e.g., Kerala state in India and in a number of industrialized economies (Johannson and Nygren 1991).

[19] For example, the case of Sri Lanka (Figure 6) is disturbing. Why should female to male ratios of this age group be falling so rapidly? One possibility might be the adoption of structural adjustment policies and government reductions in public expenditures that ensued, which have had a differentially negative effect on females.

[20] I also tried other measures of educational attainment, including women's and men's years of education relative to the maximum. For example, I used women's total number of years of education as a percentage of total possible years (12). Using this method for calculating women' and men's attainment in total and primary education, I found positive signs on women's education and negative for men's but in both cases, coefficients were insignificant. I obtained somewhat better results using secondary educational attainment, but results were not robust across the models I estimated. This led me to believe that the issue regarding employment opportunities in South Korea, raised

on page 15-16, is an important one. That is, women's education, beyond some threshold, may not lead to empowerment, if it does not translate into meaningful work opportunities.

[21] A notable exception in the area of education is women's declining share of secondary school enrollments in Singapore (Table 2).

[22] For example, to the extent that South Korea provides unemployment insurance, it is targeted toward large firms and workers with long job tenures, which effectively excludes the majority of women.

[23] See Seguino and Grown (2002) for a more detailed discussion on the use of macro-level policies to promote gender equity.

[24] As an example of the negative gender effects of technological upgrading in Taiwan, see Berik (2000). Berik presents evidence of a relative decline in female manufacturing employment and greater gender wage inequality as a result in the process of technological restructuring. Women have faced barriers to employment in restructured industries, suggesting that absent state-level policies to influence employment decisions, the existing configuration of gender norms disadvantages women. This occurs, despite the closing educational gap between women and men.