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ABSTRACT

What Drives Female Labor Force Participation? Comparable Micro-Level Evidence from Eight Developing and Emerging Economies*

We investigate the micro-level determinants of labor force participation of urban married women in eight low- and middle-income economies: Bolivia, Brazil, India, Indonesia, Jordan, South Africa, Tanzania, and Vietnam. In order to understand what drives changes and differences in participation rates since the early 2000s, we build a unified empirical framework that allows for comparative analyses across time and space. We find that the coefficients of women's characteristics differ substantially across countries, and this explains most of the between-country differences in participation rates. In particular, the relationship between a woman's education and her participation in the labor force varies from being positive and linear (Brazil and South Africa) to being U- or J-shaped (India, Jordan, and Indonesia), or a mixture of both (Bolivia, Vietnam, and Tanzania). Overall, the economic, social, and institutional constraints that shape women's labor force participation remain largely country-specific. Nonetheless, rising education levels and declining fertility consistently increased participation rates, while rising household incomes contributed negatively in relatively poorer countries, suggesting that a substantial share of women work out of economic necessity.

JEL Classification: J20, J16, I25, O15

Keywords: female labor force participation, gender, labor markets, development

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1 Introduction

Worldwide, the current labor force participation rate for women (age 15+) stands at 49 percent, compared to a participation rate of 76 percent for men (ILO, 2017). In the developing world, recent progress in closing this gender gap has been disappointing. In the past two decades, female labor force participation (FLFP, henceforth) rates have increased only modestly, on average, though there is considerable heterogeneity across countries and regions. Female participation rates are lowest in the Middle East and North Africa and in South Asia. South Asia also performed worst in terms of trends, with a declining share of women in the labor force. In contrast, female participation rates increased substantially in Latin America and the Caribbean.

The heterogeneity in female participation rates is observed against a background of rising female education, declining fertility, and robust economic growth in almost all developing countries. Women in developing countries have been accumulating skills at an unprecedented pace, while declining fertility reduced the burdens of childrearing and domestic work. Combined with economic growth, one would expect more educated and less time constrained women to enter an expanding labor market. Even if long held gender norms on women working outside the home fail to adjust as quickly, rising opportunity costs in foregone earnings should eventually boost women's participation rates. But this expectation did not materialize everywhere.

In this paper, we use comparable microdata from eight low and middle-income economies—Bolivia, Brazil, India, Indonesia, Jordan, South Africa, Tanzania, and Vietnam—to analyze how women's individual and household characteristics are associated with FLFP and what are the key commonalities and differences across countries. The period covered is 2000–2014. We further ask which factors drive FLFP changes over time *within* countries, and which factors account for differences in FLFP rates *between* countries.

A large literature studies FLFP in the developing world (see Klasen, 2018, for a review). At the macro level, the feminization-U hypothesis posits that, at low income levels, FLFP declines with economic development but, at some point, as countries get richer, the relationship turns positive (Boserup, 1970; Goldin, 1990, 1995). However, Gaddis and Klasen (2014) find only weak empirical evidence in support of this hypothesis in a large panel of countries. Instead, countries' idiosyncratic factors explain most of the worldwide variation in FLFP. Similarly, there is no evidence, at the country level, that closing the gender gap in education reduces the gender gap in labor force participation (Ganguli *et al.*, 2014).[1] Studying 101 countries over a long period of time, Aaronson *et al.* (2017) find

[1]Ganguli *et al.* (2014) analyze census data from 40 countries. At the micro level, the authors show that if the education gender gap, the marriage gap (LFP gap between married and single women), and the motherhood gap (LFP gap between mothers and childless women) were to close everywhere, a large unexplained gender gap in participation rates would still remain for most countries. However, Ganguli *et al.* (2014) assume that education and FLFP are linearly related. As we will show in this paper, the

large negative effects of fertility on mothers' labor supply, but only for sufficiently rich countries. At low levels of income, however, the effect of fertility is either small or zero.[2]

In work closely related to ours, Gasparini and Marchionni (2015) analyze microdata from 18 Latin American countries to investigate changes in FLFP between 1992 and 2012. They conclude that increased education, reduced marriage and fertility, and structural change towards more female-intensive activities contributed significantly to rising female participation throughout this period. However, these factors cannot account for the slowdown in the growth of female labor supply since the 2000s, which the authors link to the decade's strong economic growth. By improving overall conditions, economic growth "may have reduced the urgency of vulnerable women [rural, low educated, with children and low-earnings spouses] to take low quality jobs" (Gasparini and Marchionni, 2015, p. 13).

Several other papers investigate recent trends in FLFP for single countries. Assaad *et al.* (2014) offer a demand-side explanation for stagnating female participation rates in Jordan since 2000. As public sector hiring tightened since the adjustment policies of the 1980s, so have women's labor market opportunities; the reason being that women are disproportionately employed in education and health activities.[3] In Vietnam, very high FLFP is typically explained by the country's socialist legacy[4], and, to a smaller extent, by excess male mortality during the Vietnam War (Kreibaum and Klasen, 2015). For South Africa, Ntuli and Wittenberg (2013) decompose the increase in the participation rate of black women from 1995 to 2004. They find that changing returns to women's labor market characteristics account for most of the FLFP increase. Klasen and Pieters (2015) ask why FLFP stagnated in India since the late 1980s and show that rising incomes and male education levels reduced married women's labor supply. Rising female education, on the other hand, contributed less than expected due to a U-shaped relationship between a woman's education and her labor force participation. They also point at the lack of employment growth in manufacturing and white-collar services as a factor obstructing women's entry into the labor force.[5] The correlates of FLFP in Indonesia resemble those in India, including a U-shaped education-participation relationship (Schaner and Das, 2016).

shape of the education-participation relationship is nonlinear in some countries.

[2]Aaronson *et al.* (2017) instrument fertility with twin birth (Rosenzweig and Wolpin, 1980) and sibling sex composition (Angrist and Evans, 1998). Using infertility shocks as a different source of exogenous variation for 26 developing countries, Agüero and Marks (2011) find no effect of fertility on mothers' labor force participation. Priebe (2010) argues that, in poor settings, child costs push women into the labor market; as fertility declines, this type of distress-driven FLFP falls. The author shows causal evidence of this mechanism operating in Indonesia.

[3]In the Jordanian context, jobs in public education and health are among the few deemed socially appropriate for married women.

[4]See Ganguli *et al.* (2014, p. 184) and Klasen (2018, p. 15) for further evidence.

[5]Since then, similar analyses were conducted for Bangladesh (Rahman and Islam, 2013; Mahmud and Bidisha, 2016) and Sri Lanka (Seneviratne, 2017), but since the FLFP series for Bangladesh suffer from severe data inconsistencies (Klasen, 2018, p. 4), results should be taken with caution.

In this paper, we draw on labor force and household surveys covering roughly the period 2000–2014. The population of interest consists of prime age (25–54) urban married women.[6] The final dataset contains nearly 800,000 women from 32 surveys across eight countries. We estimate country- and year-specific determinants of FLFP using a unified empirical framework based on Klasen and Pieters (2015). The covariates capture two groups of supply-side factors: *women's own characteristics*—education, age, ethnicity or religion— and *family circumstances*—household income, education of the household head, presence of a man with salaried employment (to capture income security), and number of children aged 0–4 and 5–14 in the household. Our estimates are best understood as reduced form correlates. We do not model own wage effects, due to the well-known lack of robustness of current identification strategies (e.g., Klasen and Pieters, 2015)[7], but capture labor demand conditions by region fixed effects. Using the estimates from the FLFP models, we first decompose changes in participation rates over time *within* countries, and then decompose differences in participation rates *between* countries.

Our approach has several advantages. We have richer data than in typical macro-level cross-country analyses, allowing us to study heterogeneous effects across space and time in much detail. In addition, the unified empirical framework allows us to draw direct comparisons between countries and over time. In that sense, we contribute to a diverse collection of country case studies whose different methodologies and populations of interest preclude systematic comparisons. By establishing FLFP correlates within a unified empirical framework, over large samples and several periods, our study provides global stylized facts on the impact and relative importance of what are considered key determinants of FLFP.

We first analyze the country- and year-specific correlates of labor force participation, producing three key findings. First, there is no universal relationship between a woman's educational attainment and her likelihood of being in the labor force. Instead, we find two types of patterns: (i) a strong positive, linear relationship in the two richest countries—Brazil and South Africa; (ii) a U- or J-shaped relationship in India, Indonesia, and Jordan, where, relative to that of the lowest educated women, the participation probability does not change or even *decreases* at intermediate education levels (typically, secondary schooling), and then *increases* substantially at higher attainment levels. In Bolivia, Tanzania, and Vietnam, the education-participation relationship combines features from both stylized patterns.

Second, fertility penalizes women's participation everywhere, but the effect is stronger

[6]Our definition of currently married couples includes cohabitation, i.e., those living together as husband and wive even if not formally married.

[7]Blundell and Macurdy (1999) review the standard neoclassical model of labor supply, its extensions, and econometric applications. Blundell *et al.* (2007) discuss in detail identification and estimation of labor supply models.

in richer countries. The number of young children (ages 0–4) correlates negatively with labor force participation in all countries, but the number of older children (ages 5–14) only correlates negatively with participation in the four richest countries: Indonesia, Jordan, South Africa, and Brazil. These findings are consistent with causal evidence on fertility effects (e.g., Aaronson *et al.*, 2017).

Third, we find that in the two richest countries (Brazil and South Africa) households' economic conditions—captured by household income, education of the household head, and presence of a man with salaried employment—do not correlate with FLFP. The negative income effect shrinks over time (in absolute term), disappearing by 2014 in both countries. This finding is in line with evidence of plummeting income effects on married women's labor supply in the US (Blau and Kahn, 2007; Heim, 2007). In the remaining countries, especially India, Indonesia, and Bolivia, higher household income and household head education are still strongly negatively related to FLFP.

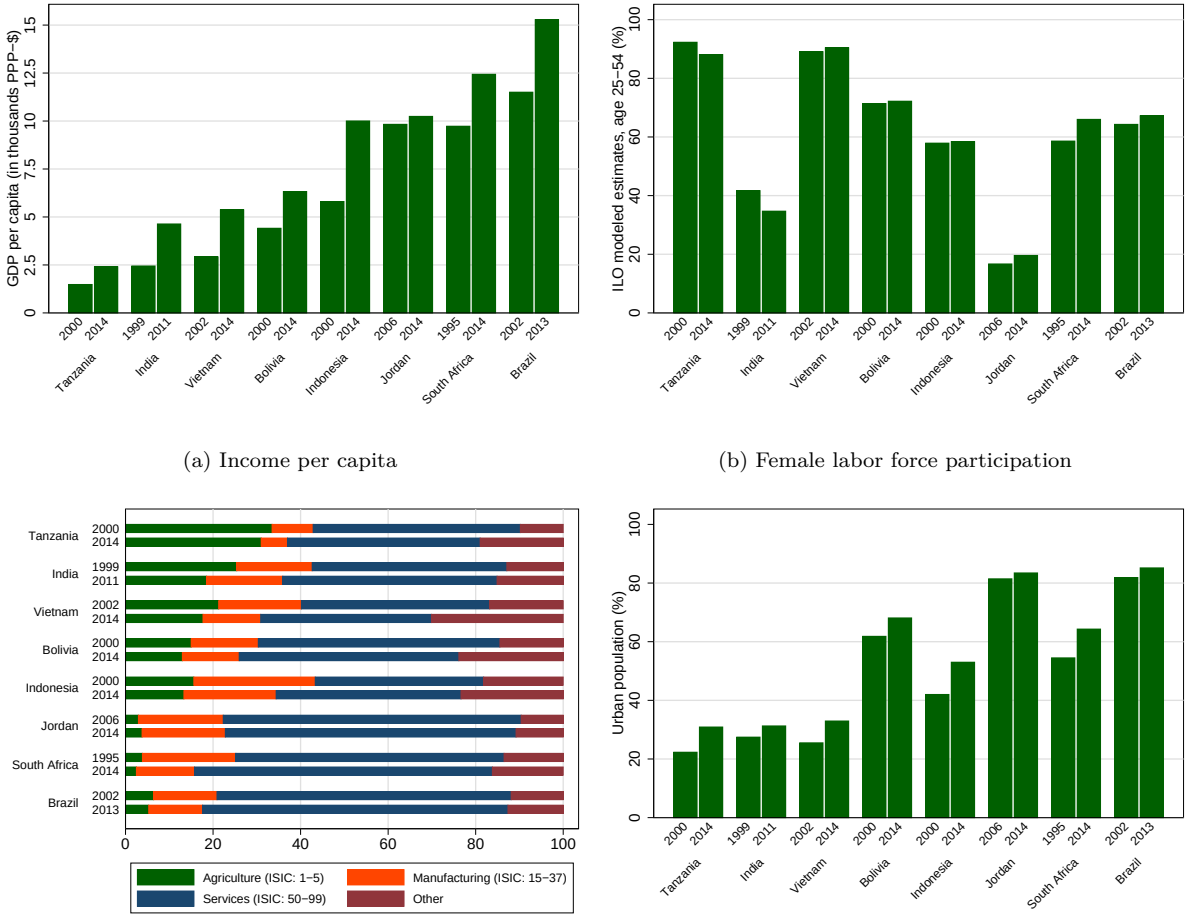
When decomposing trends in FLFP, we find that rising female education and falling fertility contributed to increases in participation everywhere. Yet, the magnitude of these contributions differs substantially across countries, mainly reflecting differences in the participation returns to education and the effect of children. In all countries but the richest three (Jordan, South Africa, and Brazil), these positive contributions were offset by the negative effect of rising household income. The strength of this negative income effect suggests that, in poorer countries, a substantial share of women work out of economic necessity, leaving the labor force as soon as it becomes affordable. Lastly, we find, for several countries, a relatively strong (negative or positive) contribution from factors that are not explained by our model and reflect instead changes in coefficients and unobservables. The sign and size of this unexplained contribution does not appear to relate to the country's income level, or the observed level or change in FLFP rates.

In the final part of our analysis, we decompose FLFP differences *between* countries. We find that differences in covariates cannot explain gaps in participation rates between countries. Instead, the returns to covariates and unobservables account for the bulk of FLFP variation, both around 2000 and 2014. Thus, economic, social, and institutional constraints that shape women's labor force participation are still largely country-specific.

This article proceeds as follows. Section 2 presents the data, descriptive statistics, and the empirical model. Section 3 shows the estimation results. In section 4, we decompose labor force participation changes over time and between countries. Section 5 concludes.

2 Data and Empirical Model

In this section we first describe our data sources and then present descriptive statistics for the main variables in our analysis in section 2.2. We discuss our empirical model in



(a) Income per capita

(b) Female labor force participation

(c) Value added (% of GDP) by sector

(d) Urbanization rate

Figure 1: Selected country indicators for the first and last years in our dataset

Notes: Sources are ILOSTAT and World Development Indicators. Countries are sorted by income per capita.

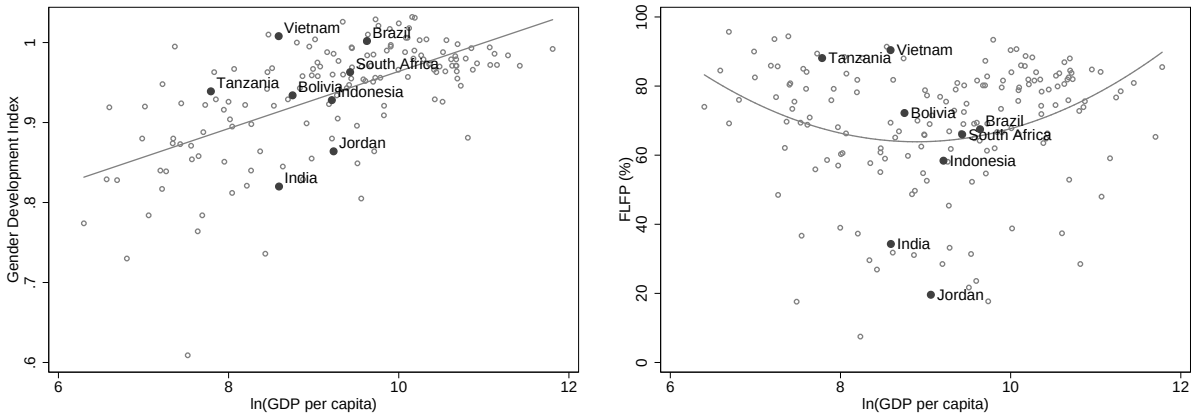
section 2.3.

