

## ADB Economics Working Paper Series



### Inclusive Growth and Gender Inequality in Asia's Labor Markets

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Yana van der Meulen Rodgers and Joseph E. Zveglich, Jr.  
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## ABSTRACT

This study examines gender inequality in labor markets in Asia and the Pacific, with a focus on the structural drivers of women's labor force participation. Demographic survey data indicate that in Asia's lower-income countries, economic necessity is an important push factor behind women's employment. Also, being married and having young children both reduce the likelihood that a woman is employed. In a separate analysis for Taipei, China, this disincentive effect from young children on women's employment has increased over time. These results point to the importance of policies that support women's roles as caregivers while they are employed in market-based activities.

Keywords: labor force participation rates; employment; gender gap

JEL Classification: F66, J21, J22, O40

## I. INTRODUCTION

A growing body of evidence shows that gender inequalities can make the process of development less inclusive by weakening the ability of household members to care for each other or to engage in productive activities. For example, gender discrepancies in education can make the labor force less effective, undermining the economy's growth potential. At the same time, structural changes that accompany the development process—as a result of technological change, international competition, or policy liberalization—can substantially alter the constraints that women and men face when they approach new economic opportunities. The extent to which these forces lead to greater gender parity or greater divisions will influence the extent of inclusiveness of future growth.

Policy and scholarly discourse offer alternative notions of gender equality, with varying degrees of emphasis on equality of opportunity and equality of outcome. Equality of opportunity is most often associated with formal, legal equality in access to education, health services, and employment. It is also associated with equal chances for men and women to participate in decision making and to have a voice within and outside of the household. In contrast, equality of outcome commonly refers to gender parity in income, wealth, assets, market-based work, and household work. The two concepts are closely related and mutually reinforcing. Giving women greater opportunities can improve their economic outcomes, while more equal outcomes can foster more balanced gender relations that in turn help equalize opportunities.

To shed light on these ideas, this study examines gender inequality in developing Asia's labor markets, with an in-depth focus on the structural drivers of women's labor force participation. Women's labor force participation is viewed as both an opportunity and outcome. As an opportunity, labor force participation enables women to enhance their individual and household income and wealth, and it gives women more autonomy and greater say over household decisions. As an outcome, participation in income-earning production has intrinsic value deriving from the more favorable way it is viewed relative to uncompensated household production.

At the macro level, although globalization has been seen primarily as a positive development, women constitute the largest group who have not fully benefited. For many developing countries in Asia, the emphasis on maintaining competitiveness in the world market has meant staking a claim to the low-wage niche, resulting in downward pressure on women's wages and segregation into jobs characterized by insecurity and poor working conditions. At the micro level, women's labor market participation has risen without any relief from domestic-based obligations. In order to facilitate more inclusive growth, these structural drivers of women's employment thus call for policy reforms that promote decent and productive employment opportunities for women, a macroeconomic environment that supports women's roles as income and care providers, and greater public investment in infrastructure and social services.

## II. LINKS BETWEEN ECONOMIC GROWTH AND GENDER INEQUALITY

While understanding how gender inequality and the macroeconomy interact is needed to formulate supportive policies, the relationship is complex. Considerable debate has emerged regarding both the direction of causality and the distributional consequences.<sup>1</sup> Theoretically, rising income levels can narrow gender inequality through such channels as the demise of

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<sup>1</sup> The discussion of these theoretical channels draws from World Bank (2011b).

traditional structures that reinforce human capital differences between men and women, the rising opportunity cost of women's time outside of the labor force, the strengthening of women's economic and property rights, and the introduction of labor-saving consumer durables through technological progress.

Yet economic growth does not necessarily mean inequality will decline, especially if unpaid work burdens, biased laws, differential access to resources, and social norms continue to constrain women's ability to take advantage of new, well-paid employment opportunities (World Bank 2011b). Gender differences in the drivers of labor market opportunities play a crucial role in constraining women's advancement in the labor market and in achieving gender equality in the labor market. These drivers include household dynamics (especially women's relatively greater time burdens in performing unpaid household work), formal institutions (including statutory laws that favor men and inadequate public infrastructure that contributes to women's domestic work burdens), markets (particularly unequal access to credit, agricultural inputs, and investments in human capital), and informal institutions (such as employers' discriminatory attitudes toward women workers and social norms that restrict women from engaging in market-based work). These drivers are mutually reinforcing and can generate persistent obstacles toward more equitable occupational distributions and narrowing pay differentials.

In the reverse direction, gender inequality can harm economic growth through a complex set of channels, including the reduction of the human capital of women and their children, inefficient allocation of resources, suboptimal governance in business and governments, and reduced aggregate productivity. Yet some aspects of gender inequality may well induce more rapid economic growth, especially in the short term when women's concentration in low-paid jobs helps to keep labor costs low and improve competitiveness in world markets. Given the contradictory theoretical links, ultimately it comes down to the empirical evidence.

## **A. Growth Affects Gender Inequality**

A growing number of empirical studies have shown causal links between economic growth and gender inequality, with inequality improving or worsening depending on the gendered indicator under consideration. A considerable body of evidence indicates that economic development reduces the disadvantages faced by women, especially in educational attainment, life expectancy, and labor force participation (World Bank 2011b). Economic development brings higher incomes and improved service delivery, which helps close gender gaps in educational attainment, health outcomes, and employment. For some countries, technological improvements worked to women's relative advantage as the returns to cognitive skills rose relative to the returns to manual skills.

Growth together with globalization has also provided opportunities for girls and women to embark on education and labor market tracks from which they had previously been blocked by traditional institutions. For example, low-caste girls in India have increased their enrollment in English language schools, thus preparing them for a broader range of jobs in the global economy, while traditional networks have still channeled low-caste boys into local language schools (Munshi and Rosenzweig 2006). More generally, growth can improve multiple dimensions of women's well-being. Forsythe, Korzeniewicz, and Durrant (2000) found that economic growth from 1970 to 1992 led to improvements in overall women's status, as measured by the United Nations Development Programme's Gender-related Development Index. Yet economic growth may not be sufficient to improve gendered well-being in all its dimensions. In particular, Klasen and Wink (2003) argue that rising per capita income is

associated with mixed evidence for improvements in women's relative status, with an increase in the absolute number of "missing women" and a growing incidence of sex-selective abortions in Asian economies contrasting with gains women experienced in education and labor-market outcomes.

Increased openness to trade and foreign direct investment (FDI) has been a key growth driver in many Asian countries, often giving women greater access to employment in export-oriented labor-intensive manufacturing. However, women may not benefit on net from these new paid employment opportunities if their employment gains have been accompanied by precarious working conditions and an expansion of informal-sector jobs (which lack basic legal and social protections and are not subject to formal economic regulations). Pressure from international markets to keep production costs low may induce firms to offer increasingly insecure jobs that are temporary, casual, flexible, and characterized by poor working conditions.<sup>2</sup> For example, Bhaumik (2003) found that following India's sweeping trade liberalization in 1991, the share of the workforce considered to be casual grew, with larger increases for women workers compared to men in both rural and urban areas.

Across countries, the casualization of the workforce can be partly explained by the growing tendency of final-goods producers to subcontract smaller-scale, home-based operations.<sup>3</sup> Home-based workers are predominantly women who work for lower pay (often on a piece-rate basis), receive few (if any) fringe benefits, pay their own utility costs, and work long hours. In view of their informal status, most home-based workers remain uncovered by labor regulations that raise the cost of labor. They are predominantly new labor-market entrants, women who have lost their formal-sector jobs, and women who need to combine paid work with childcare obligations.

Further economic growth generated through openness to trade may put downward pressure on the wages of workers in the export sector and, to the extent that women workers account for a high proportion of employment, contribute to wider gender wage gaps. Supporting this argument, Berik, Rodgers, and Zveglic (2004) used data for Taipei, China and the Republic of Korea and found that increasing competition from international trade is associated with larger wage gaps between men and women. Because the analysis controlled for gender differences in productivity characteristics, the widening wage gap was interpreted as a sign of increased wage discrimination. The authors argued that rising wage gaps with international trade may be associated with wage concessions from workers in a manner that disadvantages women workers. Similar results were found for India in Menon and Rodgers (2009). In particular, after India's sweeping trade liberalization, firms appeared to favor male workers over female workers in the wage bargaining process, and the residual gender wage gap grew.<sup>4</sup> Yet others have argued that jobs in the export sector offer better pay compared to the alternatives for women workers (Kabeer 2004).

Technological change, a key driver of economic growth, can also affect gender inequality. Studies have shown that in middle- and higher-income economies technological improvements have displaced women from low-paying jobs in import-competing sectors. In particular, women in middle- and higher-income economies tend to cluster in manufacturing industries that have begun to upgrade their technologies, reduce the size of their workforce, and

<sup>2</sup> See especially Balakrishnan (2001); Benería (2007); and Barrientos, Kabeer, and Hossain (2004) for more support of these arguments.

<sup>3</sup> Carr, Chen, and Tate (2000) provide further support for this argument.

<sup>4</sup> In contrast, Black and Brainerd (2004) found declining residual gender wage gaps in industries in the United States that experienced greater competition from imports.

move production to lower-wage countries. In the case of Taipei, China, technological upgrading and rising capital intensity of export-oriented manufacturing after 1980 was linked to a relative decline in employment opportunities for women (Berik 2000). Women in lower-income countries can also experience job displacement when technological change makes traditional female jobs redundant and when women face barriers to training for new jobs. For example, the adoption of new rice-husking equipment in India's food processing industry and new technologies in India's textiles and garment industry led to job losses for women (Jhabvala and Sinha 2002).

## **B. Gender Inequality Affects Growth**

In the reverse direction, gender inequality can also have a causal impact on economic growth. A growing body of empirical evidence indicates that gender inequality can promote some macroeconomic aggregates when considering shorter-term effects, while gender inequality serves as a drag on growth when considering longer-term effects.<sup>5</sup> In particular, gender inequality in wages and employment can actually stimulate export growth in the shorter term. Since the 1970s, women's jobs in highly competitive export industries (especially in garments, textiles, and electronics) have been important in generating foreign currency earnings.<sup>6</sup> Reliance on women workers in labor-intensive, export-oriented manufacturing has become a common pattern across Asia's high-growth economies as women's share of manufacturing employment rose during their export drives. While the concentration of women in export manufacturing has received the most attention, even in agriculture, women's seasonal or daily wage labor on farms has proven critical to keeping costs low and export demand high.