2.1 Data

We select eight non-OECD countries with available good-quality large-scale household surveys allowing us to derive (most of) the variables used in Klasen and Pieters (2015). We purposefully choose a diverse group of countries: two upper middle income countries—Brazil and South Africa—, five lower middle income countries—Bolivia, India, Indonesia, Jordan, and Vietnam—, and one low income country—Tanzania. These countries cover a wide range of geographies, per capita incomes, FLFP rates, economic structures, and urbanization rates (Figure 1).[8]

When compared to the world, India and Jordan have less gender equality and lower

[8]Figure 1 shows data for the first and last year available for each country in our dataset. We obtain similar patterns if we plot data in 2000 and 2014 for all countries.



(a) Gender equality

(b) Female labor force participation

Figure 2: Selected gender indicators with respect to per capita income in 2014

Notes: Sources are UNDP's Human Development Report 2016 [Panel (a)] and ILOSTAT [Panel (b)]. Panel (a)—Linear fit of the two variables shown. 154 countries included. Panel (b)—Quadratic fit of the two variables shown. 174 countries included. FLFP, for ages 25–54, is a ILO modeled estimate. GDP per capita is PPP-adjusted at 2011 international $.

FLFP than predicted by their income levels (Figure 2). In contrast, Tanzania and Vietnam have more gender equality and higher FLFP than predicted by income alone. For the remaining countries (Bolivia, Brazil, Indonesia, and South Africa), their relative position in the world income distribution predicts well the levels of gender equality and FLFP.

The data cover roughly the past one-and-a-half decades, from the early 2000s to the mid-2010s, with the exception of Jordan, whose available time-span is shorter: 2006–2014. For South Africa, we also include 1995 in some of our analyses, to cover the entire post-*apartheid* era.

At the macroeconomic level, 2000–2014 was a period of sustained economic growth. For the eight countries, GDP per capita grew, on average, 3.2 percent per year. India and Vietnam were the best performers, with average annual growth rates of 5.3 and 5.1 percent. South Africa grew the slowest: 1.6 percent per year.[9] In general, our survey-years are representative of this macroeconomic period. Of 32 surveys, only two took place during recessions: Brazil, 2009, and Jordan, 2010.

We only consider urban households for two reasons.[10] First, the analysis requires individual earnings which are difficult to measure in rural areas, given the importance of smallholder agriculture. Non-marketed agricultural output must be valued in monetary

[9]Note that South Africa's GDP per capita grew much faster between 1995 and 2014, which is the period shown in Figure 1.

[10]For Jordan we consider both urban and rural areas because information on urban status is not available from the 2008 and 2014 surveys. In any case, more than 80 percent of Jordan's population lives in urban areas, in the period considered, according to data from the World Bank's World Development Indicators.

terms, but the necessary detailed price data is often unavailable.[11] Moreover, whenever several household members farm the same plots, or agricultural income is aggregated at the household level, it is unavoidable to impute income for each individual. In urban areas, measurement error or missing data are less severe.

Second, in settings dominated by agriculture, where many women contribute to household farming, household surveys are more likely to underreport female work. The extent of underreporting likely depends on survey methodology, which varies across countries (and sometimes within countries over time).[12] Focusing on urban areas, therefore, improves the comparability of labor force measurements across space and time.

The dataset includes nearly 800,000 urban married women of age 25–54. Table A1 lists the surveys, years, and sample sizes. In Appendix A.1, we describe each data source in detail, explaining how variables were constructed and harmonized across surveys.

2.2 Descriptives

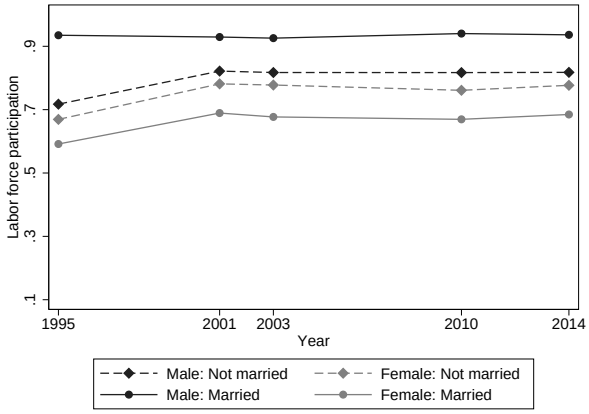
Labor force participation rates, by gender and marital status, have evolved differently across countries (Figure 3). Participation rates of urban married women are very high, above 80 percent, in Tanzania and Vietnam. They have fallen over time in Tanzania, remaining stable in Vietnam. Brazil, Bolivia, and South Africa follow with participation rates of 65–70 percent in 2013–14. Bolivia experienced minor fluctuations since 2000, while participation rates have increased over time in Brazil and South Africa. In the latter country, many married women entered the labor market immediately after the end of *apartheid*, between 1995 and 2001. Indonesia had the largest increase in the participation rate of married women: from 39 percent in 2000 to 53 percent in 2014. In Jordan and India, in contrast, less than 20 percent of married women participated in the labor force in 2014. In addition, trends have been disappointing: sluggish gains in Jordan—from 12 to 15 percent between 2006 and 2014[13]—and complete stagnation in India—18 percent in both 1999 and 2011.

Over time, the trend in participation rates is similar for currently married and not currently married women, but the former have a lower level of participation (except in Vietnam). Married men, in contrast, have extremely high participation rates in all

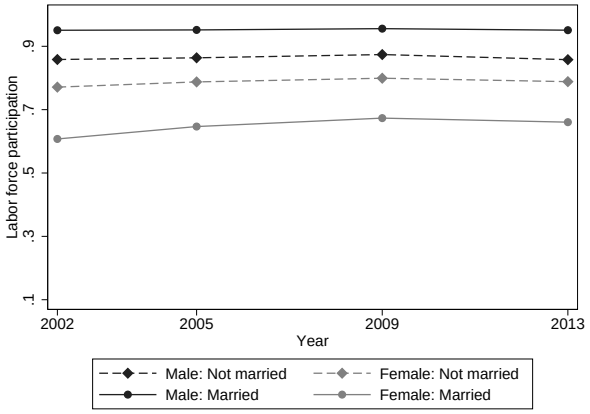
[11] For example, in its 2000 and 2006 rounds, Tanzania's Integrated Labor Force Survey only recorded agricultural income in urban areas. Other well-known practical complications are unmeasured product variety and quality.

[12] For example, in South Africa, the Labor Force Survey (LFS 2001–2007) is better at capturing informal casual employment than the previous October Household Survey (OHS 1995–1999) (Yu, 2007). The number of employment categories in the survey questionnaire increased from three in the OHS to eight in the LFS.

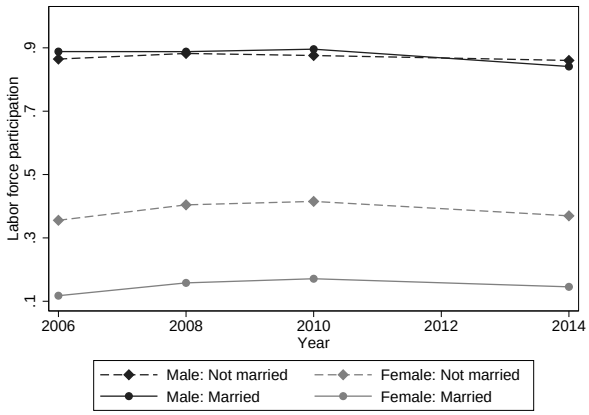
[13] Assaad *et al.* (2014) argue that even this 3 percentage point gain is illusory, resulting instead from the change in sampling frame and stratification of the Employment and Unemployment Survey in 2007. They show that FLFP rates (all women, ages 15+) were stagnant around 12 percent in 2000–2006, jumped to 15 in the first quarter of 2007, and remained stagnant thereafter (Assaad *et al.*, 2014, Figure 1).



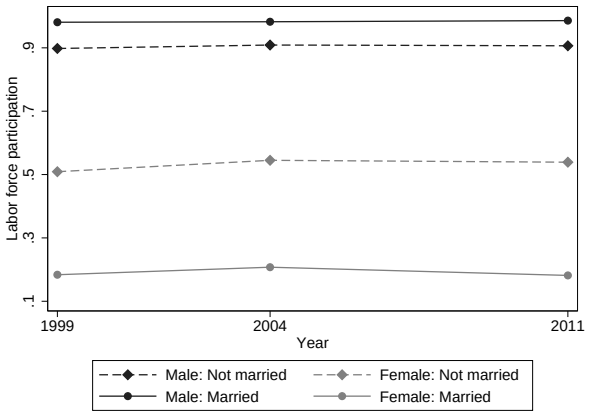
(a) South Africa



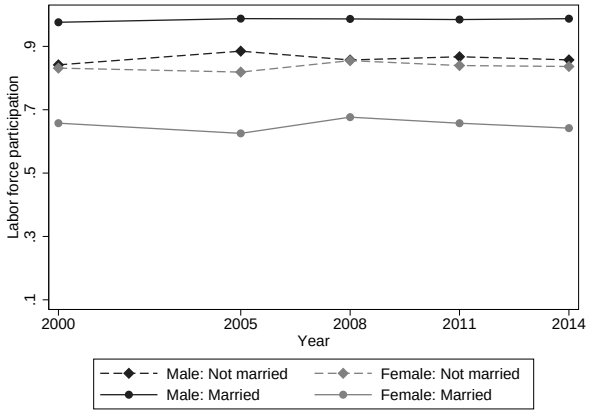
(b) Brazil



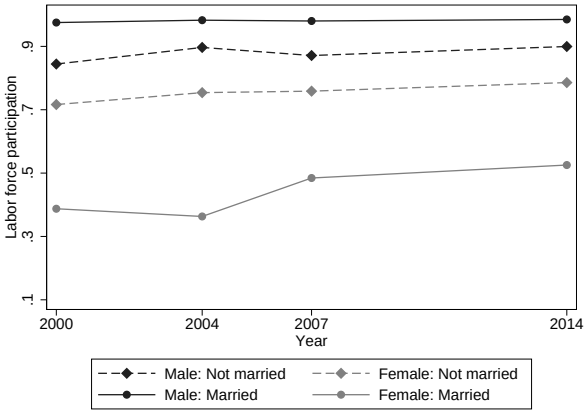
(c) Jordan



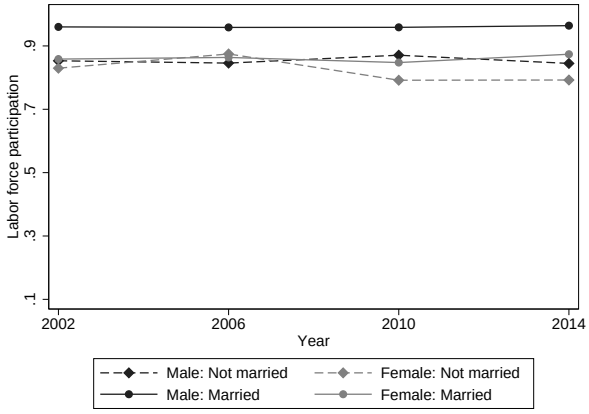
(d) India



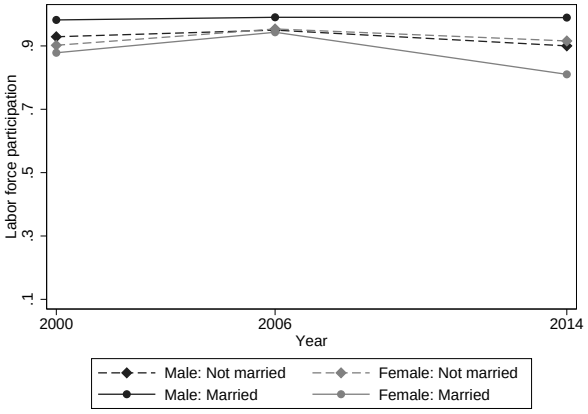
(e) Bolivia



(f) Indonesia



(g) Vietnam



(h) Tanzania

Figure 3: Labor force participation by gender and marital status

Notes: See Table A1 for sources. Urban only, age 25–54; except urban *and* rural in Jordan. Common Y-axis for all subfigures.

countries and years, exceeding 90 percent in most cases.

Women's education levels have been rising in all countries (Figure 4). The share of married women with completed secondary schooling or some tertiary education grew, while the share of women with less than primary schooling decreased substantially. Progress was strongest in Brazil and South Africa, and weakest in Jordan.

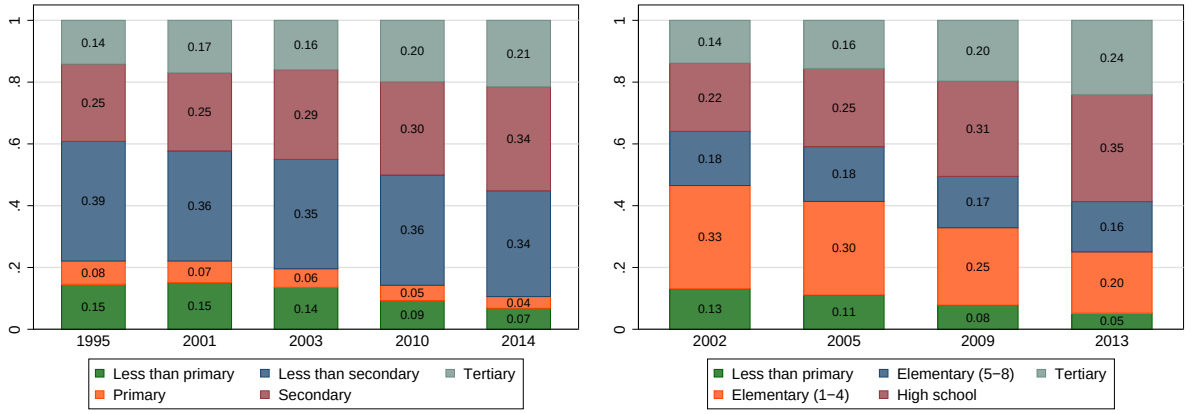
The relationship between education and labor force participation differs across countries (Figure 5). In Brazil and South Africa, more educated women have higher participation rates; this relationship is strong, close to linear, and stable over time. In Bolivia, Vietnam, and Tanzania, the positive association between education and participation is much flatter and less stable over time. In Jordan, India, and Indonesia, the relationship between the two variables is U-shaped, as was reported for India by Klasen and Pieters (2015): relative to women with the lowest education level, average participation rates are lower for women with intermediate education, increasing somewhat for secondary school graduates and substantially for women with tertiary education. We return to the education-FLFP relationship in the discussion of our estimation results, which confirm striking differences across countries.

The average number of children in a married woman's household reflects distinct fertility and co-residence patterns across countries (Figure 6). Jordan and Tanzania show the highest number of children, both ages 0–4 and 5–14, per household; Brazil and Vietnam have the lowest.[14] Overall, most countries experienced a decline in the number of children per household over time.

In all countries, working married women are concentrated in a few industries. Most highly educated women work in white-collar services, in particular, public administration, education, and health; the majority of less educated women work in other services, in particular, wholesale and retail trade (Figure A1). In urban Tanzania, agriculture remains the most important activity for less educated women. Construction and mining employ very few married women in all countries.

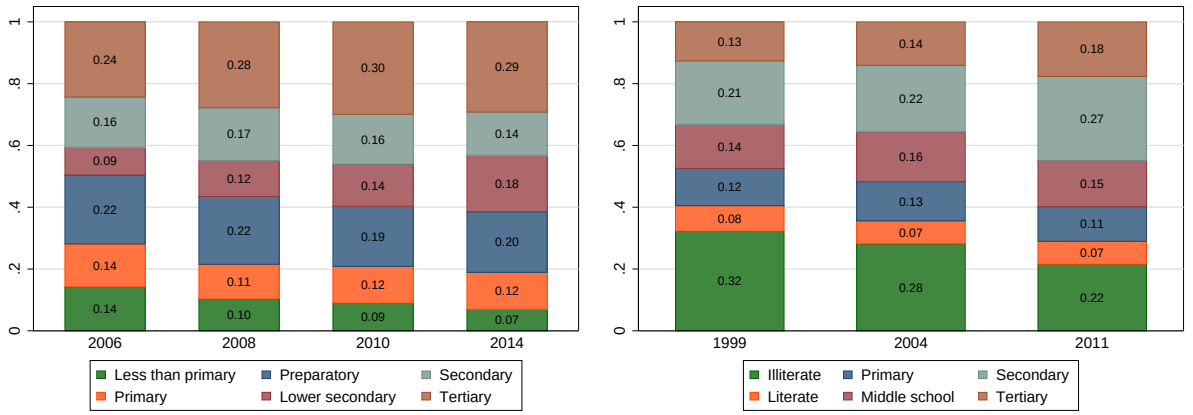
Based on these descriptive statistics, we can draw several hypotheses. The different patterns we observe in terms of the education-participation relationship imply that rising education levels will have very different impacts on women's participation rates across countries. In some countries, particularly those with a strong U-shaped relationship, the impact may be limited or even negative. On the other hand, declining fertility is likely to contribute to higher participation rates everywhere, though this depends on the extent to which the presence of children is a barrier to women's participation in the different countries and how this changed over time. The distribution of female workers across industries suggests that changes in the sectoral structure of employment could have important bearings on women's likelihood of entering the labor force. While the

[14]The figure for Jordan is inflated by including rural areas.



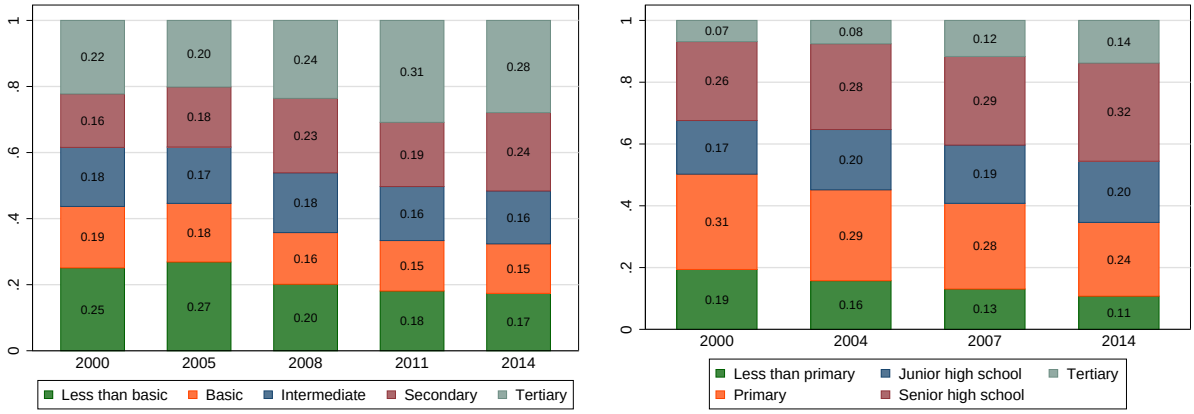
(a) South Africa

(b) Brazil



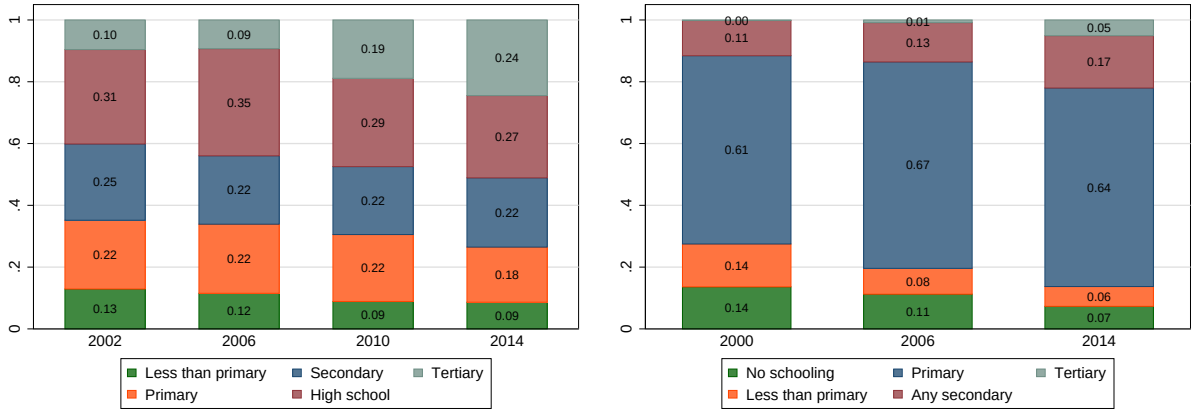
(c) Jordan

(d) India



(e) Bolivia

(f) Indonesia

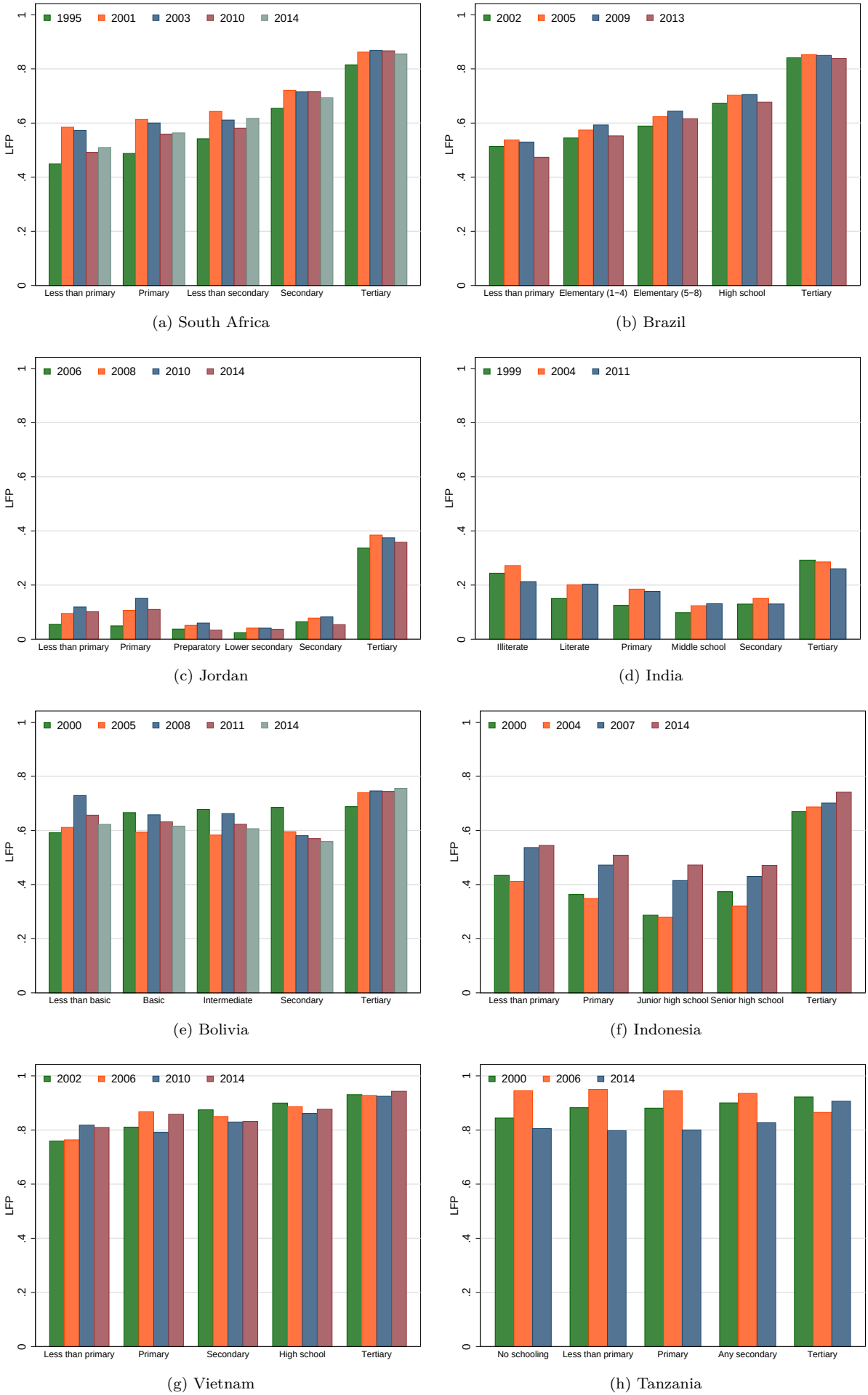


(g) Vietnam

(h) Tanzania

Figure 4: Distribution of educational attainment over time

Notes: See Table A1 for sources. Urban married women, age 25–54; except urban *and* rural in Jordan. Common Y-axis for all subfigures.



(a) South Africa

(b) Brazil

(c) Jordan

(d) India

(e) Bolivia

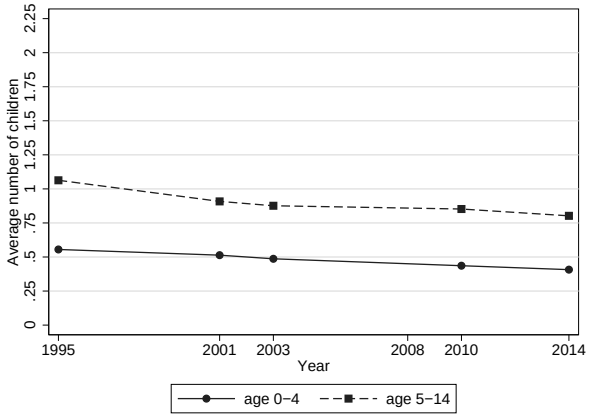
(f) Indonesia

(g) Vietnam

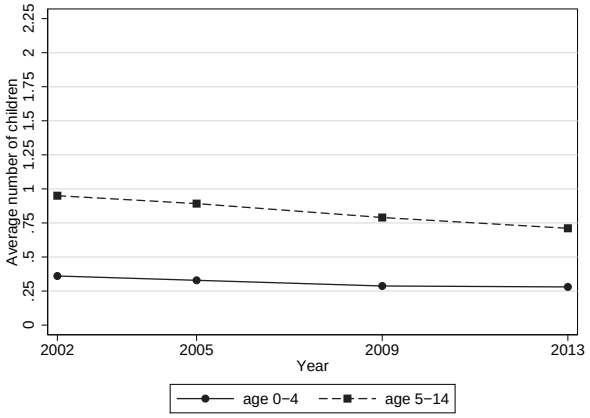
(h) Tanzania

Figure 5: FLFP by education level

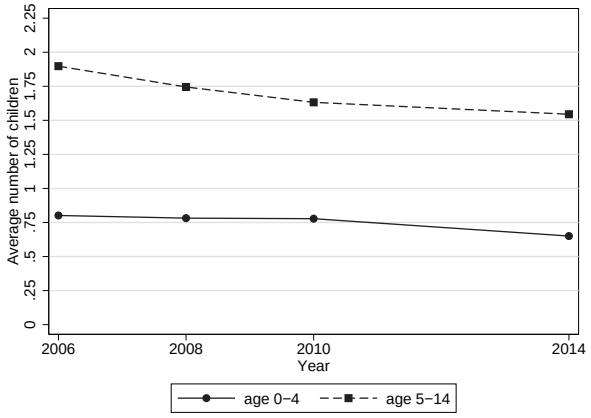
Notes: See Table A1 for sources. Urban married women, age 25–54; except urban *and* rural in Jordan. Common Y-axis for all subfigures.



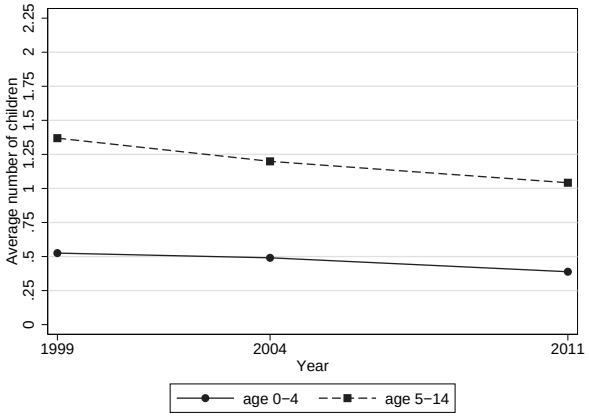
(a) South Africa



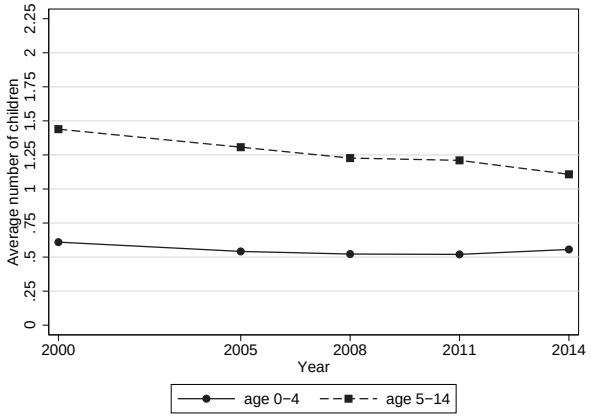
(b) Brazil



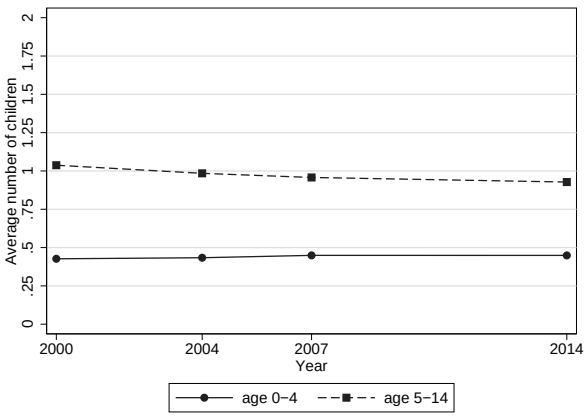
(c) Jordan



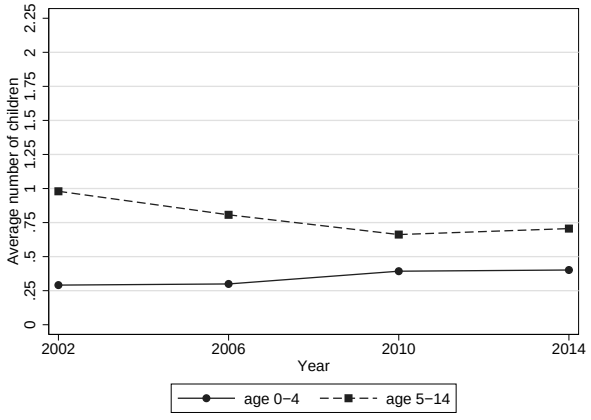
(d) India



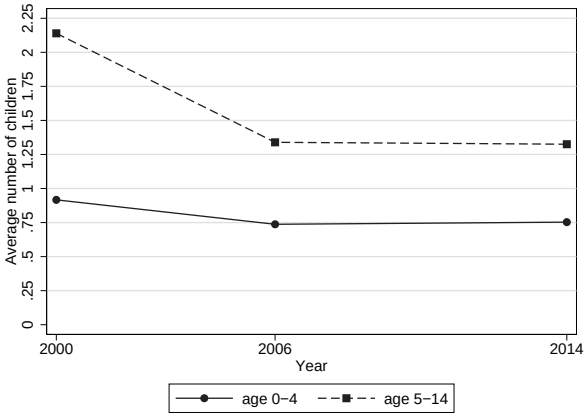
(e) Bolivia



(f) Indonesia



(g) Vietnam



(h) Tanzania

Figure 6: Average number of children in a urban married woman's household

Notes: See Table A1 for sources. Urban married women, age 25–54; except urban *and* rural in Jordan. Common Y-axis for all subfigures.

descriptive patterns are quite similar across countries, the structure of growth may differ and could potentially explain differences in trends in participation rates. Finally, aggregate income growth has two potentially counteracting impacts: rising unearned income and rising earnings. As discussed below, we do not analyze the effect of women's own expected earnings, which will to some extent be captured by the effects of education. Increases in unearned income are likely to have a negative impact on participation rates in all countries, and here our interest mainly lies in the extent of this force.

2.3 Modeling female labor force participation

The empirical analysis follows the probit model of Klasen and Pieters (2015) for married women, ages 25–54, living in urban areas:

$$P(LFP_{ict} = 1) = \Phi\left(\alpha_{ct} + \sum_{E} \beta_{ct}^{E} D_{ict}^{E} + \mathbf{X_{ict}}\gamma_{\mathbf{ct}} + \delta_{rct}\right), \tag{1}$$

where LFP is the labor force participation status of woman i in country c and year t, and $\Phi(.)$ is the standard normal CDF.[15] As indicated by the coefficients' subscripts, we estimate a separate probit model for each country-year pair. D_{ict}^{E} is a set of dummies for the woman's education attainment, whose exact definition varies across countries, but mostly captures attainment at the primary, secondary, or tertiary level. $\mathbf{X_{it}}$ is a vector of individual and household variables. At the individual level, the vector contains the woman's age, its square, and her membership to ethnic or religious groups.[16] At the household level, we first capture, as two separate variables, the number of children of ages 0–4 and 5–14. Second, we add a set of education attainment dummies for the household head except whenever woman i is the head; we code those cases with a separate dummy variable.[17] Further, vector $\mathbf{X}$ includes the natural log of per capita monthly household income, defined as the sum of earnings from each individual's main occupation, *excluding* woman i's earnings. To proxy for a stable income source, we measure whether at least one adult male in the household is currently engaged in wage employment. δ_{rct} is a set of regional fixed effects that capture demand and supply conditions at the local labor market level for each country-year. Regions, indexed by r, vary in number and dimension by country, but we always use the highest subnational level of aggregation available in each

[15] We obtain similar results with a logit model.