In the longer term, a number of compelling studies indicate that gender inequality in education and employment act as a drag on economic growth. Educational gender gaps, for example, are linked to higher rates of fertility and lower saving rates. Rising fertility can reduce investment in children's education and health. Moreover, educational inequality can contribute to women's unequal household bargaining power, affecting the distribution of household resources, given women's greater tendency to allocate spending to children's needs. By lowering the resources invested in children, gender inequality reduces the quality of the future labor supply and long-run productivity growth. Further, systematic differences in investments in girls' and boys' education can be inefficient due to distortions in skill levels (Boschini 2003). Investing too much in less-talented men while investing too little in competent women reduces the average skill level in the economy, with negative repercussions for total productivity. Such distortions may arise from cultural forces around gender norms that channel men and women into gendered occupations. Hence, social norms can influence gender-specific educational choices, which in turn can result in a suboptimal allocation of ability. Cross-country evidence in Boschini (2003) showed that the presence of gender stereotypes reduces skill acquisition, technological change, and economic growth.

Closely related, cross-country regressions in Busse and Nunnenkamp (2009) demonstrated that foreign firms responded positively to gender equality in education over the period 1980–2005. This statistically significant effect is limited to middle-income, developing host countries and developed source countries, with the interpretation that gender equality and growth goals are complementary in countries that are aiming to reduce gender education gaps. Greater equality in education helps to boost FDI by expanding the pool of skilled labor, and it also enhances economic growth through spillover effects from FDI on growth. Finally, Klasen

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<sup>5</sup> This discussion on gender inequality and economic growth is based on a comprehensive review in Berik, Rodgers, and Seguino (2009).

<sup>6</sup> The feminization of foreign exchange earnings is discussed further in Samarasinghe (1998) and Seguino (2010).

and Lamanna (2009) confirmed the substantial negative effect of gender gaps on growth previously reported in the literature. Their analysis, which covers 93 countries over the period 1960–2000, found that countries with wider gender differences in labor force participation rates grow more slowly, with simulations showing lower growth in the Middle East and Northern Africa and South Asia regions due to this effect.

### III. GENDER INEQUALITY IN ASIAN LABOR MARKETS: MACRO-LEVEL EVIDENCE

Aggregate labor market statistics for Asia and the Pacific indicate improvements in gender equality for some metrics, but persistent gaps in others. In particular, women's representation in the labor force has approached near equality with that of men in the lower-income and the developed member economies, but it has remained low in many middle-income countries in the region. Yet occupational segregation and gender wage gaps remain problematic across the region. On average, women are more likely than men to engage in work as unpaid helpers in family businesses, and their self-employment endeavors are often smaller in scale.

Among developing member economies, some of the highest labor force participation rates for women in 2010 are found in East Asia and the Pacific (Table 1). Women's labor force participation rates are particularly high in the People's Republic of China (68%), Cambodia (79%), and the Lao People's Democratic Republic (Lao PDR) (77%). Women have low labor force participation rates—relative to women in other regions and relative to men in the same region—in South Asia. Among individual countries, women's labor force participation is especially low in Afghanistan (16%), Pakistan (22%), and India (29%). Barriers to women's presence in the workforce due to religion, conflict, and social attitudes help explain some of these very low female labor force participation rates.

A number of countries exhibit substantial changes, both negative and positive, in female labor force participation between 1990 and 2010. Stagnation and even some declines are found across the region, especially in Armenia (from 61% to 49%) and the People's Republic of China (from 72% to 68%), largely reflecting the transition from socialism to market economies in the early 1990s. Men's labor force participation rates have also fallen in this region. In the opposite direction, increases were particularly strong in Bhutan and the Maldives. Led by Australia and New Zealand, developed member economies also showed an increase in women's participation in the labor market following the implementation of more family-friendly work policies and the continuation of a policy environment conducive to women's progress in the labor market.

**Table 1: Labor Force Participation and Women's Share of the Labor Force, 1990 and 2010**

	Adult (15+) Labor Force Participation Rate, %				Women's Share of the Adult Labor Force, %	
	1990		2010		1990	2010
	Women	Men	Women	Men		
Central and West Asia	54.7	74.9	55.2	74.2	44.3	44.6
Armenia	60.7	77.2	49.0	69.6	46.5	46.5
Azerbaijan	54.0	70.6	61.1	67.8	45.7	49.0
Georgia	55.1	74.5	55.6	73.8	46.1	47.0
Kazakhstan	62.3	78	66.4	76.8	47.0	49.4
Kyrgyz Republic	58.4	74.3	55.2	78.2	46.1	42.7
Tajikistan	58.2	75.7	57.3	74.8	44.5	45.2
Turkmenistan	46.4	74.8	46.4	75.7	39.7	39.3
Uzbekistan	46.1	73.2	47.6	74.4	40.0	39.8
East Asia	70.8	84.1	66.8	79.6	44.4	44.5
China, People's Rep. of	72.4	84.7	67.9	80.2	44.6	44.6
Hong Kong, China	47.2	79.3	51.0	68.3	36.5	46.0
Korea, Rep. of	47.1	73.4	49.2	71.6	39.7	41.3
Mongolia	52.3	62.5	53.9	65.0	46.6	46.4
Taipei, China	44.5	74.0	49.9	66.5	37.5	43.6
South Asia	35.8	85.3	31.8	81.3	28.0	27.1
Afghanistan	15.5	81.5	15.5	80.4	14.9	15.2
Bangladesh	61.7	88.4	56.9	84.4	39.4	39.9
Bhutan	49.6	78.2	65.5	76.0	37.1	42.5
India	34.8	85.1	29.0	80.7	27.4	25.3
Maldives	20.2	77.2	55.1	76.4	19.0	41.8
Nepal	80.0	90.5	80.3	87.7	46.9	49.2
Pakistan	13.4	84.6	22.4	83.3	12.8	20.7
Sri Lanka	36.3	78.0	34.6	76.2	31.5	32.2
Southeast Asia	59.9	82.6	58.5	82.0	42.8	42.4
Brunei Darussalam	44.0	82.2	55.7	76.8	31.4	42.1
Cambodia	77.7	84.3	79.3	86.6	52.6	49.8
Indonesia	50.2	81.1	51.0	84.2	38.6	38.2
Lao People's Democratic Republic	80.0	83.0	76.6	79.4	49.7	49.8
Malaysia	43.1	80.9	43.7	77.1	34.3	35.8
Myanmar	72.1	79.0	75.0	82.0	48.4	48.9
Philippines	48.0	82.8	49.5	79.4	36.6	38.8
Singapore	50.7	79.3	56.7	77.0	39.1	42.3
Thailand	75.8	87.3	63.8	80.2	47.4	45.7
Viet Nam	75.6	84.7	73.1	81.1	49.6	48.5
The Pacific	60.2	76.2	62.4	75.2	43.2	44.7
Cook Islands	41.3	61.9	64.2	76.1	–	–
Fiji	29.1	83.4	39.3	79.6	25.6	32.3
Kiribati	76.1	86.1	56.3	71.5	–	–
Marshall Islands	35.4	66.3	34.1	66.1	–	–
Micronesia, Fed. States of	30.1	56.8	50.1	67.2	–	–
Palau	59.5	77.2	59.7	76.9	–	–
Papua New Guinea	70.9	73.9	70.6	74.1	48.0	48.3
Samoa	39.8	76.5	42.9	78.2	32.1	34.3
Solomon Islands	52.8	77.1	53.1	79.9	39.1	38.4
Timor-Leste	40.7	78.6	38.4	74.4	33.0	33.2
Tonga	35.9	75.5	53.6	75.2	31.3	42.9
Vanuatu	78.6	88.1	61.3	79.7	46.4	42.9
Developing Asia	56.1	84.1	51.1	80.6	38.9	38.1
Developed member economies	50.4	77.1	51.1	72.1	40.8	42.9
Australia	52.2	75.7	58.7	72.5	41.3	45.3
Japan	50.1	77.4	49.5	72	40.7	42.4
New Zealand	53.5	74.3	61.5	74.2	43.2	46.8

Note: Regional averages are population-weighted averages. Data for Nauru and Tuvalu are not available. Data for the Cook Islands, Kiribati, the Marshall Islands, the Federated States of Micronesia, and Palau are for the closest year available.

Source: ADB (2011), ILO (2011), and DGBAS (2011).

Data in Table 1 show a nonlinear relationship between women's share of the labor force and income levels. Across Asia and the Pacific, women's share of the labor force is fairly high in the lower-income economies, drops noticeably in many middle-income countries, and then rises again in higher-income economies. For example, women's share of the labor force is relatively high, at close to 50%, in Nepal, Cambodia, the Lao PDR, Myanmar, Viet Nam, and Papua New Guinea (lower-income economies). Women constitute closer to 30%–40% of the labor force in many of the middle-income economies, and then this share rises back up to an average of 43% for the developed member economies (Australia, Japan, and New Zealand). All regions except for South Asia and Southeast Asia saw an average increase in women's representation in the labor force between 1990 and 2010.

The relationship between economic development and women's participation in the formal labor market exhibits a fairly predictable and well-documented relationship. In countries that still have relatively large agriculture sectors and an emphasis on household farm production, the female labor force participation rate is often quite high. In such economies, the distinction between paid work and home production is blurred, pushing up the number of women who are considered economically active. Women in these economies often play the primary role in collecting and managing water and firewood, and in developing and maintaining the land. When countries begin to industrialize, female labor force participation rates fall as the household farm model becomes less common and more women engage exclusively in nonmarket activities such as childcare and housework.

This drop in women's labor force participation as per capita income increases can thus be viewed as a substitution effect, in which production moves away from the household and small farms toward market-based activity, and as an income effect, in which women can afford to stay at home (Goldin 1994). In more advanced economies, the substitution effect outweighs the income effect, and female participation rates begin to rise again as growing numbers of women engage in market-based economic activity, often in combination with raising children. This trend in women's labor force participation rates as countries industrialize generates a U-shaped function that fits time-series and cross-sectional data for a number of countries at different stages of development.<sup>7</sup>

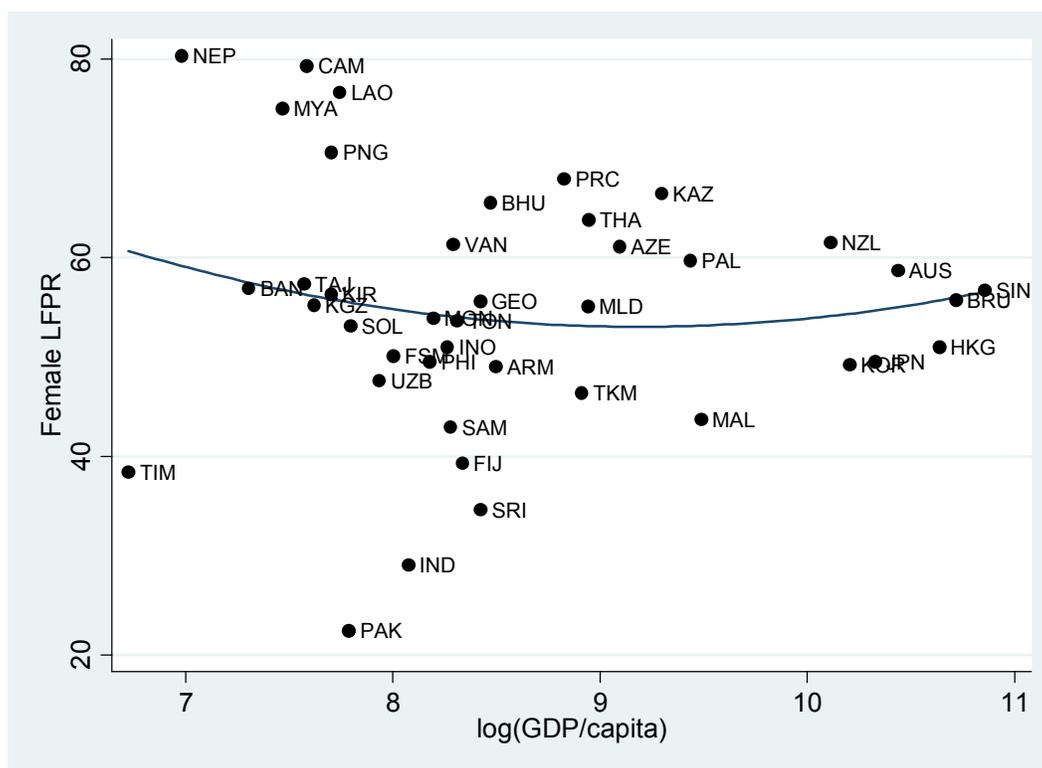
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<sup>7</sup> This U-shaped hypothesis for the relationship between women's labor force participation rates and national income is supported with evidence in Goldin (1994) and Mammen and Paxson (2000).

The pattern across countries in Asia and the Pacific in Panel A of Figure 1 is consistent with this U-shaped relationship between economic development and women's participation in the labor market. The figure shows a scatterplot of women's labor force participation rates across countries in Asia and the Pacific in 2010 against real per capita gross domestic product (GDP) in 2010 (adjusted by purchasing power parity [PPP] indices, in constant 2005 international dollars), fitted with a quadratic function. This quadratic function readily shows the U-shaped relationship between current female labor force participation rates and real GDP per capita across Asian economies.<sup>8</sup> This U-shaped relationship stands in contrast to the downward-sloping relationship for men, as depicted in Panel B. Some of the main explanations given for the decrease in men's labor force participation with increasing income across countries and over time include earlier retirement for men who are still of working age, as well as younger men in the working-age population staying in school longer.

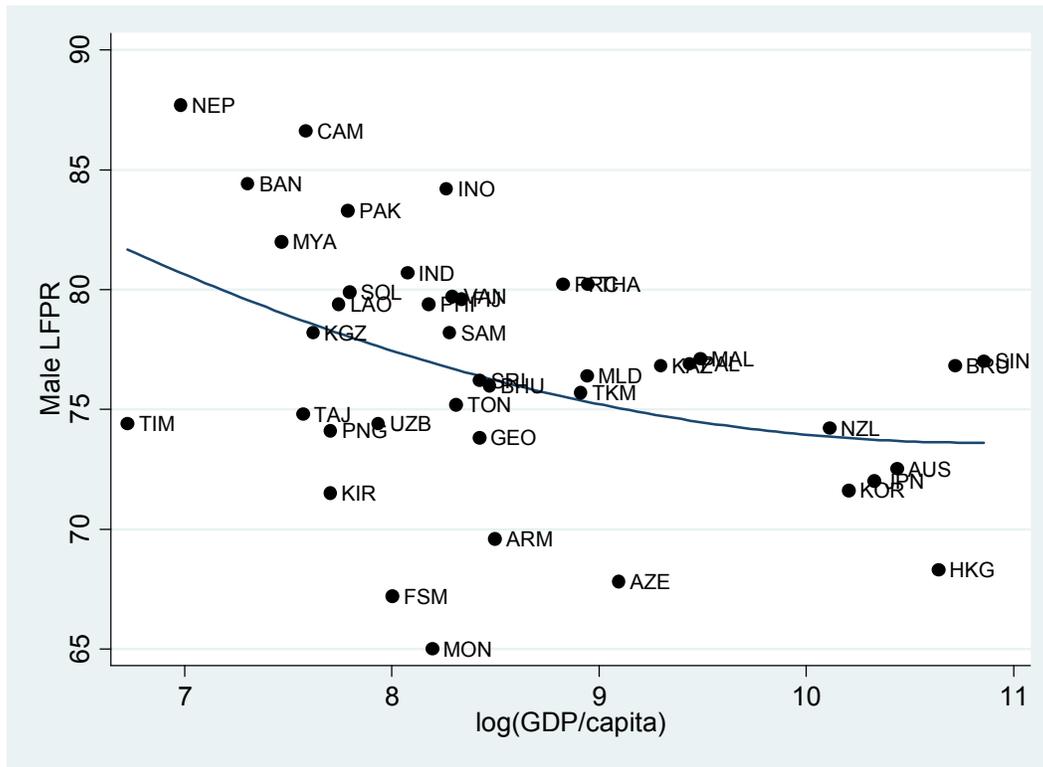
**Figure 1: Labor Force Participation Rates and Per Capita GDP (2005 PPP\$) in Asia, 2010**

**Panel A Women**



<sup>8</sup> Afghanistan, an extreme outlier due to conflict and the Taliban's oppression of women, had to be dropped from the scatter plot analysis in order to generate the U-shaped relationship. This U-shaped relationship is robust to using current gross national income per capita in US dollars instead of PPP-adjusted GDP per capita in constant 2005 US dollars.

Panel B Men



ARM = Armenia; AUS = Australia; AZE = Azerbaijan; BAN = Bangladesh; BHU = Bhutan; BRU = Brunei Darussalam; CAM = Cambodia; FSM = Federated States of Micronesia; GDP = gross domestic product; GEO = Georgia; HKG = Hong Kong, China; IND = India; INO = Indonesia; JPN = Japan; KAZ = Kazakhstan; KGZ = Kyrgyz Republic; KIR = Kiribati; KOR = Republic of Korea; LAO = Lao People's Democratic Republic; LFPR = labor force participation rate; MAL = Malaysia; MON = Mongolia; MYA = Myanmar; NZL = New Zealand; PAK = Pakistan; PAL = Palau; PHI = Philippines; PNG = Papua New Guinea; PPP = purchasing power parity; PRC = People's Republic of China; SAM = Samoa; SIN = Singapore; SOL = Solomon Islands; SRI = Sri Lanka; TAJ = Tajikistan; THA = Thailand; TIM = Timor-Leste; TKM = Turkmenistan; TON = Tonga; UZB = Uzbekistan; VAN = Vanuatu.

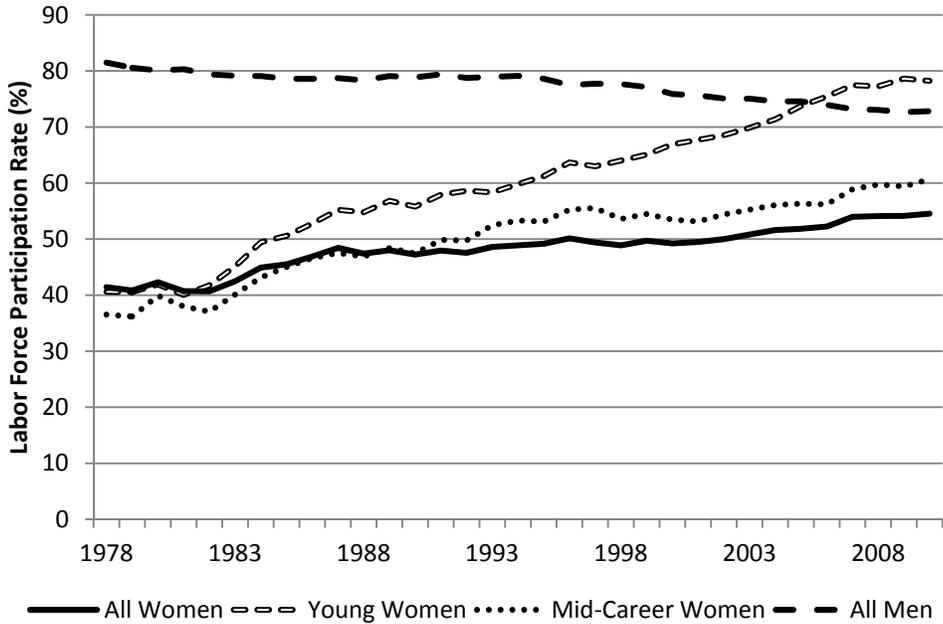
Note: All data are for 2010 or the closest year available. GDP per capita in 2005 PPP dollars.

Source: LFPR from ILO (2011) and per capita GDP from World Bank (2011a).

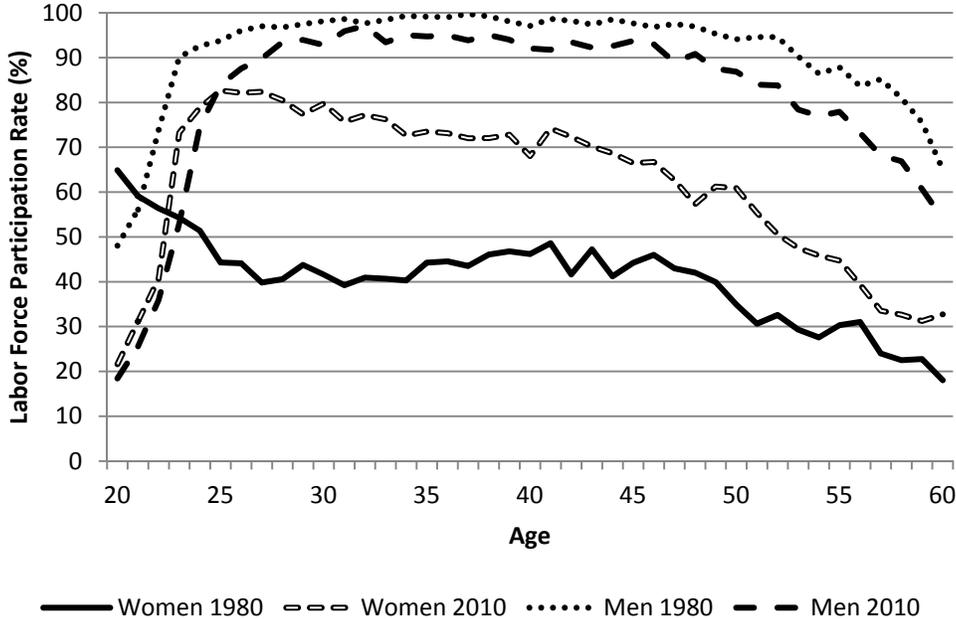
These arguments about gender differences in labor force participation rates are supported not only with cross-country data, but also time-series data for individual countries. For example, evidence on labor force participation rates constructed from the Manpower Utilization Survey for Taipei, China indicates a sharp increase in women's labor force participation rates from 1978 to 2010 (Figure 2, Panel A), while men have exhibited a steady decline in labor force participation. The labor force participation rate for all women in Taipei, China rose from 42% in 1978 to 55% in 2010. Strong increases in participation of young women drove the aggregate upward trend. In fact, by 2006, the labor force participation rate for young women (75.4%) even surpassed the average rate for men (73.9%). Additional increases for mid-career women further boosted the average increase for all women. In contrast, men's labor force participation remained fairly stagnant through the mid-1990s and then dropped steadily, from 79% in 1995 to 73% by 2010.