[16] For Indonesia and Tanzania, it was not possible to derive meaningful proxies for ethnicity or religion that were also comparable over time.

[17] For South Africa, however, we use an alternative definition of household head education, since the head is not identifiable from the data. As a best approximation, we use the maximum educational attainment of any adult married man of age 18+, with an additional dummy whenever no such household member exists.

survey.[18] Finally, α_{ct} is an intercept.[19] We cluster standard errors at the regional level.[20]

In an alternative specification, we analyze whether FLFP is associated with the sector in which jobs are available locally, as do Klasen and Pieters (2015) for urban India. As a result of norms about the types of work appropriate for women, discriminatory practices, and the extent to which hours and location of work are flexible within a particular occupation, employment opportunities for women may depend especially on employment growth in particular sectors. To capture the structure of local labor demand, we replace the regional fixed effects with the sectoral composition of male employment at the regional level (construction, agriculture, mining, manufacturing, white-collar services, and other services).[21] However, we find no clear relationship between these sectoral variables and FLFP. For this reason, we only present results for the specification with regional fixed effects.

Our estimates are best interpreted as reduced-form correlations. In this setting, endogeneity mainly stems from omitted variable bias, due to the individual or household unobservables jointly determining labor force participation, education, fertility, marital matching, and location (urban-rural). We explicitly address some of these concerns in sections 3.1 and 3.2, where we assess the importance of selection bias related to marriage, settlement in urban areas, and educational attainment. Reverse causality, on the other hand, is less of a concern. We assume that prime-age women completed their education and marriage market histories. Moreover, we assume that each woman takes the labor market status of her spouse as exogenous, since in all countries and years of our sample prime-age married men have nearly universal labor force participation rates.

We do not attempt to causally identify structural parameters for two reasons. First, there is no quasi-experimental strategy (such as an instrumental variables approach) applicable to all countries and years similarly.[22] Second, the prevailing methods for estimating own-wage effects are notoriously challenging and known to produce unstable

[18] These are: provinces in South Africa, Indonesia, and Vietnam, states in Brazil and India, governorates in Jordan, departments in Bolivia, and regions in Tanzania. As a robustness check, we remove as much spatial heterogeneity as possible by adding primary sampling unit (PSU) fixed effects to the model. PSU information is not available for all surveys. For Brazil, Bolivia, South Africa and Tanzania, we find similar results with either PSU or regional fixed effects. For India and Indonesia, adding fixed effects at the second highest subnational level—districts in India, regencies (*Kabupaten*) and cities (*Kota*) in Indonesia—also produces similar results.

[19] We also include survey wave dummies whenever there are several survey waves per year (as in South Africa after 1995, Jordan, and Tanzania).

[20] For more details on the construction of these variables across countries see Appendix A.1; for sample means of the variables by country and year see Tables A2-A9.

[21] The Indian and Indonesian surveys are representative at the second highest subnational level; this is the level of aggregation used for the regional employment share variables. For the remaining countries, we use the highest subnational administrative level to aggregate the employment shares.

[22] In principle, one could pursue a country and year-specific IV approach, but the resulting local average treatment effects would be hard to interpret in a unified comparative framework, as the population of compliers would vary across settings and IVs.

results.[23] In addition, the quality of existing wage data varies substantially across surveys.

3 Results

We first summarize the estimation results for each country (in increasing order of GDP per capita), and then turn to a discussion of the main trends and patterns. Table 1 provides an overview of the relationship between key variables (or variable groups) and women's labor force participation in each country, and their changes over time.[24]

In Tanzania, FLFP increases linearly with education attainment in 2000 and 2014. The effect of household income is negative but small, and declines in absolute magnitude over time. The number of children aged 0–4 only has a significant (and small) negative effect in 2014. Otherwise, the number of children in the household does not correlate with FLFP. Besides a tiny negative effect of household income, none of the explanatory variables is statistically significant in 2006, which likely reflects the lack of variation in the dependent variable: the participation rate in the estimation sample is 92 percent.

India shows a clear U-shaped relationship between own education and FLFP. Relative to the reference group of illiterate women, the average marginal effects are negative and larger in magnitude with each additional level of educational attainment up to completed middle schooling—which is the level associated with the lowest participation rates in all years. The average marginal effect is still negative for complete secondary schooling, but closer to zero. For women with any tertiary education, the positive marginal effect is very large and significant, although declining over time: from 21 percentage points in 1999 to 14 percentage points in 2011. Household head education, household income, and male salaried employment (to proxy security of income) correlate negatively with participation—although the latter effect is no longer significant in 2011. The presence of young children is correlated with lower participation, and this negative effect is becoming stronger over time. For older children, the average marginal effect is actually positive after 1999, but always small. Finally, caste and religion are important correlates of FLFP as well, with lower caste and Hindu women being more active in the labor market than upper caste and Muslim women. The effect of caste is weakening over time; the effect of religion is strengthening.

In Vietnam, the relationship between education attainment and FLFP is positive and linear in 2002, but only the effect of tertiary education remains over time. The small negative income effect in 2002 becomes insignificant in the later years. The number of young children is negatively associated with FLFP after 2002; the effect is large (in absolute

[23] See Klasen and Pieters (2015, pp. 460–461) for a discussion of the lack of robustness in estimates of own-wage effects in India, as well as a more detailed discussion of the challenges involved in such estimations.

[24] The average marginal effect estimates for the probit models are reported in Tables A10-A17.

terms) and increases over time: in 2014, one additional young child is associated with a 6 percentage points reduction in women's participation probability. We do not find clear associations between FLFP and older children, male salaried employment, household head education, or ethnicity.

In Bolivia, education is not significantly correlated with FLFP, except for tertiary schooling, which affects participation positively. The estimate fluctuates a bit between 2000 and 2008, after which it increases until 2014. Household income and salaried employment of a male household member reduce FLFP. The effects are substantial, when compared to estimates from other countries. The presence of at least one male salaried employee in the household correlates with a 4 to 10 percentage point decline in the woman's participation likelihood, depending on the year. Young children have a sizable negative effect. Household head education was negatively related to FLFP in 2008, 2011, and 2014, with the effect getting weaker over time. Native speakers of indigenous languages are more likely to participate in the labor market.

In Indonesia, the relationship between own education and FLFP in the first year (2000) resembles the U-shape found for India, with negative effects of primary and junior high school completion (relative to the reference group of women who did not complete primary school), and positive effects of completed secondary schooling and especially tertiary education. Yet, the pattern changes: in 2014, only the positive tertiary education effect remains, and it is somewhat smaller than in 2000. Household income has a sizable negative effect on participation, and this becomes stronger over time. The estimates of male salaried employment are, likewise, negative and increasing (in absolute terms), while the negative effect of household head education decreases. There is a large negative effect of young children and a smaller negative effect of older children. Both are increasing over the years, in absolute terms.

In Jordan, tertiary education has a strong positive relationship with FLFP, and the effect is very stable over time. Across lower education levels the relationship with FLFP is flat, except for a small negative effect of lower secondary education, resulting in a J-shaped education-participation relationship. Income has a small but significant negative effect in every year.[25] Male salaried employment increases FLFP in the most recent years (2010 and 2014), while the positive effect of a tertiary educated household head disappears after 2010, both suggesting that income security is less relevant. We may rather be picking up effects of assortative matching. Nationality is a significant factor. Women from other Arab countries are significantly less likely to participate than Jordanian women (and the effects become stronger over time), while those from non-Arab countries are much more likely to be active. Finally, both young and older children reduce FLFP, and these effects

[25]The small size of the income effect should be interpreted with caution. The earnings variable available from the Jordanian surveys is very roughly measured: it is the mid-point of five earning brackets. We thus suspect the average marginal effects of household income to suffer from attenuation bias.

Table 1: Estimation results: overview

Country	Own education	Household head education†	Household income	Male salaried employment	Children 0–4	Children 5–14	Population group
Tanzania							
Effect	weak linear increase	(0)	small (−)	(0)	small (−)	(0)	not included
Time trend	→		↘		in 2014		
India							
Effect	strong U-shape	sizable (−)	sizable (−)	small (−)	small (−)	tiny (+)	sizable: caste (religion)
Time trend	more shallow	↘	→	gone by 2011	↗	after 1999, →	↘ (↗)
Vietnam							
Effect	weak linear increase	(0)	small (−)	(0)	sizable (−)	(0)	(0) ethnicity
Time trend	↘		gone after 2002		after 2002, ↗		
Bolivia							
Effect	weak linear increase	small (−) for tertiary educ	sizable (−)	sizable (−)	sizable (−)	(0)	sizable: language
Time trend	↘	after 2005, ↘	↘	↗ ↘	↗		↘
Indonesia							
Effect	U-shape	(−)	sizable (−)	small (−)	sizable (−)	small (−)	not included
Time trend	more shallow	↘	↗	↗	↗	↗	
Jordan*							
Effect	imprecise U-shape	(+) for tertiary educ	small (−)	small (+)	small (−)	small (−)	sizable: nationality
Time trend	slightly deeper	gone by 2014	→	after 2008	→	→	↗
South Africa							
Effect	strong linear increase	(0) [strong (+) for female heads]	small (−)	(0)	sizable (−)	small (−)	sizable: race
Time trend	↘	[gone after 2003]	→, but gone in 2014		slightly ↗	slightly ↗	→
Brazil							
Effect	strong linear increase	(−) [strong (+) for female heads]	small (−)	small (−)	sizable (−)	small (−)	sizable: race
Time trend	→	↘ and gone after 2009 [↘]	turning (+) by 2013	gone by 2009	↗	↗	↘

Sources: Authors' own calculations, see Table A1. Average marginal effects by country and year are reported in Tables A10-A17. *Notes:* (0) denotes statistical insignificance or estimates very close to zero; (+) [(−)] denotes positive [negative] and significant estimates. ↗ (↘) denotes increasing (decreasing) coefficient estimates over time in *absolute terms*. Countries are sorted by per capita GDP. † For South Africa, household head education is proxied by the highest education level of any adult married male in the household. * For Jordan, both urban and rural areas are included.

are stable over time.

In South Africa, we see strong positive participation-returns to education, with the marginal effect of education increasing at each level. The effects declined between 1995 and 2001 but then increased again until 2014. Household income has a slight negative effect that is no longer significant in 2014, and we find no clear association between household head education or male salaried employment and FLFP. Differences by skin color or ethnic group are large and significant: white women and especially Indian/Asian women are less likely to participate than black and colored women. As in Jordan, both young and older children reduce FLFP. The estimates are larger in South Africa than in Jordan, especially for young children, and they become slightly stronger over time.

Finally, the results for Brazil also show a strong positive education-participation relationship, with increasing marginal returns. The returns to elementary school increase over time, whereas returns to higher education levels are stable across periods. We find a slight negative income effect from 2002 to 2009, which turns significantly positive in 2013. Male salaried employment has a negative effect in the early 2000s but no longer in 2009 and 2013. Household head education also has a negative effect in 2002 and 2005; afterwards, only tertiary educated household heads have a negative effect whose magnitude declines substantially. Female household heads, on the other hand, were 11 percentage points more likely to be active in 2002. The effect is shrinking fast over time, and is no longer statistically significant in 2013. Differences between ethnic groups declined over time, but remain noteworthy. The negative effects of children, which are larger for ages 0–4, became stronger over time.

Our results reveal two types of patterns between women's own educational attainment and their labor force participation: (i) a strong positive relationship with linearly increasing marginal participation-returns to education in Brazil and South Africa, and (ii) a U- or J-shaped relationship in India, Indonesia, and Jordan (Figure 7). In Bolivia, Vietnam, and Tanzania, the two patterns mix. Initially, there is a linear positive relationship that is much flatter and imprecise than in Brazil and South Africa. But, over time, the relationship turns into a J-shape in Bolivia and Vietnam, as the returns to low and intermediate education fall to zero. In South Africa, India, and Indonesia, the positive effect of secondary and tertiary education declined over time. For India, Klasen and Pieters (2015) relate this decline to changes in the selectivity of higher education, an issue we address in section 3.2.

The patterns suggest that the education-participation relationship moves from weak linear in low-income countries to a U- or J-shape in middle-income countries, before becoming strongly positive in upper-middle income countries. To some extent, this is also the pattern we observe over time within Bolivia and Vietnam. Our results thus illustrate that countries growing from low-income to lower-middle-income status will not necessarily experience an increase in the participation returns to education, and therefore increases in

educational attainment levels may have ambiguous effects on FLFP rates.

Furthermore, India, Indonesia, and Jordan are not only at the middle of the GDP per capita distribution in this sample of countries, but also form a more or less distinct group in terms of social and religious norms around women's participation in market activities. It is likely that the U-shape or J-shape at least partly reflects such norms, by which employment outside the home is not deemed appropriate for women at intermediate levels of education. In India and Indonesia, this is further corroborated by a negative relationship between household head education and FLFP, indicating that when the household's socio-economic status improves, women withdraw from the labor force.

Household income is negatively related to women's participation everywhere, but interestingly the negative effects disappeared in South Africa and Brazil by 2013–14 (Figure 8). In these two countries, male salaried employment and household head education have no clear relationship with FLFP either. Hence, in the richest two countries in our sample, income and income uncertainty seem to play no role in 'pushing' women to participate in the labor force, whereas their own education is a major factor.[26] Thus, women's own characteristics matter the most for labor force participation; household conditions, except the number of young children, have become irrelevant.

The role of children is also noteworthy (Figure 9). While women in households with young children are less likely to participate in the labor force in all countries and time periods, older children reduce FLFP only in the relatively high-income countries. In poorer countries we find no evidence for such a relationship, which may reflect income constraints, whereby mothers cannot afford to stay out of the labor force for long in poorer settings.[27]

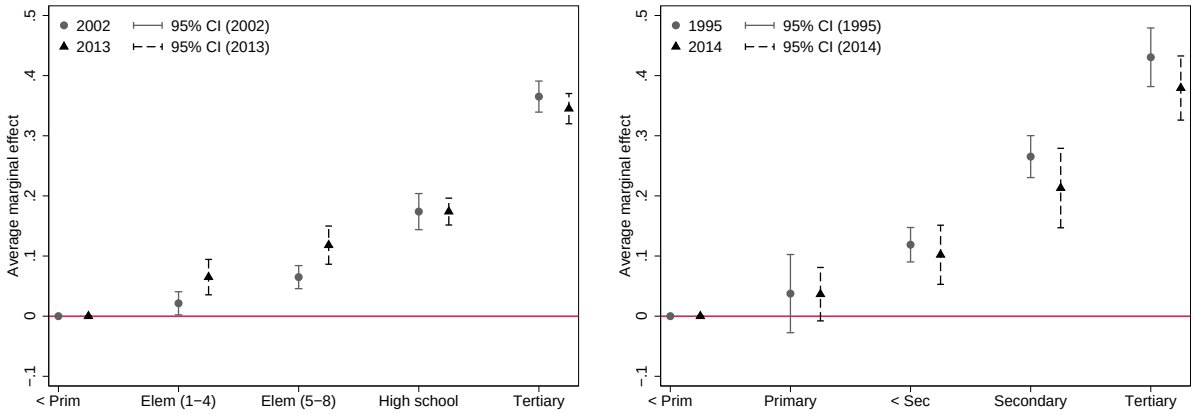
In sum, the correlates of FLFP differ across (groups of) countries. In the remainder of the paper, we investigate whether these differences can explain trends in labor force participation and gaps across countries. But first we assess whether the estimates are robust to trends in marriage and urbanization rates.

3.1 Selection into marriage and urban areas

Given our exclusive focus on urban married women, it is important to take into account trends in the incidence of marriage and urban residence. Otherwise, unobservable factors shaping selection into marriage (or urban areas) and selection into the labor force could affect how coefficient estimates evolve over time. In our data, marriage rates declined in South Africa, Brazil, and Bolivia, increased in Jordan, Indonesia, and Vietnam, and remained constant in India and Tanzania. Urbanization rates were rising in Bolivia, India,

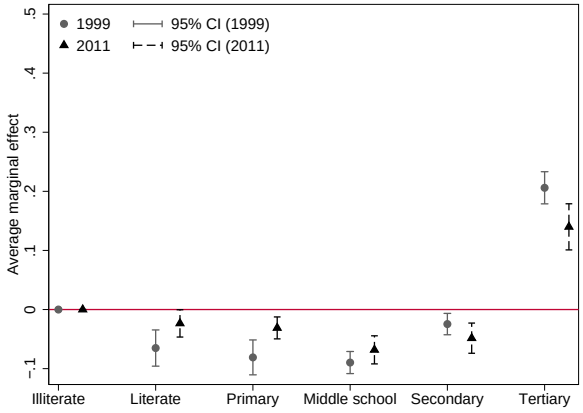
[26] This finding resembles patterns that are taking place in OECD countries in the past decades. In the US, for example, Blau and Kahn (2007) and Heim (2007) show that income elasticities of married women labor supply have plummeted since the 1980s.