**Figure 2: Labor Force Participation Rates in Taipei,China, 1978–2010**

**Panel A Comparison of LFPRs for Women and Men, Annual Rates**



**Panel B Comparison of LFPRs for Women and Men by Age Group, 1980 and 2010**

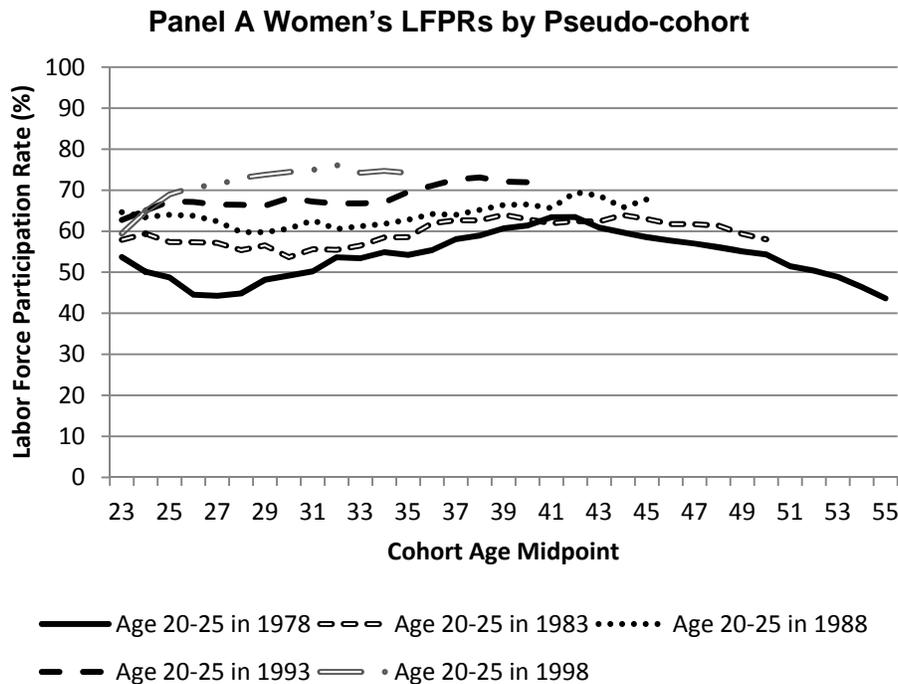


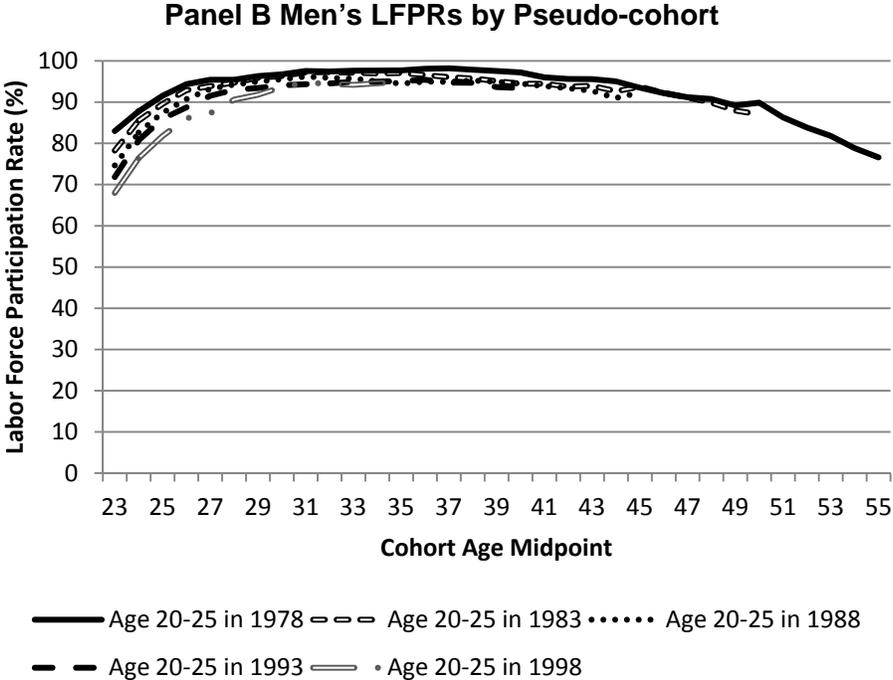
LFPR = labor force participation rate.

Source: Authors' calculations using data from Taipei,China's Manpower Utilization Surveys.

Changes in the age structure of labor force participation between 1980 and 2010 show a dramatic rise for women of all ages past the age of 22, with the largest gains occurring for women in their childbearing years (Figure 2, Panel B). Another noticeable change during this 30-year period is that while women in their 20s had declining labor force participation rates in 1980, this pattern reversed itself, and in 2010, women in their early to mid-20s were experiencing a surge in labor force participation. This general argument about the increase in women's labor force participation is also shown in a pseudo-cohort analysis tracking age cohorts over time as they age (Figure 3). In contrast, men at every age showed a drop in labor force participation between 1980 and 2010, with steeper drops at both tails of the age distribution. This conclusion also holds in the cohort analysis in Figure 3, which shows that the pseudo-cohorts follow roughly the same declining path. This pattern suggests that, for men at least, the pattern of the falling aggregate labor force participation rate is being driven by changes in the demographic structure.

**Figure 3: A pseudo-cohort Analysis of Labor Force Participation Rates in Taipei, China, 1978–2010**





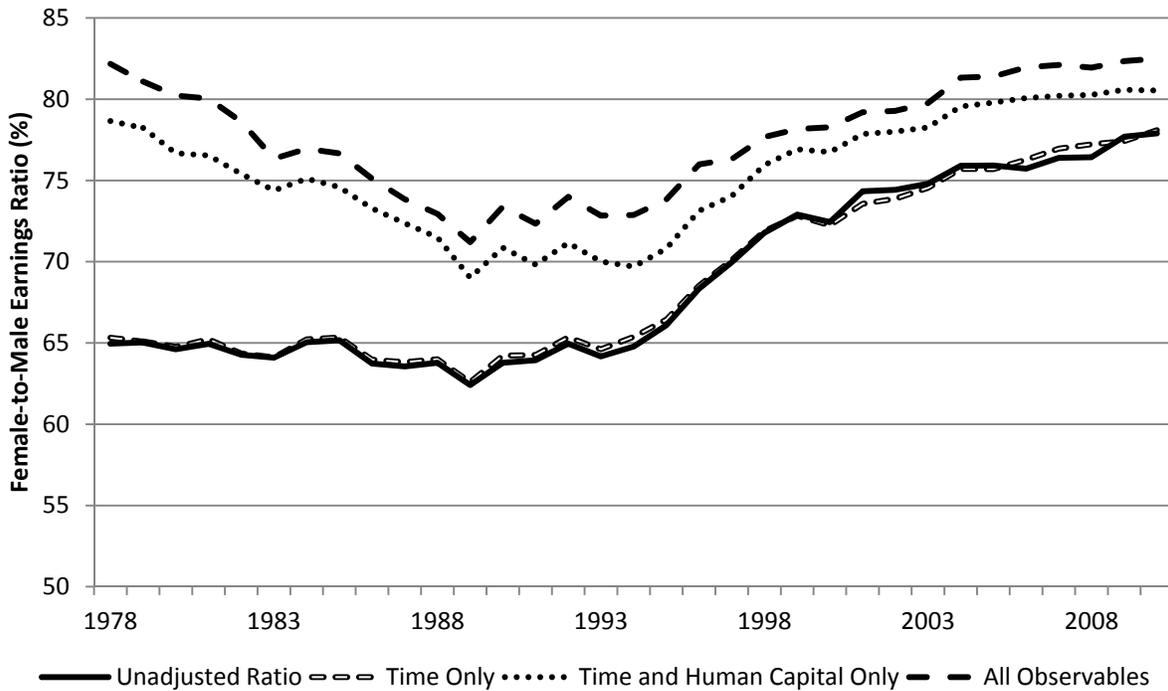
LFPR = labor force participation rate.

Source: Authors' calculations using data from Taipei,China's Manpower Utilization Surveys.

Despite the closing gap between women and men in labor force participation rates across Asia, disparities in the labor market remain, especially in terms of earnings and the types of jobs in which women and men are employed. There is extensive evidence of persistent earnings gaps across developing and industrialized countries around the world, including in Asia and the Pacific (World Bank 2011b). Gender pay gaps occur in both the public and private sectors and in the formal and informal sectors, where women disproportionately do piecework and casual work. A narrowing in the education gap between men and women in many countries has contributed to smaller gender pay gaps over time, but differentials remain substantial, especially in countries such as India and the Republic of Korea noted for long-term discrepancies.

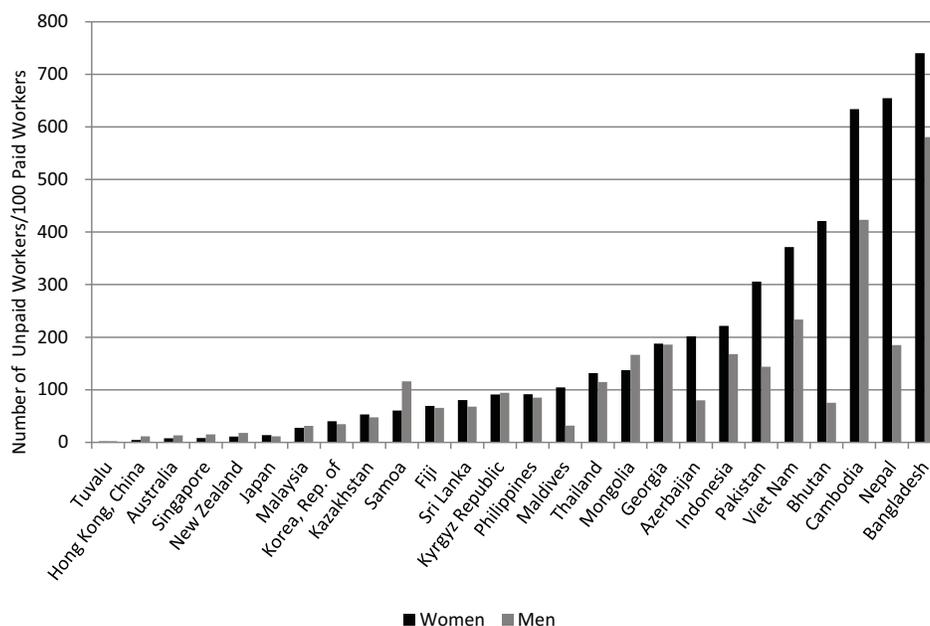
As an example of an Asian economy that has made substantial progress in narrowing the gender earnings ratio, Taipei,China has exhibited a steady increase in women's relative earnings since the mid-1990s. As shown in Figure 4, the unadjusted female/male wage ratio remained fairly flat from 1978 to 1994, at about 64%, and then rose steadily to 78% in 2010. A similar conclusion regarding the post-1994 relative gain applies when controlling for observed productivity characteristics for women and men, including their hours worked, education, potential experience, region, occupation, and industry. In fact, once observable characteristics are factored in, the earnings differential between men and women becomes quite small. However, the adjusted earnings ratios (with and without the controls for occupation and industry) showed a rather substantial decline in the earlier years as compared to the unadjusted ratio, suggesting that unobservable characteristics and potentially labor-market discrimination played an increasingly important role before the mid-1990s in preventing women from achieving earnings equality.

**Figure 4: Female-to-Male Earnings Ratio in Taipei,China, 1978–2010**



Source: Authors' calculations using data from Taipei,China's Manpower Utilization Surveys.

Moreover, in the majority of countries for which there are data, women hold a disproportionate number of unpaid jobs. As shown in Figure 6.5, which reports the number of own-account workers and contributing family workers per 100 wage and salaried workers by gender, in most countries women have proportionately more jobs involving own-account work and unpaid family work compared to men. Because own-account workers and contributing family workers are mostly engaged in informal jobs without access to social protection, they are considered more vulnerable to poverty and hardship relative to wage and salaried workers. The overrepresentation of women in these vulnerable types of jobs is especially pronounced in Bhutan, Cambodia, Nepal, and Pakistan. Hence, this figure indicates that vulnerability to unstable compensation and insufficient access to decent employment are still gendered phenomena.

**Figure 5: Own-account Workers and Unpaid Family Workers by Gender, 2007**

Note: Data represent the number of own-account workers and contributing family workers per 100 wage and salaried workers in 2007 or the most recently available year.

Source: ADB (2011).

#### IV. DRIVERS OF WOMEN'S LABOR FORCE PARTICIPATION: MICRO-LEVEL EVIDENCE

##### A. Data and Methodology

The analysis of micro-level drivers of women's labor force participation uses two different sources of data. The first source is repeated cross-sections of the Manpower Utilization Survey (MUS) from Taipei, China, an extremely rich household-survey database.<sup>9</sup> The surveys have collected on labor force status, monthly earnings, and weekly hours worked in addition to the demographic characteristics of the respondents every year since 1978. Our sample consists of civilian women of working age (15–65) from 1978 to 2010. The sample contains an average 24,975 observations for each year.

Sample statistics for the MUS indicate that the average age is 36, with close to 40% of the sample working in urban areas. Almost two-thirds of the sample is married, and close to 20% of the women in the sample have preschool-aged children. About 40% of the women, almost all of whom are older, have just a primary school education, while almost 10% of the women have a college education or more. About 15% of the sample claims school work as their primary activity, while another 40% claims housework as their primary activity. About 46% of the women are engaged in full-time or part-time employment.

<sup>9</sup> <http://eng.dgbas.gov.tw/mp.asp?mp=2>

The second source of data is the Demographic and Health Survey (DHS) data from nine Asian countries spanning the period 2005–2009. For each country, the DHS data provide a large nationally representative sample of women between the ages of 15 and 49 and the members of their households. Country selection for the case study's sample was determined by several criteria, including geographical coverage (South and Southeast Asia), the availability of a recent wave of DHS data (no earlier than 2005), and the availability of DHS Individual and Household Member Recodes. These selection criteria resulted in a nine-country sample covering 2005–2009: Bangladesh (2007), India (2005–2006), the Maldives (2009), Nepal (2006), and Pakistan (2006–2007) in South Asia; and Cambodia (2005), Indonesia (2007), the Philippines (2008), and Timor-Leste (2009) in Southeast Asia.<sup>10</sup> The sample for each country consists of women respondents between the ages of 15 and 49, with sample sizes ranging from 7,131 women in the Maldives to 124,385 in India.

In accordance with the way in which the DHS coded responses to the employment question, employment status is categorized as whether or not the woman is currently employed. Note that the main potential weakness in using the DHS to examine women's labor force participation is that employment may be measured with more error compared to a labor force survey, since the survey question simply asks the woman if she is currently employed. Moreover, if a woman was officially unemployed, she would be considered as not employed according to the DHS, while she would still be considered part of the labor force according to a labor force survey. Counteracting this potential weakness are various advantages that come with the DHS, including the ability to do comparable regressions across different countries as well as the extensive information on women's productivity characteristics, household composition, socioeconomic status, and household wealth that is not contained in most labor force surveys.

Sample means indicate that as many as 64%–71% of all women (in Cambodia and Nepal) reported that they were currently employed. In contrast, as few as 26%–32% of women (in Pakistan and Bangladesh) reported that they were currently employed, with the remaining countries falling in between these extremes. The low percentages of women currently employed in Bangladesh and Pakistan partly reflect long-standing social norms that place a heavier premium on men's capacity to generate earnings in the labor market as compared to women's capacity to generate an income. In contrast, the very high percentages of women who are currently employed in Cambodia and Nepal partly reflect the necessity of women's labor input to support the household in these low-income economies, together with less restrictive social norms, especially in Cambodia, regarding women's employment. Both countries have histories of civil war and violent conflict, which has contributed to pressure on women to support their households by becoming employed.

Other indicators related to women's employment include dummy variables for women working in agriculture and for the type of compensation (unpaid, cash only, in-kind only, or cash and in-kind). Among employed women, the region exhibits substantial variation across countries in terms of women's primary occupations. While almost 90% of women in Nepal hold agricultural jobs, just 4% of women in the Maldives work in agriculture, with the remainder of the countries dispersed fairly evenly across the distribution. Also among employed women, countries exhibit much variation in terms of the extent to which women work for pay. While the vast majority of women in Timor-Leste are unpaid workers (mostly in household enterprises), about three-quarters or more of women workers in Bangladesh, the Maldives, Pakistan, and the Philippines work for cash only. Among the relatively lower-income economies, Cambodia and

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<sup>10</sup> Access to all DHS data sets used in this case study comes from <http://www.measuredhs.com/>

Nepal have high percentages of women who work for in-kind reimbursement. The independent variables of the analysis include various individual-level characteristics, different dimensions of socioeconomic status, and household composition. Because the DHS data do not include information on income and wages, these direct measures of household economic status cannot be included. Rather, alternative measures based on household assets, amenities, and relative wealth are employed to represent household socioeconomic status.

The MUS data and the DHS samples for the nine Asian countries are used to estimate the likelihood of a woman engaging in employment, conditional on the full set of personal and household characteristics. The empirical strategy estimates a standard labor supply equation for women in each country of the following form:

$$y_i = a + bX_i + \theta_i \quad (1)$$

The dependent variable  $y_i$  is a dummy that takes on the value 1 if each woman,  $i$ , is employed, and 0 otherwise. The notation  $X_i$  is the set of individual and household characteristics that influence women's decisions to be employed, and  $\theta_i$  is a woman-specific idiosyncratic error term. Given the binary nature of the dependent variable, a probit model is used to estimate the labor supply function for each country, with probit coefficients converted into marginal probabilities following standard computations. Tolerance statistics are estimated to test for the presence of multicollinearity among the full set of independent variables.

## **B. Results Over Time Using the Manpower Utilization Surveys for Taipei,China**

Table 2 reports regression results for the drivers of women's employment decisions in Taipei,China from 1978 to 2010. Results are reported for a selected number of years for the sake of brevity, but other years are consistent with those shown in the table.

**Table 2: Women's Employment Determinants in Taipei,China:  
Marginal Probabilities and Standard Errors, 1978–2010**

	1978	1983	1988	1993	1998	2003	2010
<b>Educational attainment (reference: primary school and below)</b>							
Middle school	-0.028*	-0.028*	0.008	-0.044)**	(0.042)**	0.019	0.031
	(0.017)	(0.016)	(0.017)	(0.018)	(0.021)	(0.021)	(0.021)
High school	-0.087***	-0.100***	-0.056**	-0.050**	-0.023	0.022	0.045*
	(0.026)	(0.023)	(0.024)	(0.024)	(0.026)	(0.026)	(0.024)
Vocational technical	0.018	-0.021	0.022	0.009	0.059	0.115***	0.147***
	(0.057)	(0.041)	(0.035)	(0.035)	(0.038)	(0.037)	(0.038)
Vocational commerce	0.037	-0.001	0.038**	0.021	0.067***	0.080***	0.103***
	(0.023)	(0.018)	(0.019)	(0.019)	(0.022)	(0.022)	(0.022)
Vocational other	-0.112	-0.068	0.034	-0.001	0.098**	0.152***	0.152***
	(0.084)	(0.062)	(0.055)	(0.049)	(0.044)	(0.040)	(0.040)
Junior college technical	-0.132	-0.027	0.043	0.016	0.118***	0.164***	0.213***
	(0.091)	(0.063)	(0.051)	(0.044)	(0.042)	(0.038)	(0.041)
Junior college commerce	0.095*	-0.082**	0.018	0.015	0.109***	0.171***	0.138***
	(0.053)	(0.037)	(0.037)	(0.034)	(0.032)	(0.029)	(0.030)
Junior college other	0.009	-0.065	-0.030	0.026	0.078	0.081*	0.058
	(0.061)	(0.049)	(0.047)	(0.050)	(0.053)	(0.048)	(0.049)
College technical	0.046	-0.185**	-0.019	0.069	0.049	0.138***	0.259***
	(0.098)	(0.073)	(0.071)	(0.068)	(0.060)	(0.042)	(0.035)
College commerce	-0.013	-0.056	0.065	0.046	0.111***	0.126***	0.226***
	(0.068)	(0.058)	(0.052)	(0.050)	(0.042)	(0.033)	(0.027)
College other	0.086***	-0.023	-0.111***	0.023	0.130***	0.114***	0.193***
	(0.051)	(0.044)	(0.041)	(0.041)	(0.040)	(0.032)	(0.028)
Age	0.037***	0.042***	0.041***	0.041***	0.044***	0.045***	0.050***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Age <sup>2</sup> /100	-0.056***	-0.064***	-0.060***	-0.060***	-0.065***	-0.065***	-0.074***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
<b>Regional location (reference: North)</b>							
Central	0.129***	0.094***	0.019	0.061***	-0.018	0.009	0.033**
	(0.013)	(0.013)	(0.014)	(0.014)	(0.016)	(0.016)	(0.015)
South	0.095***	0.015	0.002	0.046***	-0.024	-0.026*	-0.037***
	(0.012)	(0.012)	(0.012)	(0.013)	(0.015)	(0.014)	(0.014)
East	0.274***	0.136***	0.150***	0.264***	0.052	0.080***	-0.016
	(0.026)	(0.028)	(0.030)	(0.027)	(0.032)	(0.031)	(0.029)
Lives in urban area	-0.070***	-0.016	-0.020*	0.049***	0.054***	0.048***	0.064***
	(0.011)	(0.011)	(0.012)	(0.012)	(0.014)	(0.013)	(0.013)
Major activity is school	-1.396***	-1.308***	-1.489***	-1.423***	-1.505***	-1.356***	-1.269***
	(0.027)	(0.024)	(0.028)	(0.026)	(0.031)	(0.027)	(0.027)
Major activity is housework	-1.044***	-1.188***	-1.261***	-1.321***	-1.460***	-1.463***	-1.452***
	(0.014)	(0.015)	(0.013)	(0.014)	(0.016)	(0.016)	(0.018)
Married	-0.019	0.115***	0.078***	0.115***	0.233***	0.246***	0.246***
	(0.017)	(0.018)	(0.018)	(0.018)	(0.019)	(0.017)	(0.015)
Has preschool child	-0.104***	-0.125***	-0.097***	-0.120***	-0.128***	-0.090***	-0.160***
	(0.014)	(0.014)	(0.015)	(0.017)	(0.020)	(0.022)	-(0.025)
Pseudo R <sup>2</sup>	0.576	0.649	0.709	0.735	0.799	0.776	0.736
Wald $\chi^2$	16,335***	21,515***	26,090***	26,338***	29,079***	27,714***	24,265***
Sample Size	20,875	24,308	26,595	25,856	26,269	25,777	23,938