[27] See Priebe (2010) for causal evidence of this mechanism in Indonesia.

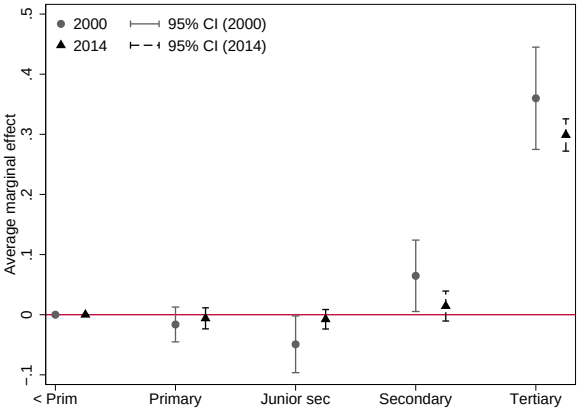


(a) Brazil

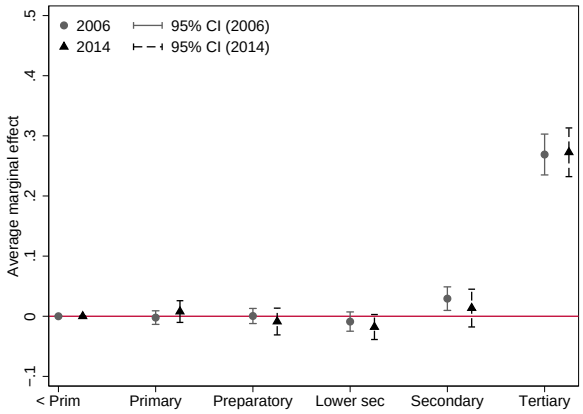
(b) South Africa



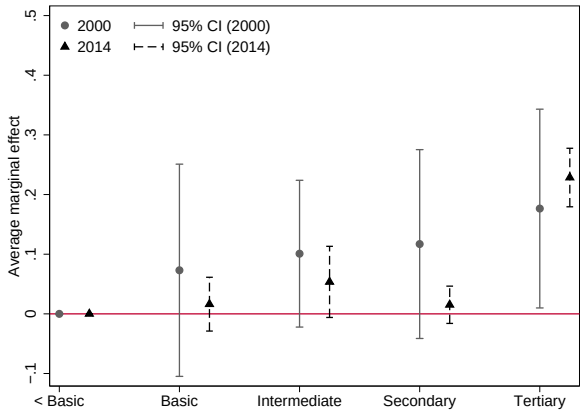
(c) India



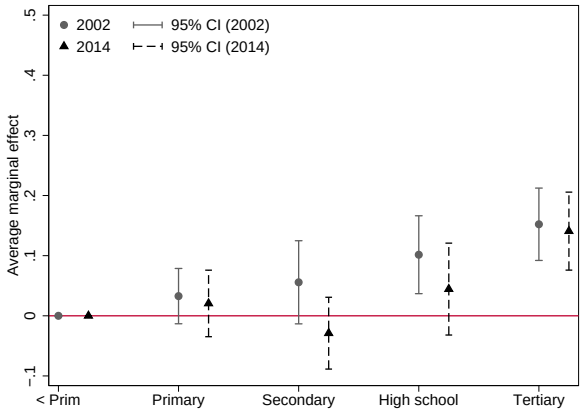
(d) Indonesia



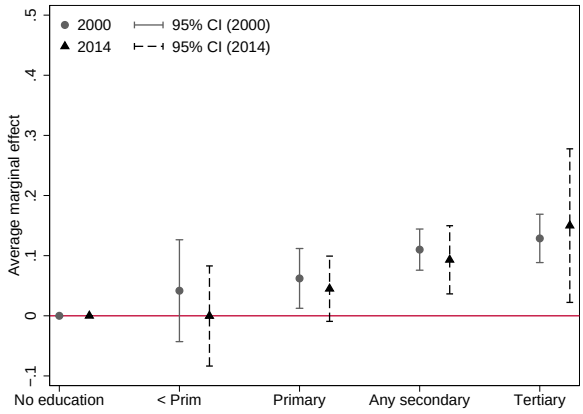
(e) Jordan



(f) Bolivia



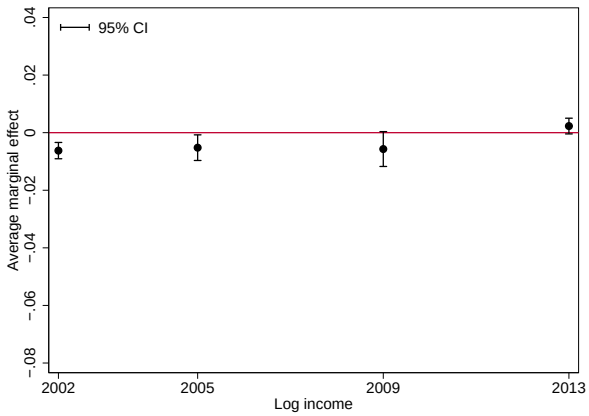
(g) Vietnam



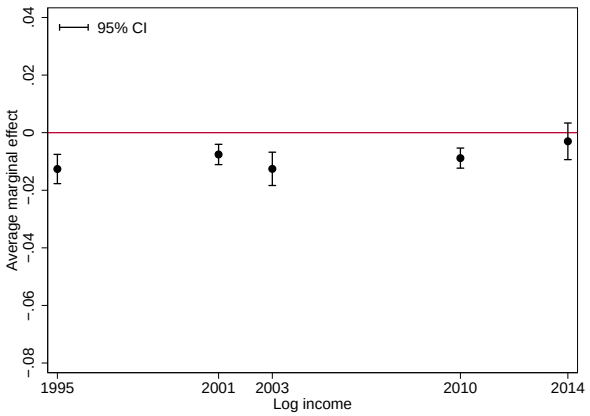
(h) Tanzania

Figure 7: Average marginal effects of the woman's own education

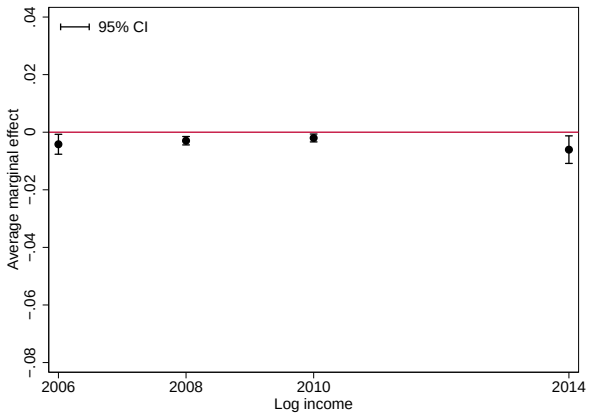
Notes: Common Y-axis for all subfigures. Average marginal effects of the full probit model are reported, for each country and year, in Tables A10-A17.



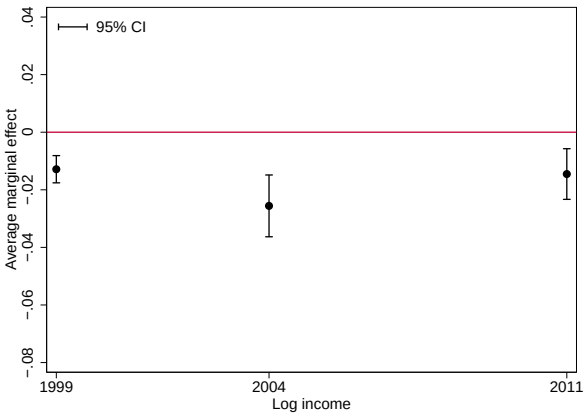
(a) Brazil



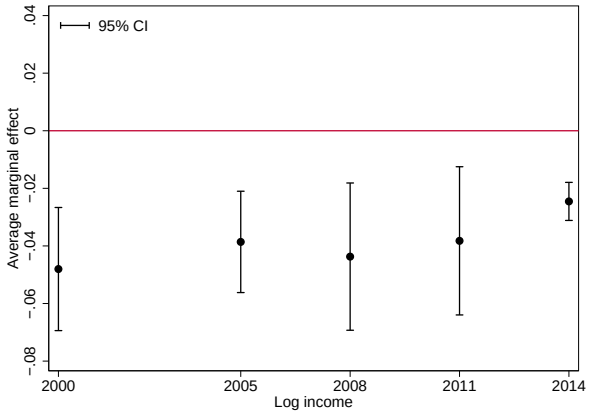
(b) South Africa



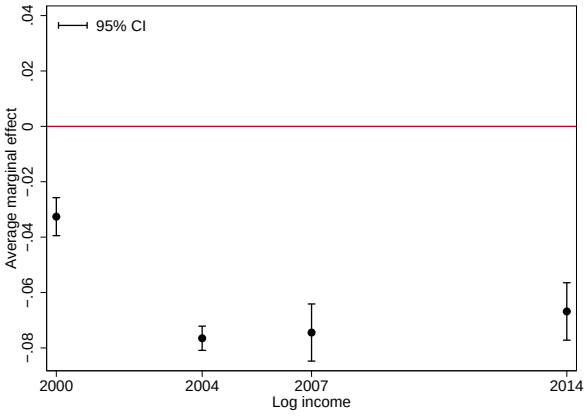
(c) Jordan



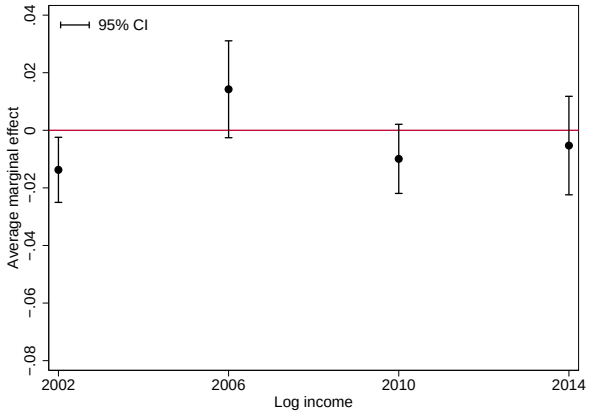
(d) India



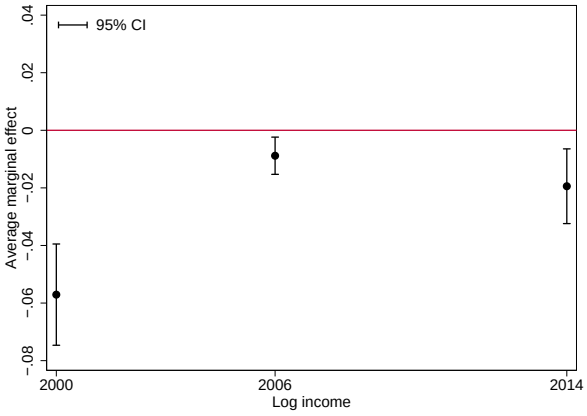
(e) Bolivia



(f) Indonesia



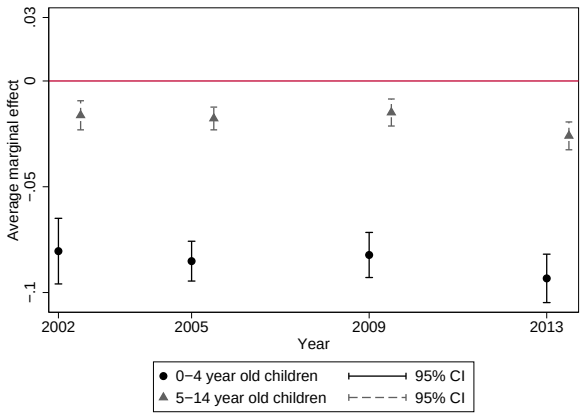
(g) Vietnam



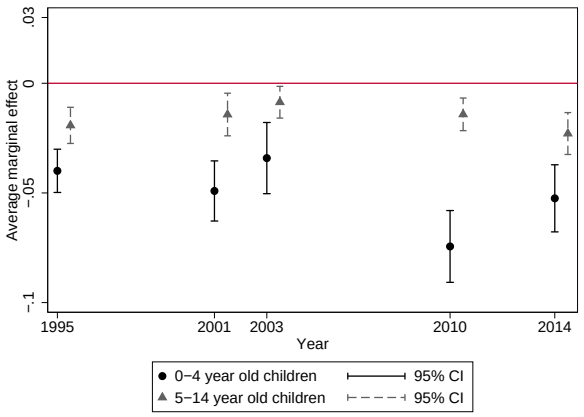
(h) Tanzania

Figure 8: Average marginal effects of log household per capita earnings (excluding woman's own earnings)

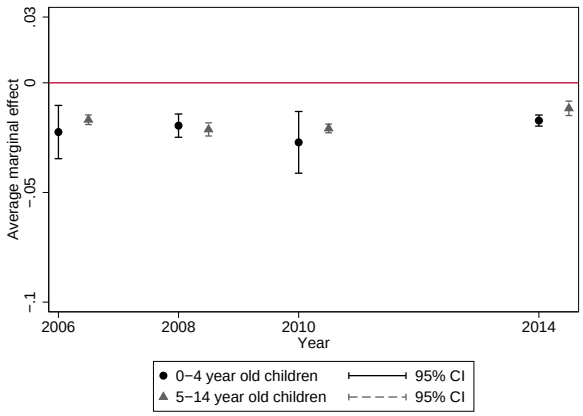
Notes: Common Y-axis for all subfigures. Average marginal effects of the full probit model are reported, for each country and year, in Tables A10-A17.



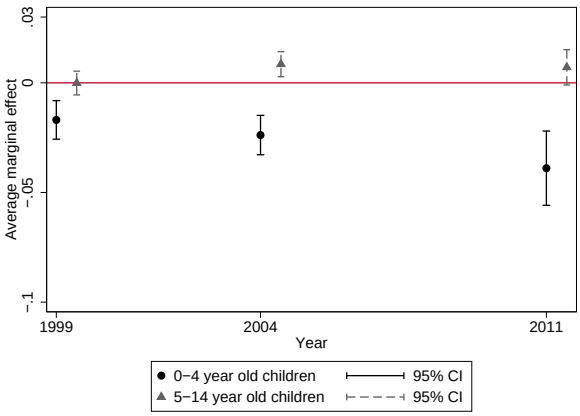
(a) Brazil



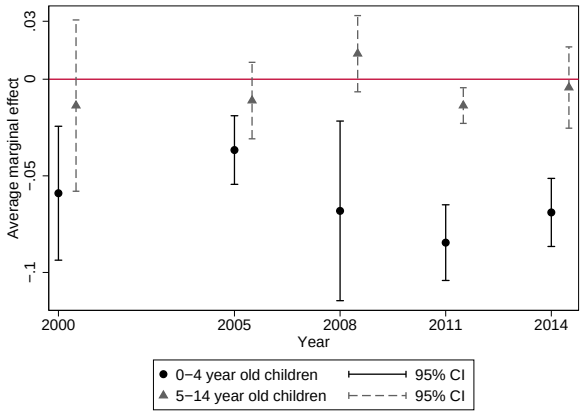
(b) South Africa



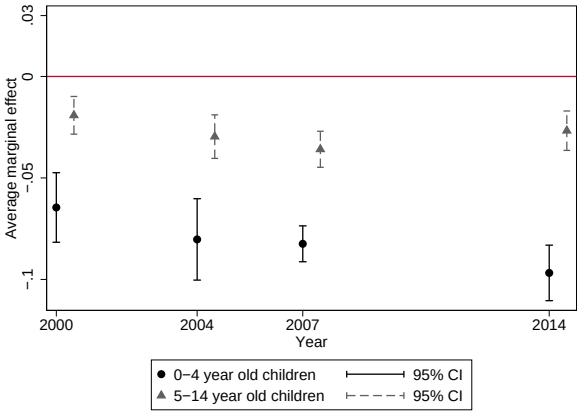
(c) Jordan



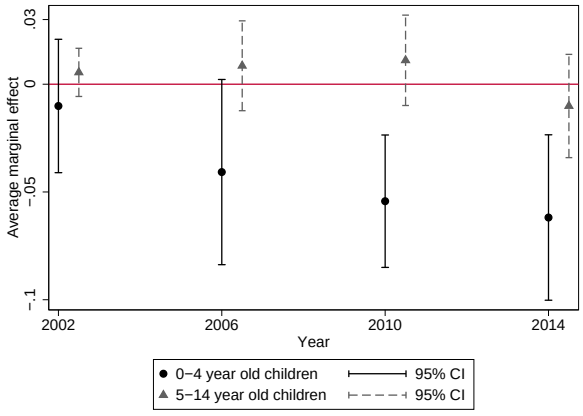
(d) India



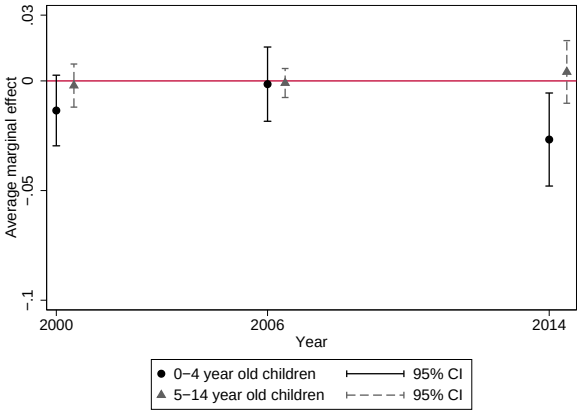
(e) Bolivia



(f) Indonesia



(g) Vietnam



(h) Tanzania

Figure 9: Average marginal effects of the number of children

Notes: Common Y-axis for all subfigures. Average marginal effects of the full probit model are reported, for each country and year, in Tables A10-A17.