Note: Standard errors (shown in parentheses) and significance levels are calculated from the marginal probabilities of a probit regression for each year. The notation \*\*\* is  $p < 0.01$ , \*\* is  $p < 0.05$ , \* is  $p < 0.10$ .

Source: Authors' calculations.

In general, women with more education are more likely to be employed compared to women with just a primary school education or less, although there are some exceptions. For example, by 2010, women with college educations in technical fields were 26% more likely to be employed compared to women with primary school and below, and this likelihood is just slightly lower for women with a college education in commercial and other fields. These probabilities for college-educated women to be employed have risen substantially since the late 1970s and early 1980s, when college-educated women were no more likely and possibly even less likely than women with little education to engage in employment. A similar pattern emerges for women with a vocational school and junior college education. Women with just a middle school or high school education, however, for most of the period have been less likely or just as likely to be employed compared to less educated women.

Other substantive predictors of women's employment decisions include her age; namely, as women become older, they are more likely to be engaged in employment. Not surprisingly, women who responded that housework and schoolwork are their primary activities are substantially less likely to engage in any kind of employment, not even part-time employment. In contrast, for most of the period, married women have shown a greater probability of engaging in employment compared to their single counterparts. This result contrasts noticeably with those below for the nine lower-income Asian countries, where married women are less likely to be employed. Finally, having at least one preschool aged child in the house serves as a major disincentive for employment. In 2010, women with a preschool aged child at home were 16% less likely to be employed compared to women with no young children. This disincentive to join the labor force when there is a young child at home has actually increased over time.

### **C. Cross-country Results Using DHS**

Table 3 reports regression results for individual and household-level drivers of women's employment decisions for the nine Asian countries in the sample. As shown in the table, household wealth is strongly associated with women's employment decisions, but the direction of this effect varies across countries. In Bangladesh, India, Indonesia, Nepal, Pakistan, and Timor-Leste, women from wealthier households are substantially less likely to be employed as compared to those from the lowest wealth households. This finding supports the assertion that in these six sample countries, economic necessity is pushing women from low-wealth households to engage in market-based work, so lower socioeconomic status appears to be an important push factor behind women's employment decisions. Note also that this effect becomes stronger (more negative) for higher wealth-quintile households.

**Table 3: Women's Employment Determinants in South Asia and Southeast Asia:  
Marginal Probabilities and Standard Errors, 2005–2009**

	BAN	CAM	IND	INO	MLD	NEP	PAK	PHI	TIM
<b>Women's characteristics</b>									
Age (linear)	0.004 <sup>***</sup> (0.001) <sub>...</sub>	0.009 <sup>***</sup> (0.001) <sub>...</sub>	0.008 <sup>***</sup> (0.000) <sub>...</sub>	0.010 <sup>***</sup> (0.001) <sub>...</sub>	0.006 <sup>***</sup> (0.001) <sub>...</sub>	0.011 <sup>***</sup> (0.001) <sub>...</sub>	0.003 <sup>***</sup> (0.001) <sub>...</sub>	0.016 <sup>***</sup> (0.001) <sub>...</sub>	0.013 <sup>***</sup> (0.001) <sub>...</sub>
Married	-0.192 <sup>***</sup> (0.024) <sub>...</sub>	-0.055 <sup>***</sup> (0.012) <sub>...</sub>	-0.140 <sup>***</sup> (0.006) <sub>...</sub>	-0.102 <sup>***</sup> (0.022) <sub>...</sub>	-0.156 <sup>***</sup> (0.027) <sub>...</sub>	-0.018 <sup>***</sup> (0.015) <sub>...</sub>	-0.138 <sup>***</sup> (0.030) <sub>...</sub>	-0.005 <sup>***</sup> (0.013) <sub>...</sub>	-0.044 <sup>***</sup> (0.014) <sub>...</sub>
<i>Educational attainment (reference: no schooling)</i>									
Primary school	-0.043 <sup>***</sup> (0.013) <sub>...</sub>	0.038 <sup>***</sup> (0.012) <sub>...</sub>	-0.066 <sup>***</sup> (0.006) <sub>...</sub>	-0.100 <sup>***</sup> (0.020) <sub>...</sub>	-0.026 <sup>***</sup> (0.021) <sub>...</sub>	0.041 <sup>**</sup> (0.016) <sub>...</sub>	-0.043 <sup>***</sup> (0.016) <sub>...</sub>	0.033 <sup>***</sup> (0.038) <sub>...</sub>	0.000 <sup>***</sup> (0.014) <sub>...</sub>
Secondary or higher	-0.071 <sup>***</sup> (0.016) <sub>...</sub>	-0.031 <sup>***</sup> (0.016) <sub>...</sub>	-0.132 <sup>***</sup> (0.006) <sub>...</sub>	-0.111 <sup>***</sup> (0.022) <sub>...</sub>	0.128 <sup>***</sup> (0.028) <sub>...</sub>	-0.037 <sup>***</sup> (0.021) <sub>...</sub>	0.068 <sup>***</sup> (0.019) <sub>...</sub>	0.015 <sup>***</sup> (0.038) <sub>...</sub>	-0.089 <sup>***</sup> (0.016) <sub>...</sub>
<i>Source of information</i>									
Reads newspaper	0.033 <sup>*</sup> (0.019) <sub>...</sub>	-0.009 <sup>***</sup> (0.012) <sub>...</sub>	0.017 <sup>***</sup> (0.006) <sub>...</sub>	0.013 <sup>***</sup> (0.011) <sub>...</sub>	0.099 <sup>***</sup> (0.014) <sub>...</sub>	0.009 <sup>***</sup> (0.018) <sub>...</sub>	.. (0.018) <sub>...</sub>	0.042 <sup>***</sup> (0.011) <sub>...</sub>	-0.002 <sup>***</sup> (0.014) <sub>...</sub>
Watches television	0.013 <sup>***</sup> (0.013) <sub>...</sub>	0.030 <sup>**</sup> (0.012) <sub>...</sub>	0.007 <sup>***</sup> (0.005) <sub>...</sub>	-0.021 <sup>***</sup> (0.018) <sub>...</sub>	-0.003 <sup>***</sup> (0.052) <sub>...</sub>	0.034 <sup>**</sup> (0.017) <sub>...</sub>	.. (0.017) <sub>...</sub>	0.005 <sup>***</sup> (0.021) <sub>...</sub>	0.059 <sup>***</sup> (0.014) <sub>...</sub>
Listens to radio	0.044 <sup>***</sup> (0.014) <sub>...</sub>	0.007 <sup>***</sup> (0.011) <sub>...</sub>	0.002 <sup>***</sup> (0.004) <sub>...</sub>	0.029 <sup>***</sup> (0.010) <sub>...</sub>	-0.006 <sup>***</sup> (0.022) <sub>...</sub>	0.123 <sup>***</sup> (0.022) <sub>...</sub>	.. (0.022) <sub>...</sub>	0.022 <sup>***</sup> (0.013) <sub>...</sub>	0.048 <sup>***</sup> (0.013) <sub>...</sub>
<b>Household economic characteristics</b>									
<i>Household wealth index (reference: 1st quintile)</i>									
2nd quintile	-0.021 <sup>***</sup> (0.017) <sub>...</sub>	0.001 <sup>***</sup> (0.015) <sub>...</sub>	-0.042 <sup>***</sup> (0.007) <sub>...</sub>	-0.017 <sup>***</sup> (0.015) <sub>...</sub>	-0.009 <sup>***</sup> (0.019) <sub>...</sub>	-0.130 <sup>***</sup> (0.024) <sub>...</sub>	-0.073 <sup>***</sup> (0.016) <sub>...</sub>	0.015 <sup>***</sup> (0.019) <sub>...</sub>	-0.050 <sup>***</sup> (0.016) <sub>...</sub>
3rd quintile	-0.102 <sup>***</sup> (0.017) <sub>...</sub>	0.029 <sup>***</sup> (0.015) <sub>...</sub>	-0.104 <sup>***</sup> (0.007) <sub>...</sub>	-0.028 <sup>***</sup> (0.016) <sub>...</sub>	-0.031 <sup>***</sup> (0.019) <sub>...</sub>	-0.209 <sup>***</sup> (0.026) <sub>...</sub>	-0.113 <sup>***</sup> (0.015) <sub>...</sub>	-0.007 <sup>***</sup> (0.021) <sub>...</sub>	-0.042 <sup>***</sup> (0.017) <sub>...</sub>
4th quintile	-0.120 <sup>***</sup> (0.020) <sub>...</sub>	0.034 <sup>**</sup> (0.017) <sub>...</sub>	-0.206 <sup>***</sup> (0.007) <sub>...</sub>	-0.063 <sup>***</sup> (0.018) <sub>...</sub>	0.032 <sup>***</sup> (0.026) <sub>...</sub>	-0.275 <sup>***</sup> (0.029) <sub>...</sub>	-0.186 <sup>***</sup> (0.014) <sub>...</sub>	0.038 <sup>***</sup> (0.022) <sub>...</sub>	-0.082 <sup>***</sup> (0.018) <sub>...</sub>
5th (richest) quintile	-0.216 <sup>***</sup> (0.020) <sub>...</sub>	-0.006 <sup>***</sup> (0.025) <sub>...</sub>	-0.294 <sup>***</sup> (0.007) <sub>...</sub>	-0.027 <sup>***</sup> (0.019) <sub>...</sub>	0.100 <sup>***</sup> (0.042) <sub>...</sub>	-0.439 <sup>***</sup> (0.030) <sub>...</sub>	-0.248 <sup>***</sup> (0.014) <sub>...</sub>	0.115 <sup>***</sup> (0.023) <sub>...</sub>	-0.050 <sup>***</sup> (0.025) <sub>...</sub>
Owens land	0.022 <sup>***</sup> (0.012) <sub>...</sub>	0.011 <sup>***</sup> (0.013) <sub>...</sub>	0.018 <sup>***</sup> (0.004) <sub>...</sub>	.. (0.013) <sub>...</sub>	.. (0.013) <sub>...</sub>	0.100 <sup>***</sup> (0.015) <sub>...</sub>	-0.019 <sup>***</sup> (0.012) <sub>...</sub>	.. (0.012) <sub>...</sub>	0.070 <sup>***</sup> (0.017) <sub>...</sub>
Has electricity	0.062 <sup>***</sup> (0.016) <sub>...</sub>	0.061 <sup>***</sup> (0.019) <sub>...</sub>	0.127 <sup>***</sup> (0.005) <sub>...</sub>	-0.042 <sup>***</sup> (0.015) <sub>...</sub>	0.068 <sup>***</sup> (0.059) <sub>...</sub>	0 (0.015) <sub>...</sub>	-0.014 <sup>***</sup> (0.018) <sub>...</sub>	-0.003 <sup>***</sup> (0.019) <sub>...</sub>	-0.069 <sup>***</sup> (0.015) <sub>...</sub>
Has access to safe water	-0.02 <sup>***</sup> (0.021) <sub>...</sub>	-0.050 <sup>***</sup> (0.011) <sub>...</sub>	0.079 <sup>***</sup> (0.005) <sub>...</sub>	-0.053 <sup>***</sup> (0.016) <sub>...</sub>	0.031 <sup>***</sup> (0.016) <sub>...</sub>	0.032 <sup>***</sup> (0.018) <sub>...</sub>	-0.045 <sup>***</sup> (0.021) <sub>...</sub>	-0.019 <sup>***</sup> (0.011) <sub>...</sub>	-0.057 <sup>***</sup> (0.015) <sub>...</sub>
<i>Geographical region (reference: rural)</i>									
Capital city	0.009 <sup>***</sup> (0.020) <sub>...</sub>	-0.027 <sup>***</sup> (0.022) <sub>...</sub>	-0.017 <sup>**</sup> (0.007) <sub>...</sub>	-0.101 <sup>***</sup> (0.018) <sub>...</sub>	-0.131 <sup>***</sup> (0.031) <sub>...</sub>	0.075 <sup>**</sup> (0.029) <sub>...</sub>	0.02 <sup>***</sup> (0.021) <sub>...</sub>	0.012 <sup>***</sup> (0.017) <sub>...</sub>	-0.063 <sup>***</sup> (0.022) <sub>...</sub>
Other urban area	0.051 <sup>***</sup> (0.016) <sub>...</sub>	-0.049 <sup>***</sup> (0.015) <sub>...</sub>	-0.063 <sup>***</sup> (0.006) <sub>...</sub>	-0.059 <sup>***</sup> (0.011) <sub>...</sub>	.. (0.011) <sub>...</sub>	-0.055 <sup>***</sup> (0.018) <sub>...</sub>	-0.029 <sup>***</sup> (0.016) <sub>...</sub>	0.027 <sup>***</sup> (0.012) <sub>...</sub>	-0.017 <sup>***</sup> (0.014) <sub>...</sub>

<b>Household composition</b>									
<i>Number of children (linear)</i>									
<5 yrs old	-0.047 <sup>***</sup>	-0.034 <sup>***</sup>	-0.037 <sup>***</sup>	-0.095 <sup>***</sup>	-0.029 <sup>***</sup>	-0.027 <sup>***</sup>	-0.014 <sup>***</sup>	-0.046 <sup>***</sup>	-0.018 <sup>***</sup>
	(0.007)	(0.007)	(0.003)	(0.007)	(0.009)	(0.007)	(0.005)	(0.006)	(0.006)
5–12 yrs old	0.010	0.003	0.009 <sup>***</sup>	-0.006	0.002	0.008 <sup>**</sup>	-0.002	0.005	-0.019 <sup>***</sup>
	(0.005)	(0.004)	(0.002)	(0.005)	(0.007)	(0.004)	(0.004)	(0.005)	(0.004)
13–17 yrs old	-0.029 <sup>***</sup>	-0.038 <sup>***</sup>	-0.022 <sup>***</sup>	-0.003	0.003	-0.016 <sup>**</sup>	-0.002	-0.031 <sup>***</sup>	-0.019 <sup>***</sup>
	(0.007)	(0.006)	(0.003)	(0.007)	(0.008)	(0.007)	(0.005)	(0.006)	(0.006)
Has 3 or more adults	-0.064 <sup>***</sup>	0.034 <sup>***</sup>	-0.034 <sup>***</sup>	-0.008	-0.026	0.003	-0.003	0.031 <sup>***</sup>	-0.003
	(0.012)	(0.010)	(0.004)	(0.009)	(0.019)	(0.013)	(0.012)	(0.011)	(0.011)
Female-headed household	0.005	-0.023	0.024 <sup>***</sup>	0.071 <sup>**</sup>	-0.009	-0.014	0.010	0.073 <sup>***</sup>	0.118 <sup>***</sup>
	(0.021)	(0.018)	(0.009)	(0.028)	(0.021)	(0.018)	(0.024)	(0.024)	(0.031)
Pseudo R <sup>2</sup>	0.099	0.04	0.092	0.057	0.032	0.160	0.060	0.091	0.087
Wald $\chi^2$	882 <sup>***</sup>	559 <sup>***</sup>	7,367 <sup>***</sup>	997 <sup>***</sup>	200 <sup>***</sup>	1,086 <sup>***</sup>	455 <sup>***</sup>	1,314 <sup>***</sup>	1,131 <sup>***</sup>
Sample Size	10,996	16,823	124,385	32,895	7,131	10,793	9,999	13,594	13,137

BAN = Bangladesh, CAM = Cambodia, IND = India, INO = Indonesia, MLD = Maldives, NEP = Nepal, PAK = Pakistan, PHI = Philippines, TIM = Timor-Leste, yrs = years.

Note: Weighted to national levels with weights provided by the Demographic and Health Survey. Clustered standard errors (shown in parentheses) and significance levels are calculated from the marginal probabilities of a probit regression for each country. The notation \*\*\* is  $p < 0.01$ , \*\* is  $p < 0.05$ , \* is  $p < 0.10$ . Regressions include the survey month to control for seasonality. The notation .. denotes that this question was not answered by respondents for that particular country; in the case of the Maldives, the variables other urban and capital city were combined.

Source: Authors' calculations.

In contrast, women from wealthier households are more likely to be employed as compared to women from the poorest households in Cambodia, the Maldives, and the Philippines. At least for the Maldives and the Philippines, this result is likely due to the fact that these two economies are more developed compared to the rest of the sample, and low socioeconomic status among households does not play as strong a role in pushing women to be employed. For Cambodia, the most likely reason that the household wealth variables are not exhibiting the expected negative coefficients is that other variables related to income are capturing the income effect. In particular, women with more education, with access to safe water, and in urban areas—each indicators of higher socioeconomic status—are all substantially less likely to be employed as compared to their counterparts with less education, with no access to safe water, and in rural households.

This argument that education is capturing socioeconomic status effects also holds for most of the other lower-income Asian economies in the sample, with more education being associated with lower probabilities of employment in six of the nine economies. In particular, women with at least a secondary school education are substantially less likely to be employed as compared to women with no schooling in Bangladesh, Cambodia, India, Indonesia, Nepal, and Timor-Leste. In contrast, women in the Maldives and Pakistan who have secondary schooling or beyond are more likely to be employed. For the Maldives, the most likely explanation again is that the country is more economically developed compared to the rest of the sample, and low socioeconomic status, as measured in this case by lack of schooling, does not play as strong a role in pushing women to be employed. For Pakistan, the result could be specific to Pakistani social norms of discouraging higher education for most women, so those women who do have more schooling are pulled into the labor market.

Estimation results also indicate that being married and having young children serve as strong drivers of women's employment decisions. In every country, married women are less likely to be employed as compared to their single counterparts, and this relationship is statistically significant and fairly large in seven of the nine economies (the exceptions being Nepal and the Philippines). Moreover, across all countries, having very young children reduces women's employment. In particular, having one additional child in the home under the age of 5 reduces the probability that a woman is currently employed by anywhere from 1% in Pakistan to 10% in Indonesia, with an average of about a 4% decline across the region. However, that effect tends to fade as children get older, and in three of the nine countries, women with children between the ages of 5 and 12 are significantly more likely to be more employed. In contrast, having older children between the ages of 13 and 17 again reduces the likelihood of a woman being employed. One potential explanation is a longer-term intermittency effect, as women with older children who have stayed out of the labor market for a while experience a decline in skills. Another explanation is that these older children are contributing to household income and reducing the economic need for their mothers to engage in the labor market. Overall, these results point to the importance of policy actions that support women's roles as caregivers of young children at the same time that they are employed in market-based activities.

## V. CONCLUSIONS AND POLICY IMPLICATIONS

A better understanding of drivers of women's labor force participation can contribute to more effective policy responses that will promote women's status in the labor market, which in turn can lead to long-term benefits for individuals and for society as a whole. Comprehensive and up-to-date statistical evidence on the determinants of women's employment is particularly important given the heavy weight in international policy dialogues that is placed on generating employment opportunities for women. As argued in this paper, GDP growth has the potential to minimize the wedges and facilitate progress toward gender equality. Yet there is a strong rationale for policy reforms that alleviate the constraints that women face, especially those related to heavy time burdens devoted to unpaid work, regulations that favor men, inadequate public infrastructure, lack of credit, insufficient access to agricultural inputs, discriminatory practices in the labor market, and traditional social norms.