Indonesia, Tanzania, South Africa, and Vietnam, while no changes occurred in Brazil.[28]

We follow Blau and Kahn (2007), who control for falling marriage rates in modeling female labor supply in the US. Their procedure consists of (1) predicting an individual's marriage probability, and (2) excluding from the estimation sample the married women with lowest predicted probabilities (i.e., the least "marriage-prone" among the married) such that the resulting "adjusted"-marriage rate is equal across survey years.[29] We estimate marriage probabilities for each country-year from a probit model with the covariates age, age squared, ethnicity/religion, education attainment, regional dummies, and (whenever relevant) survey wave dummies. We use the same approach to control for selection into urban areas. The probit model predicting urban residence includes the same covariates as the marriage model plus the number of children in the household of ages 0–4 and 5–14. We then re-estimate our labor force participation model on the "adjusted"-samples.

Trends in marriage incidence or urbanization do not affect our findings. The results from the "adjusted"-marriage and "adjusted"-urban samples are qualitatively similar to the baseline estimates.[30]

Whenever possible, we directly control for rural-urban migration. For Tanzania, we find that women migrating more than five years before the survey are 5 percentage points more likely to be in the labor force in 2014; the effect being insignificant in the first two years. For migrants arriving less than five years before the survey, the effects are never significant. In Brazil, migration status (captured by individuals' place of birth being in a different state or different municipality than their current residence) has no significant effects. In Bolivia, a woman's migration status (a dummy variable for whether, five years before the survey, she lived outside the municipality of current residence), was associated with lower labor force participation only in the last two survey years (the average marginal effect is around minus 5 percentage points in both years).[31] For all three countries, adding the migration controls does not affect the average marginal effects of the remaining explanatory variables.[32]

In sum, trends in the rates of marriage and urban residence among prime-age women do not influence the determinants of labor force participation.

[28]The magnitude of these changes varies across countries. See Table A18 for the relevant descriptive statistics. Recall that there is no urban/rural information for Jordan.

[29]For example, the incidence of marriage among prime-age urban women in South Africa fell from 0.66 in 1995 to 0.51 in 2014. Thus, from the 1995 sample, we eliminate the 22.7 percent $[(0.66 - 0.51)/0.66]$ least marriage-prone individuals based on their predicted marriage probabilities. In practice, there are tiny differences in the resulting "adjusted"-marriage rates due to the use of sampling weights.

[30]We do not report them here; available upon request.

[31]Full results available upon request.

[32]Klasen and Pieters (2015) show that, for India, the 1999 results are robust to adding migration variables (both the woman's and her spouse's), which are themselves insignificant. There is no migration data available for 2004 and 2011.

3.2 Selection into education

We now consider selection into education, not because of concerns about the robustness of our estimates, but rather out of interest in the forces driving changes in returns to education. Education levels have increased over time in all eight countries. Since, in our sample of prime-age married women, education histories are largely complete, average educational attainment increases because younger, more educated cohorts progressively replace older, less educated ones. This process raises the question of whether the selection of women into education levels varies across cohorts. If it does, trends in the estimated average marginal effects of educational attainment could be driven by changes in the sample's cohort composition, rather than by changes in the marginal effects of education.

We explore this possibility in more detail for India, Indonesia, and South Africa. The three countries experienced rising shares of highly educated women (tertiary level, see Figure 10) and, simultaneously, a sizable *decrease* in the (positive) average marginal effect of being highly educated (see Figure 7).

We would like to know how much of the decline in the effect of tertiary education could be plausibly explained by decreasing selectivity of women in terms of labor force attachment at the top of the education distribution. Klasen and Pieters (2015) propose a thought experiment to estimate an upper bound on the size of the selection effect. Imagine that the initial distribution of women's educational attainment is a one-to-one match to the distribution of unobserved labor force attachment. If there are K educational levels, there are also K attachment levels; the women achieving the highest level of education being also the ones with the highest level of labor force attachment. As a result, the average marginal effect of education on labor force participation is positively biased. Now, consider a completely supply-driven expansion of education: the government produces and offers cost-free slots of tertiary education. The new slots are filled by women below that educational level in decreasing order of labor force attachment. That is, less attached women are moving up the education ladder. As a consequence, average labor force attachment at the tertiary level is now lower than before, and the estimated effect of education on labor force participation falls.

Consider two extreme scenarios of the thought experiment. If all women have the same labor force attachment (or education and labor force attachment are completely unrelated), the education expansion would have *no* selection effect; over time, any changes in the education estimates result from changes in the effect of education itself. If, on the other hand, the education effect is *fully* driven by labor force attachment, then the post-expansion education estimates are a weighted sum of the pre-expansion estimates, where the weights are the changes in the attachment composition of each education level.

With the last scenario in mind, we can estimate an upper bound of the selection effect. Let us illustrate the procedure for South Africa. In 2014, the share of women with tertiary

education was 0.21. Nearly two decades before, in 1995, that share was 0.14. Thus, in 1995, one third of the women in the top 21 percentiles of the education distribution had complete secondary schooling (see Figure 10). We can then estimate the average marginal effect of being in the top 21 percentiles of the education distribution in 1995 as two thirds the average marginal effect of tertiary education plus one third the average marginal effect of completed secondary schooling. If this reweighed 1995 estimate comes closer to the average marginal effect of tertiary education in 2014, then the effect of being in the 21 highest education percentiles (relative to the reference group with below primary schooling) did not change over time. What changed instead was the selectivity of women into educational attainment.

For India and South Africa, we find that the reweighted estimates closely reproduce the average marginal effects of the latest year. In theory, the selection effect is large enough to explain the declining effect of high education in the two countries (Figure 10). For Indonesia, the reweighted estimate is about 30 percent smaller than the average marginal effect, implying that the selection effect can account for a stronger decline in returns to higher education than actually observed. This suggests that the participation returns to tertiary education may have in fact increased in Indonesia between 2000 and 2014, even though the estimated effect on labor force participation declined. Yet, since our reweighted estimate reflects the upper bound, it is also possible that the returns to education did not change, or declined.

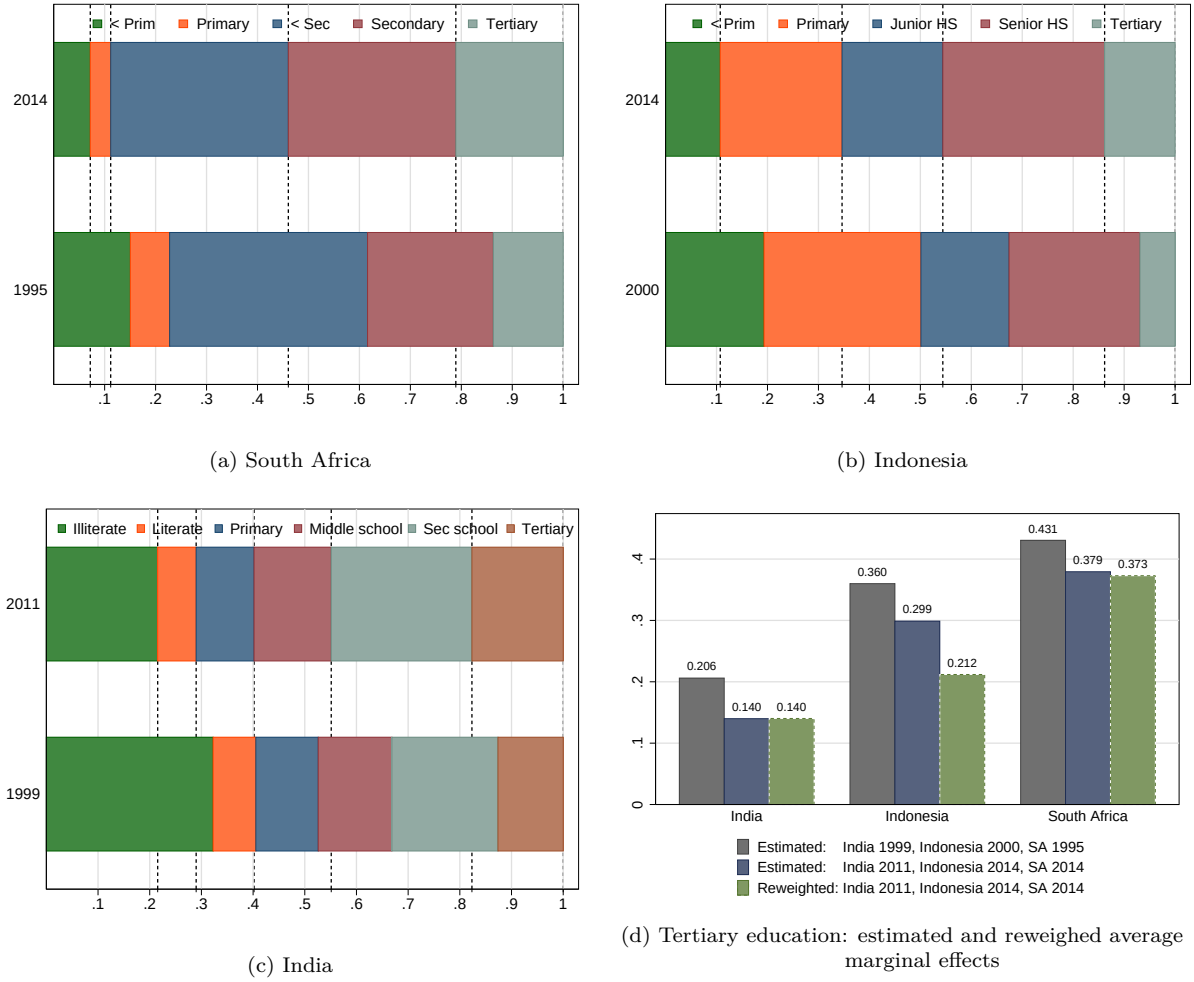
4 Decomposition analysis

In this section, we decompose differences in labor force participation rates using Fairlie's (2006) extension of the Blinder-Oaxaca decomposition for binary dependent variables. Consider two mutually exclusive groups of women, A and B. In our case, A and B will be either the first and last survey of a country—thereby decomposing changes in labor force participation rates over time—or two countries in a given year—thereby decomposing the gap in participation rates between two countries. Start by defining the overall mean LFP gap between group A and group B as:

$$\Delta_O \equiv \mathbb{E}[LFP_B|D_B = 1] - \mathbb{E}[LFP_A|D_A = 1],$$

with D_g being an indicator variable determining membership of group g, where $g = A, B$.[33] Then, decompose the gap between the usual covariate contribution, Δ_X, and the unexplained (i.e., coefficients and unobservables) contribution, Δ_U, by substituting in our

[33]We loosely follow the notation of Fortin *et al.* (2011), who review decomposition methods relevant to labor economics.



(a) South Africa

(b) Indonesia

(c) India

(d) Tertiary education: estimated and reweighed average marginal effects

Figure 10: Education selectivity

Notes: Panels (a), (b), (c) show changes in the education distribution over time. Panel (d) shows the estimated average marginal effects from the probit models and from the reweighting procedure described in the text.

probit model of LFP and rearranging:

$$\begin{aligned}\Delta_O &= (\mathbb{E}[\Phi(X\beta_A)|D_B=1] - \mathbb{E}[\Phi(X\beta_A)|D_A=1]) \\ &\quad + (\mathbb{E}[\Phi(X\beta_B)|D_B=1] - \mathbb{E}[\Phi(X\beta_A)|D_B=1]) \\ &= \Delta_X + \Delta_U,\end{aligned}$$

Replacing the expectations with their empirical counterparts gives:

$$\overline{LFP}_B - \overline{LFP}_A \approx \left[\sum_{N_B} \frac{\Phi(X_B\hat{\beta}_A)}{N_B} - \sum_{N_A} \frac{\Phi(X_A\hat{\beta}_A)}{N_A}\right] + \left[\sum_{N_B} \frac{\Phi(X_B\hat{\beta}_B)}{N_B} - \sum_{N_B} \frac{\Phi(X_B\hat{\beta}_A)}{N_B}\right],$$

with N_g being the size of group g.[34] Notice how the coefficients of group A, $\hat{\beta}_A$, weigh

[34]The expression holds as an exact equality for logit models that include an intercept, whereas it holds very closely for probit models (Fairlie, 2006).

the covariate contribution, and the covariate distribution of group B, X_B, weighs the unexplained term. An equally valid decomposition, but leading to different results, is using $\hat{\beta}_B$ to weigh the covariate contribution and X_A to weigh the unexplained term.

In sum, the choice of counterfactual matters. In the presence of general equilibrium effects, the parameter vector for the appropriate counterfactual might be neither $\hat{\beta}_A$ nor $\hat{\beta}_B$. Accordingly, we always report results based on both counterfactuals, interpreting them as a reasonable interval containing the true effect.

In a nonlinear setting, the main challenge is decomposing the total covariate contribution, Δ_X, into the individual contributions of each covariate because the contribution of each variable depends on the distributions of all other variables. Fairlie's (2006) method creates a series of counterfactuals by sequentially replacing the distribution of a variable with its counterpart in the comparison group, while holding constant the distribution of the other covariates.[35] The average difference between the observed values and each counterfactual gives the variable's contribution.

In practice, the sample sizes of groups A and B always differ in our setting. Fairlie (2006) suggests taking random subsamples of the largest group that fit the size of the smallest group. Next, predict LFP probabilities within each group, rank each individual in her group based on her predicted LFP, and match similarly ranked pairs across the two groups (i.e., the top ranked observation of group A with the top ranked observation of group B, and so on). The final step is then to average the result over the sample draws.[36]

4.1 Decomposing changes over time within countries

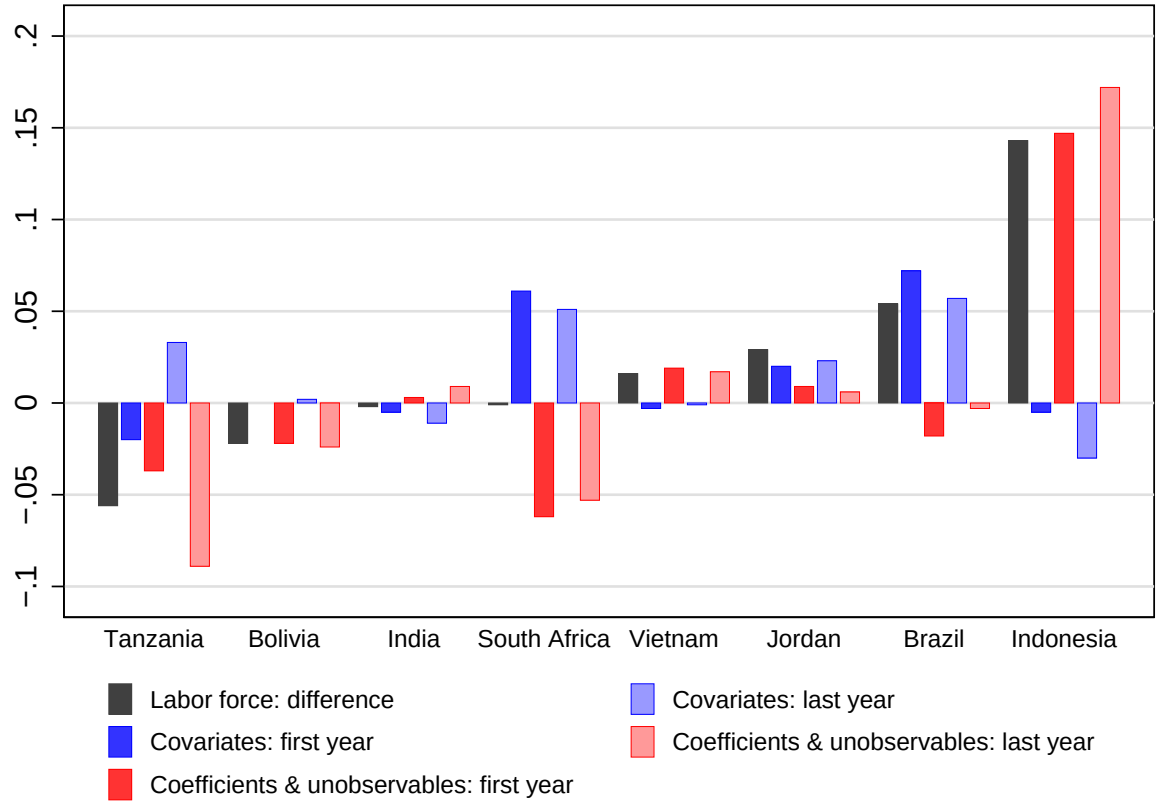
We start by decomposing the change in FLFP over time for each country. Figure 11 summarizes the results, showing countries in increasing order of the FLFP gap between the last and first years.[37] We show results for the two alternative counterfactuals: weighting the covariate contribution at first or last year coefficients. With the exception of Tanzania, the two counterfactuals produce consistent results: the contributions of covariates and of coefficients and unobservables (i.e., the unexplained term) have the same direction and order of magnitude.

The extent to which changes in covariates can account for changes in FLFP differs across countries. Covariates explain most of the change in India, Jordan, and Brazil. In India, FLFP declined slightly from 18.4 percent in 1999 to 18.2 percent in 2011. The change in covariates during that period would predict a reduction in FLFP of 0.5 to 1.1

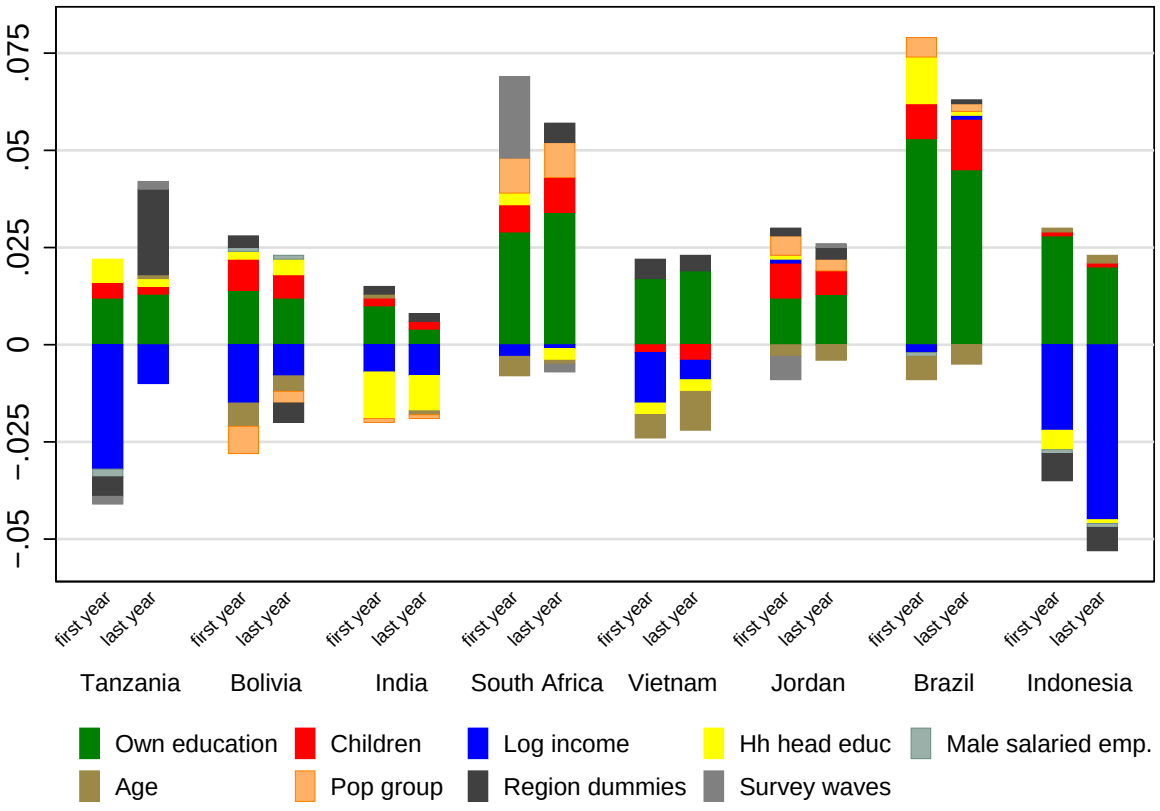
[35] See Fairlie (2006) for more details.

[36] For each decomposition, we draw 1000 random samples. In addition, at each sample draw, the ordering of the variables in the sequence of counterfactuals is randomly determined. This addresses the issue of path dependence: since individual contributions depend on the distributions of all other covariates, the ordering of the variables matters for the final result.

[37] For point estimates of the decompositions, see Tables A19-A22.



(a) Total covariate contribution



(b) Contribution of variable groups

Figure 11: Decompositions within countries over time

Notes: For point estimates of the decompositions, see Tables A19-A22. *First year* and *last year* refer to the year of the coefficients used to compute the covariate contribution.

percentage points. The negative effects of rising household head education and rising household income more than offset the positive effect of rising women's education and falling fertility. In Jordan, rising education and falling fertility drive most of the positive covariate effect, which accounts for more than two thirds of the small increase in FLFP between 2006 and 2014. In Brazil, covariates come close to explaining the full FLFP increase between 2002 and 2013 (which was about 5 percentage points). Rising female education and, to a lesser extent, declining fertility are the main forces.

In Tanzania, Bolivia, Vietnam, and Indonesia, changes in coefficients and unobservables account for almost all of the change in participation rates.[38] The changes in covariates in each of these four countries contributed little or nothing to changes in FLFP rates, whether they declined (in Tanzania and Bolivia) or increased (in Vietnam and, especially, Indonesia). A positive contribution of increasing women's educational attainment (and declining fertility in Tanzania and Bolivia) was, in all cases, offset mainly by the negative contribution of rising household incomes.

Finally, in South Africa, where the participation rate was nearly constant between 2001 and 2014, the positive covariate contribution is offset by a negative contribution of coefficients and unobservables. Similar to Brazil, the covariate contribution is large and is accounted for by rising female education levels and reduced numbers of children.[39]

Summarizing the main findings, rising educational attainment contributed to higher FLFP in all countries, but most strongly in Brazil and South Africa, reflecting the strong participation-returns to education in these countries. In the other countries, the contribution was more limited, but still positive, despite the U- or J-shaped relationship between education and participation in Jordan, India, and Indonesia. This reflects educational attainment increasing predominantly at the highest levels of education, where the participation returns are positive.

With the exception of Vietnam, falling fertility also contributed to higher participation rates in all countries. The effect was strongest in Brazil, South Africa, and Jordan. This is mainly because children are more strongly associated with lower participation in Brazil and South Africa; hence a decline in the number of children accounts for a larger increase in the observed participation rate. Rising household incomes contributed to a decline in participation in Tanzania, Bolivia, India, Vietnam, and Indonesia. India is the only

[38]For Tanzania, results depend on the choice of counterfactual. Using the 2000 coefficients, the covariate effect accounts for 36 percent of the LFP reduction between 2000 and 2014. Increasing household incomes drive the negative covariate effect, being partly offset by the positive effect of rising female education. In 2014, the negative average marginal effect of income shrinks by two thirds relative to 2000. As a result, the total covariate contribution becomes positive when weighted at 2014 coefficients.

[39]In addition, we decompose the FLFP change in South Africa for the full post-*apartheid* period: 1995–2014. Participation rates of urban married women rose substantially from 58.5 percent to 68.1 percent between 1995 and 2001. We find that women's labor market characteristics account for around 70–74 percent of this increase (Table A23). Rising education, declining fertility, and a relative increase in the share of black women (in urban areas) were powerful drivers of participation in this period.

country in our sample where rising household head education made a significant negative contribution to FLFP rates. Finally, we also find a relatively strong (negative or positive) contribution of changes in the returns to characteristics and unobserved factors in several countries. The direction and relative importance of this component vary widely across countries, and it does not appear to be related to countries' income level or the observed level or change in FLFP rates.

4.2 Decomposing differences between countries

We next decompose FLFP differences between countries, using Brazil as the reference country. The decomposition shows the extent to which gaps in participation rates between a particular country and Brazil emanate from differences between women's observed characteristics versus differences in the returns to those characteristics (or other unobservables). We take Brazil as the counterfactual for two main reasons. First, having the highest per capita income in our sample, it constitutes a natural benchmark. Second, having the second highest increase in FLFP—entirely accounted for by changes in covariates—it is of particular interest to assess to what extent other countries' participation rates differ from Brazil's due to differences in covariates.

We run two sets of decompositions: *first year*, which uses covariates and coefficients from Brazil's 2002 survey and the other country's data from the survey year closest to 2002; and *last year*, which uses covariates and coefficients from Brazil's 2013 survey and the other country's data from the survey year closest to 2013.

The exercise requires a few data adjustments. First, we recode the educational attainment of the woman and household head into four broader categories (less than primary, primary completed, secondary completed, and any tertiary) that are identical for all countries. Similarly, we recode the social group variable—reflecting ethnicity, religion, or nationality—into a dummy variable equal to 1 for the social groups with positive average marginal effects on participation within each country and 0 otherwise.[40] To capture regional effects in a comparable way, we compute, for each country and period, the quartiles of the regional average marginal effects on participation. We then create a dummy variable for each quartile.[41] Finally, we do not use survey weights for the decompositions. Countries use different sampling strategies in their surveys, and often follow distinct approaches in calculating sample weights. We want to avoid that such methodological differences drive the results. Overall, the unweighted difference in FLFP between each country and Brazil comes very close the weighted difference (Figure A2).[42]

[40] Table A24 shows how the education and social group variables are created for each country.

[41] Excluding the regional dummies altogether does not change the decomposition results in any meaningful way.

[42] The only exception is Tanzania where the weighted FLFP rate is much higher than the unweighted rate. Accordingly, we interpret the results for Tanzania with caution.

The results are clear: the observed differences to Brazil's FLFP are mostly accounted for by differences in coefficients and unobservables (Figure 12).[43] The covariate contribution is always negative and relatively small, with the exception of South Africa and Vietnam, where it is positive in the first year. The largest negative contributions come from children and education: in most countries, households have more children, and women achieve lower educational attainment than in Brazil. As a result, participation rates are lower than they would be if fertility and education were at the Brazilian level. For example, if the number of children per household in Jordan would decline to the level of Brazil, FLFP would increase by 5 to 6 percentage points. Household head education (including the effect of female household headship) is also sizable and negative in Jordan, India, Indonesia, and Bolivia; in some of these countries, household heads are more educated than in Brazil (while household head education is associated with lower FLFP in Brazil), and in others there are much fewer women who head their households (while, in Brazil, female household headship is positively related to participation).

The overall negative covariate contribution is in the right direction for Jordan, India, and Indonesia (which have lower participation rates than Brazil), but much smaller than the observed difference. For the remaining countries, in at least one of the periods, the sign of the covariate contribution differs from the sign of the actual FLFP gap. In sum, differences in covariates between countries fail to explain the magnitude of differences in FLFP; in some cases, they even fail to predict the *sign* of the FLFP differences between countries.

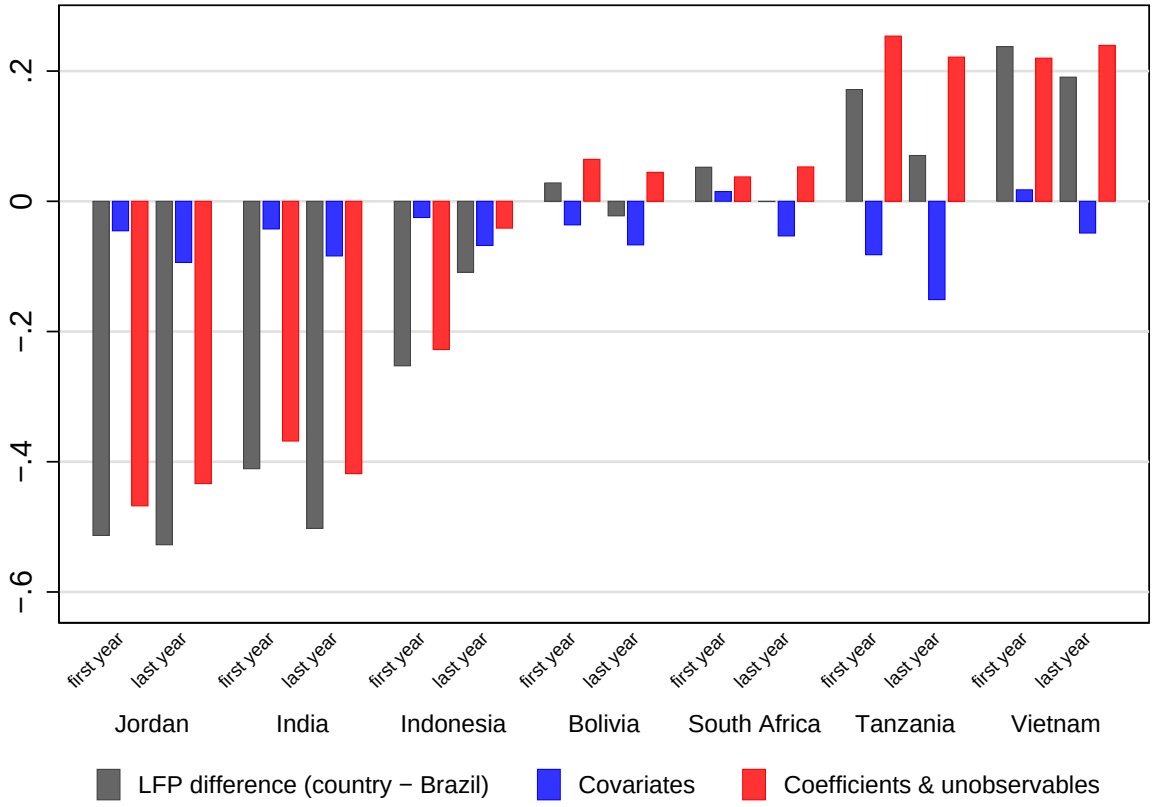
Another way to appreciate this result is to imagine that all countries operate in a single (fictional) labor market. All women face the same returns to covariates and share the same level of any other relevant unobservables, irrespective of their country of origin: these coefficients and unobservables are equal to those of Brazil. Otherwise, each woman has her own observable characteristics as given in the data.

What would be the labor force participation in this fictional "Brazilian"-like labor market? Figure 13 shows the answer: most of the observed FLFP differences would disappear. In the first year, the lowest participation rate would be 54 percent in Tanzania; the highest would be 64.4 percent in Vietnam. The average labor force participation would be 60 percent, with a standard deviation of 3 percent. In the last year, the average FLFP would rise to 61 percent (standard deviation of 4 percent). Compare these numbers to reality: the mean FLFP in the first year (last year) was 54 (56) percent; ranging from 11 (15) percent in Jordan to 86 (87) percent in Vietnam. The standard deviation was 27 (26) percent.[44]

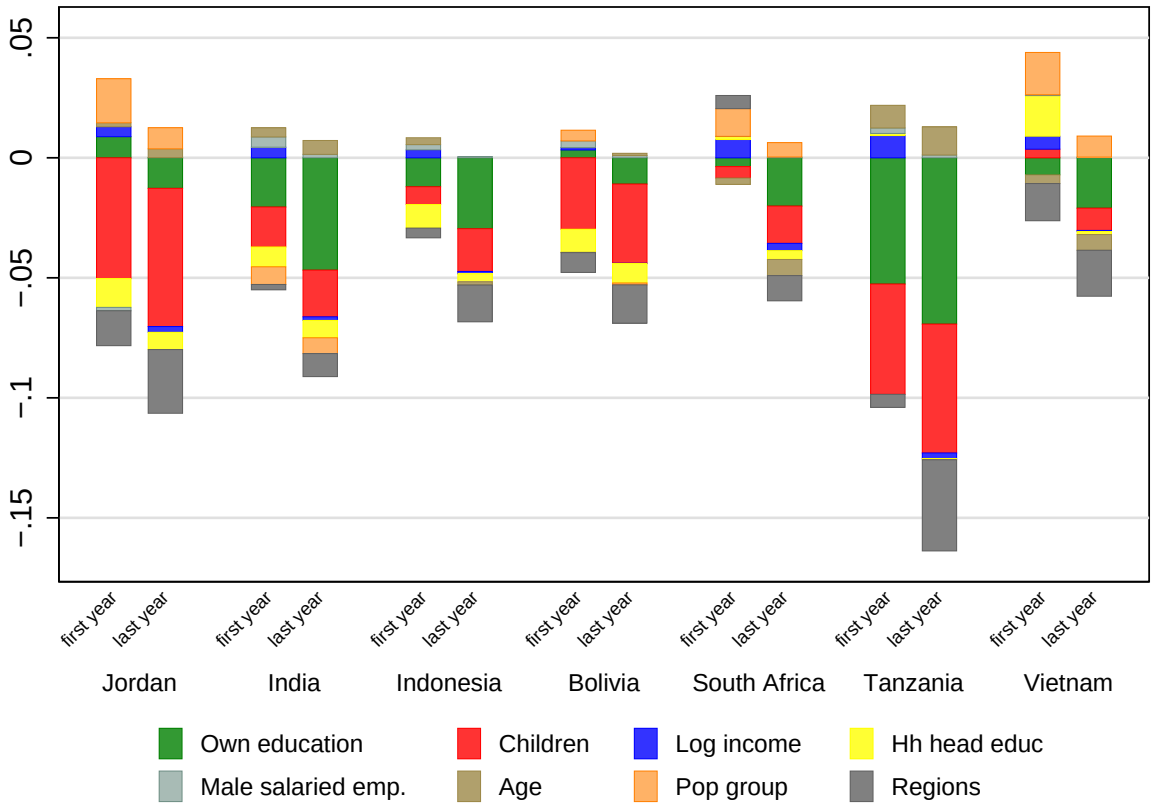
In the fictional "Brazilian" market, Jordanian women would have a *higher* participation

[43]For point estimates of the between-country decompositions, see Tables A25 and A26.