Results from this study support the implementation and enforcement of a number of policy interventions. Of particular importance is a transformative approach that boosts the remunerative value and security of women's jobs, improves the compatibility of women's market work with childcare, and promotes enabling policies that so that women in the informal sector become less marginalized and more integrated in the labor market. Such enabling policies include providing women with greater access to credit, strengthening women's property rights, promoting skills development for women beyond gender stereotypes, improving the productivity of women farmers, and implementing gender-responsive social protection measures. The bottom line of most of these reforms and programs is that effective targeting can help tight budgets go a long way in improving societal well-being.

**Boosting the value and security of women's jobs.** Improving the pecuniary returns that women receive for their jobs in the form of higher wages, greater job security, and improved terms of employment will have a direct bearing on their employment decisions. Policy measures to achieve these goals are most commonly embedded in national labor standards that cover formal sector workers. In an effort to eliminate discrimination in employment and pay against women, most countries have adopted policies that promote equal treatment in the workplace. In particular, "equal pay for equal work" requires employers to provide equal pay for workers performing the same job with equal efficiency, regardless of gender. Moreover, governments have tackled occupational segregation through equal opportunity provisions that prohibit sex-based discrimination in hiring, training, promotion, and firing. Enforcing antidiscrimination measures will provide women with more rewarding career opportunities, and it will also promote essential workforce training for meeting macroeconomic growth objectives.

Measures such as safe workplace conditions, overtime pay, and paid benefits, although potentially costly to implement, promote lower turnover rates, improve well-being for workers, and contribute to extended firm-specific tenure. These measures need to be provided to a broader range of workers by removing exemptions, promoting awareness of benefit availability, and strengthening enforcement efforts. That said, a high proportion of women work in low-paid or unpaid jobs that remain uncovered by national labor standards. In addition to enforcing labor standards in paid jobs that are supposedly covered by national labor laws, a related policy goal is to create more wage-employment and productive self-employment opportunities for women through policy reforms that incentivize opportunities to switch from low-paid work in marginally productive activities to more remunerative work in productive activities.

**Improving compatibility of market work with childcare.** Crucial to bolstering women's progress toward equality in the formal sector, maternity leave benefits allow women to keep their position with a particular employer while they take time off to care for a newborn.<sup>11</sup> In terms of labor market impacts, studies on maternity and parental leaves have generally found that these policies have a positive impact on women's employment, although not always statistically significant. For example, Zveglic and Rodgers (2003) found that enforcement of maternity leave legislation in Taipei, China led to a 2.5-percentage-point increase in women's employment. This positive employment effect is interpreted as an indication that women value the financial benefits of paid leave and the opportunity to return to their previous employers after childbirth. Previous studies have generally found maternity benefits to have a negative wage effect, reflecting variations in such factors as mandated versus voluntary provision by firms, financing by national insurance, maternity leave duration, and the wage compensation rate. If public funding covers beneficiary payments, then wages will not decline as much, if at all. In addition to supporting women's efforts to remain and advance in the labor market, maternity benefits can contribute to the health of an infant by encouraging women in the labor force to spend more time at home following childbirth.<sup>12</sup>

In addition, public support of out-of-home childcare services helps to relieve the time and budgetary constraints that women experience. Public support of childcare also helps women to compete on a relatively more level playing field in the labor market, given that women's greater work burdens at home make it more difficult for them to maintain labor force attachment *levels* equal to those of men. Public support for early education programs also directly benefits those children who otherwise could be receiving inferior-quality care from alternative providers, as well as children who otherwise might have to accompany their mothers to work in unhealthy environments. Public support of childcare services also promotes higher levels of educational attainment among older children, especially girls, who otherwise might be pulled out of school to care for younger siblings.

**Improving women's access to credit.** A substantial proportion of women engage in self-employment in order to support themselves and their families. Self-employment commonly takes the form of a household enterprise, and women-operated household enterprises are often smaller in scale than those operated by men. Women's self-employment can entail an unstable income stream and less job security, and these jobs usually remain uncovered by formal labor regulations. An effective policy intervention in mitigating these risks and promoting more productive employment is the provision of small-scale loans that are mediated via rural banking reforms and microfinance initiatives. Such initiatives target individuals who have difficulty obtaining conventional loans through commercial banks, often due to a lack of collateral, and are left to rely on informal-sector money lenders and other expensive sources of credit. Providing women with increased access to credit serves as a viable means of incentivizing the shift from low-paid work in marginally productive activities to more remunerative work in productive activities. Both microfinance and rural banks have aided in reducing poverty by providing a diverse range of financial services to the poor and the disenfranchised. Moreover, McKenzie's (2009) assessment of microenterprises and finance in developing countries concluded that additional policies designed to improve business training, provide business-development services, and facilitate shifts into more profitable sectors were most useful in enhancing the impact of credit on small business ventures.

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<sup>11</sup> Parental leave policies have similar terms, except that new fathers are also eligible to use the benefits. In most countries, however, parental leave is predominantly taken up by women.

<sup>12</sup> For cross-country evidence, see Ferrarini and Norström (2010).

In addition to better supporting viable household business ventures, dissemination of know-how on accounting and management practices would also serve as useful mechanisms for increasing the productivity of household businesses and for increasing their ability to generate employment. Public and nongovernment institutions can play key roles by providing subsidized loans that facilitate the purchase of new profit-enhancing technologies and by offering assistance for the marketing and sale of products created by women-run businesses. A good model is the Women Workers Employment and Entrepreneurship Development (WEED) program in the Philippines, which provides entrepreneurship training, skills development, and credit assistance to underemployed and home-based women workers, as well as women in the informal sector (Manasan 2009). Programs such as WEED can facilitate movement from low-paid work to work that is more remunerative.

**Strengthening women's property rights.** Improving women's control over assets such as land can also have powerful consequences for women's autonomy and the well-being of their families. The availability of collateral facilitates additional borrowing, which in turn gives households the capital required to finance home-based self-employment work. Such work is often the province of women in Asian developing-country households. In addition to facilitating greater access to credit, land rights can also affect households' economic decision making through increased security of land tenure. For example, Viet Nam's 1993 Land Law created a land market by giving households the power to exchange, lease, and mortgage their land use rights. Households increased their labor supply in nonfarm work as a consequence of the additional land rights, and because household borrowing did not exhibit much variation after the legal change, this outcome is attributed mainly to the additional security of land tenure rather than increased access to credit (Do and Iyer 2008).

In principle, women's land rights are positively associated with women's autonomy and empowerment, as embodied in their decision-making power, security, authority within the household, and respect from other family members. For example, women's land and home ownership are associated with a lower incidence of domestic violence in India (Panda and Agarwal 2005). Closely related, in rural Bangladesh, the value of assets that women bring into a marriage and the value of their current assets both have a positive impact on the portion of household expenditures allocated toward children's clothing and education (Quisumbing and de la Brière 2000). This effect is mediated primarily through the value of non-land assets, including livestock and durable goods. Finally, because additional income in the hands of women has been shown to have larger effects on expenditures on children as compared to male-controlled resources, women's land rights have the potential to affect child well-being. For example, Allendorf (2007) found that children in Nepal are less likely to be severely underweight if their mothers own land. This relationship is attributed primarily to the additional income and resources that women's ownership of land brings, rather than the empowering effect of land ownership.

**Promoting skills development beyond gender stereotypes.**<sup>13</sup> Gender-sensitive policies to promote skills development focus on both meeting current economic needs and building the capacity for meeting future development needs. Relevant policies focus on identifying and tackling gender norms that lead to the clustering of girls in what are considered appropriate fields. This clustering in turn constrains their employability. Such policies also include initiating mentoring programs in which women who have successfully broken the glass ceiling serve as mentors to younger women with less seniority in the labor market. Promoting skills development also includes improving the quality of education for both boys and girls.

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<sup>13</sup> This policy discussion draws on recommendations in ILO and ADB (2011).

Although many Asian countries have successfully closed gender gaps in educational attainment, there are still imbalances in the quality of the education that young people are getting.

Moreover, depending on the types of activities in which women choose to engage, public support of vocational training can also be useful in preparing women for better-paying jobs. Closely related is the need for training programs built around women's labor market intermittency due to childcare to help promote their employability upon reentry into the workforce. Women may also face more barriers than men when they first enter the labor market, thus providing a rationale for policies that facilitate the transition of women from school to their first job. Finally, to better reach women in the informal sector and in remote areas, specially designed training programs, such as those that are community-based or geographically mobile, can provide training opportunities to women who otherwise remain unreached by standard education and training initiatives.

**Improving productivity of women farmers.** Transformative policies supporting women's employment must also pay close attention to the needs of women farmers, especially given the relatively greater dependence of women in the poorest Asian economies on earning their livelihoods from agriculture. Most broadly, technological progress and investment in agriculture will help promote greater diversification and agricultural productivity. However, these and more targeted reforms need to address women's relatively limited access to assets, information, and training compared to their male counterparts.

A potential gain from more land titles and formal recognition of property rights for women is improved productivity of women farmers, with greater access to formal credit, extension services, *and* subsidized inputs acting as key channels. Greater access to these inputs in turn will help to lower women's cultivation costs and bring them closer to those of men, who often enjoy more state protection. Additional proposed reforms include integrated programs that enable women to group together and collectively buy land, as well as training in environmentally-sound farming techniques. Specialized agricultural extension services that cater to small-scale farms will also help to reach more women, as will greater policy focus on nonfarm activities in rural areas conducted by small enterprises, such as cooperatives and other community-based organizations.

**Implementing gender-responsive social protection measures.** Asian governments have paid relatively limited attention to gendered vulnerabilities in their social protection policies (ILO and ADB 2011). Improvements in social protection that address gendered concerns include the establishment of a social floor consisting of universal health care access, income security for all children and the elderly, and social assistance to people living in poverty so as to save them from living in destitution. Of particular importance are social protection policies that support retired women and widows. Closely related are measures that extend the coverage of social protection to workers in the informal sector. Possible measures include promoting new micro-insurance and area-based schemes, and encouraging tax-based social benefits. Examples of such measures include India's Unorganized Sector Workers Social Security Bill 2005 and the more recent National Social Security Fund for informal sector workers. Strengthening the enforcement of occupational safety and health provisions and extending their reach into the informal sector will also go a long way toward reaching vulnerable female workers. More broadly, interventions that address gendered vulnerabilities need to be more transformative in that they promote economic and social equity and eliminate exclusion by creating more balanced power relations between women and men.

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### **Inclusive Growth and Gender Inequality in Asia's Labor Markets**

Economic necessity is a key factor driving women to join in market-based employment in Asia's low-income countries. But married women's role in the household, especially caring for young children, reduces the likelihood of their labor market participation. These results point to the importance of policies that support women's roles as caregivers while they engage in market-based employment.

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