[44]The FLFP rates in the paragraph are calculated *without* survey weights.



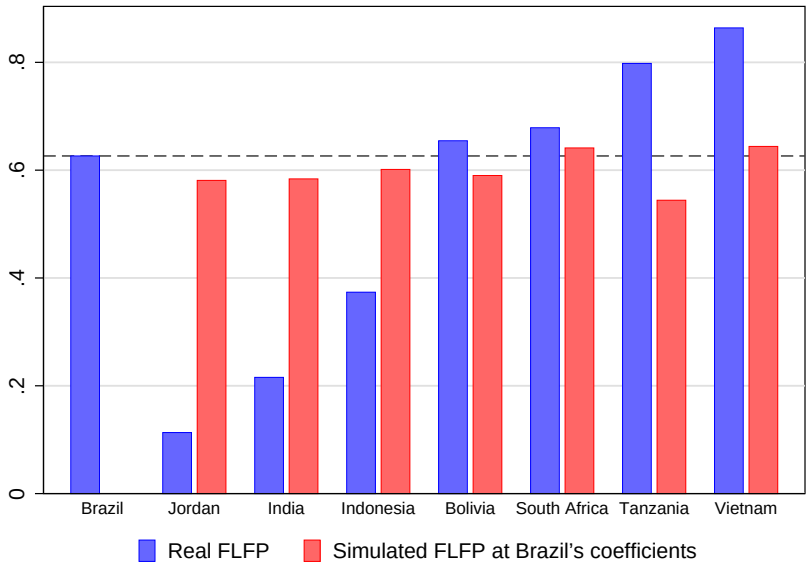
(a) Total covariate contribution



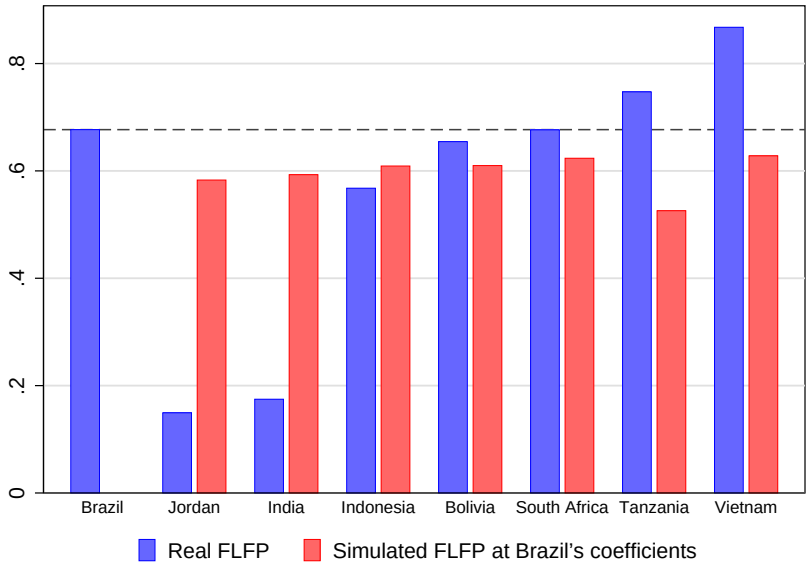
(b) Contribution of variable groups

Figure 12: Decompositions between countries

Notes: Brazil is the reference country for all pairwise decompositions. For point estimates of the decompositions, see Tables A25 and A26. *First year* and *last year* refer to the year of the coefficients used to compute the covariate contribution.



(a) First year, around 2002



(b) Last year, around 2014

Figure 13: Real FLFP vs. FLFP simulated at Brazil's coefficients

rate than women from Tanzania. In reality, in 2014, the participation rate for Jordan was a staggering 67 percentage points *lower* than in Tanzania. In brief: differences in the observed characteristics of women and their households cannot account for the wide variation in FLFP between countries. Instead, most of the between-country differences result from variation in the returns to those characteristics and other unobservable factors.

5 Conclusion

Using comparable microdata from eight low and middle-income countries, this paper sheds light on the impact and relative importance of what are considered key determinants of FLFP. We find that the participation-returns to women's *own characteristics* and *family circumstances*—including education, income, and fertility—differ substantially across countries. In fact, heterogeneity in returns to these characteristics explains most of the between-country differences in participation rates, indicating that the economic, social, and institutional constraints that shape women's labor force participation are still largely country-specific.

Nonetheless, some important patterns appear. Overall, rising education levels and declining fertility consistently increase FLFP, although the strength of these two forces differs across countries. At the same time, rising household incomes have a negative effect in all but the three richest countries in our sample (Jordan, South Africa, and Brazil), indicating that, in poorer countries, a substantial share of women work out of economic necessity.

In relatively poor countries with high initial participation rates (Vietnam, Tanzania, and, to a lesser extent, Bolivia), improving *family circumstances* (e.g., higher household incomes, or better educated household heads) have a moderate negative effect on women's participation. In terms of *women's own characteristics*, the positive participation-education gradient is flattening over time, except for relatively high participation returns occurring at the tertiary level. Future gains in female participation rates will depend on the extent to which women achieve educational attainment at the tertiary level.

In countries with low initial participation rates and strong social barriers to women's outside-home employment (India, Jordan, and, to a lesser extent, Indonesia), *family circumstances* have a much stronger grip on women's participation. Own education has a U- or J-shape relationship with participation, such that rising attainment at intermediate education levels actually depresses FLFP. Once again, expansion of women's access to tertiary education would be required to raise FLFP further. As shown by the Indonesian experience, however, changing returns to women's labor supply characteristics can boost participation rates dramatically.

In the richest countries (Brazil and South Africa), where social barriers to women's

employment are relatively small, *family circumstances* other than fertility have become largely irrelevant. With a strong positive education-participation gradient and a strong negative effect of fertility, increases in women's own education and falling fertility boosted participation in these countries. In the future, higher educational attainment and lower fertility will likely continue to translate into higher FLFP.

Finally, we find suggestive evidence of reduced selectivity of tertiary education in India, Indonesia, and South Africa (similar to the results for India in Klasen and Pieters (2015)). This may mitigate the extent to which further educational advancement will translate into higher FLFP in these countries.

While this paper has focused on supply side factors, FLFP might be severely constrained by demand factors. For example, the unexplained portion of the gender wage gap did not decline substantially in recent decades (Weichselbaumer and Winter-Ebmer, 2005; Oostendorp, 2009), and employment sectors and occupations remain highly segregated by gender (Borrowman and Klasen, 2017). Further improvement of women's labor market characteristics will likely have a limited effect in rising FLFP rates, unless accompanied by the removal of barriers and constraints to female employment both at the household and at the labor market level.

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Online Appendix

What Drives Female Labor Force Participation? Comparable Micro-level Evidence from Eight Developing and Emerging Economies

A.1 Data

In this Appendix, we describe in detail the data sources used, the coding procedures that ensure comparability across countries and years, and the limitations of the final dataset. But first we describe three coding procedures that apply to all countries, concerning household income, male salaried employment, and regional employment.

Household income For comparability across surveys, the real earnings variable only considers earnings from the respondent's main job. Income from secondary jobs and non-labor income are not covered. To avoid losing the observations of urban married women living in households where the sum of earnings for all the other adult members is zero, we add one dollar-PPP to all household incomes before the log-transformation. If at least one household member is employed but has missing earnings, we code the household-level earnings variable as missing.

Male salaried employment To capture the existence of a stable male source of income in the household, we would ideally identify male wage employment in the economy's formal sector, since the stability and certainty of formal wage contracts are higher than that of informal labor arrangements. Unfortunately, information of the type of employment sector (formal vs. informal) is not available for several countries. As a second best, we create a household-level dummy variable for the existence of at least one adult (18+) man working as a salaried employee, irrespectively of formality.

Regional employment To create regional employment shares, we use one-digit industrial codes from the surveys. Most surveys follow the international ICIC code classification, although there are a few minor deviations. We re-group the one-digit codes into broader categories: (1) *Construction*, corresponding to "construction"; (2) *Agriculture*, including "agriculture, hunting and forestry" and "fishing"; (3) *Mining*, corresponding to "mining and quarrying"; (4) *Manufacturing*, corresponding to "manufacturing"; (5) *White-collar services*, including "financial intermediation," "real estate, renting and business activities," "public administration and defense; compulsory social security," "education," "health and social work," "extra-territorial organization and bodies"; and (6) *Other services*, including "electricity, gas and water supply," "wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods," "hotels and restaurants," "transport, storage and communication," "other community, social and personal service activities," and "activities of households."

South Africa

For South Africa, we use five nationally representative labor force surveys from Statistics South Africa (StatsSA): the October Household Survey (OHS) in 1995, the Labor Force Survey (LFS) in 2001 and 2003, and the Quarterly Labor Force Survey (QLFS) in 2010 and 2014 (see Table A1). We extract the data from the Post-Apartheid Labour Market Series (PALMS) v3.1, a dataset created by Data First at the University of Cape Town (Kerr *et al.*, 2016), which provides consistent coding for a large number of variables across South African labor force surveys between 1994 and 2015 (Kerr and Wittenberg, 2016). We selected the years as to guarantee a good time coverage, under the constraint that the

relevant set of variables used in the empirical analysis exists in a consistent way across surveys. Between 2004 and 2008, the LFS does not contain urban/rural information and the QLFS does not provide continuous earnings data in 2008, 2009, and 2012. This is why we do not select surveys from those years.

Naturally, the coding of certain variables in the original surveys changes over time.[45] For the years 1995, 2001 and 2003, the urban/rural variable has two possible categories: *urban* or *rural*. For the QLFS 2010 and 2014, the corresponding variable is coded in four categories: urban formal, urban informal, tribal areas, and rural formal. To create a consistent variable, we assign both urban formal and urban informal to the category *urban* and tribal areas and rural formal to the category *rural*.

For the individual-level regressions, we drop the 37 urban married women of age 25–54 whose race category in the LFS 2001 and 2003 is "Other", because this racial category does not occur in any of the other selected years.

We create the highest level of education achieved by recoding the detailed education achievement variables of the PALMS into five broader groups: less than primary; primary completed; secondary not completed; secondary completed; any tertiary. We drop from the analysis the few individuals categorized in the residual educational level "Other". The currently married dummy variable assigns value 1 to persons officially married or "living together as husband and wife".

Until the introduction of the QLFS in 2008, there were two clear definitions of labor force participation. The *strict* definition from the OHS and LFS includes (1) the employed—those who have worked in the week before the survey interview, or are temporarily not working but will return soon (on holidays, sick leave, parental leave, strike, etc)—and (2) the unemployed—those currently without a job but who are willing to accept one within a week from the survey interview and have actively searched for work during the previous month.[46] In the OHS 1995, any positive amount of hours worked in the reference week counts for employment; in the LFS, employment requires a minimum of one hour of work in the reference week. Employment includes all paid employees either in cash or kind, employers and self employed, as well as unpaid workers in family businesses. Unpaid domestic services and begging for money or food do not count as employment. It is clear from the change in survey questionnaires that the LFS is better able to capture informal, casual employment relative to the OHS: there are eight detailed employment categories allowed as answers in the LFS, whereas only three (working full-time, working part-time, with a job but absent from work) are allowed as answers in the OHS. Thus, part of the rise in labor force participation from 1995 to 2001 could reflect improvements in the coverage of casual, low-income employment in the LFS relative to the OHS (Yu, 2007, pp. 17–18). The *expanded* definition is similar to the *strict* one but it additionally includes the discouraged job-seekers in the labor force, as part of the unemployed population. Discouraged job-seekers are those individuals who are currently without a job and, although they desire to work, have not actively searched for a job in the month before the survey interview. Unfortunately, with the introduction of the QLFS, the distinction between the strict and expanded concepts becomes less clear (Yu, 2009; Kerr and Wittenberg, 2016). Yu (2009)

[45] Yu discusses in detail the comparability between the OHS and the LFS (Yu, 2007), and between the LFS and QLFS (Yu, 2009).

[46] Unfortunately, the OHS1995 metadata does not include a detailed explanation on how the employment status is derived from the survey questions (Yu, 2009, pp. 17 & 49–58). However, the derivation of employment is very similar for the later OHS (1996–1999), so we refer to it in the text.

shows that comparability between the last LFS (in 2007) and the first QLFS (in 2008) is much better for the strict definition than for the expanded definition. Accordingly, we consider *strict* labor force status in our analyses.

The household labor income variable is created from the consistent real earnings variable in the PALMS dataset for wage employment and self-employment.[47] However, a substantial fraction (20–30 percent) of employed individuals in the OHS 1995, LFS 2001 and 2003 did not report their earnings as a point value, but rather used the earnings brackets available in the questionnaire. Individuals who are self-employed or in high skilled occupations disproportionately used the bracket option. As a result, creating an household income variable without accounting for bracket responses will underestimate the household incomes of such individuals. As a simple solution, whenever necessary, we impute earnings with the bracket midpoint and, for the top bracket, which is open-ended, we set the midpoint to be 10 percent higher than the lower bound. Von Fintel (2007) shows that, for the LFS, this "simplistic" midpoint imputation performs as well (for purposes of statistical inference) as more complex distributional assumptions (e.g. interval regressions), given that skewness is not too extreme and the share of right-censored observations is not too high.[48] For the years 1995, 2001 and 2003, we calculate the midpoint of the corresponding bracket variable from PALMSv3.1, convert it into monthly earnings and deflate it to 2000 Rands.[49] For the year 2010, Stats SA already imputes refusals and categorical responses; for 2014, only categorical responses are imputed by Stats SA. Unfortunately, the imputation methods used by Stats SA are not described in the surveys' metadata (Kerr and Wittenberg, 2016). After the imputations described, around 7 percent of employed individuals in the pooled sample have missing earnings information. For the household-level income variable, we sum up the earnings of all individuals in the household, with the exception of those households were at least one employed individual has missing earnings, for whom we assign missing household income. Finally, we convert the values to international dollars using the World Bank's 2011 PPP exchange rate for private consumption.

A limitation of the PALMS is the absence of information on the relationships between household members. As a result, there is no information on who is the household head. Given these limitations, we cannot capture the household's lifetime income using the household head's or the husband's education as a proxy. In practice, we use the maximum education level of any adult (18+) married male household member, coding as an explicit missing category those households where no adult married men are listed.

We aggregate employment at the province level by industry using the classification of Klasen and Pieters (2015). For South Africa, this means recoding the PALMS variable *jobindcode*. When in doubt about whether a particular industry should be classified as blue or white collar, the education distribution of urban married female employees was used as an auxiliary tool: thus, the seemingly ambiguous "Services" category in the raw

[47] See Burger and Yu (2006) for more details on constructing a consistent earnings series from the OHS and LFS surveys.

[48] The number of right-censored observations for each wave of the LFS 2001 and 2003 is low, with a minimum of 38 observations in the first wave (March) of LFS 2001 and a maximum of 83 observations in the second wave (September) of LFS 2003.

[49] For the year 1995, the lowest earning bracket for wage employment is too wide (R1 - R999). As a result, all of the observations reporting *daily* earnings and 97.23 percent of the observations reporting *weekly* earnings fall in this category (c.f. with 26 and 0.4 percent of the observations for *monthly* and *yearly* wage earnings). Therefore we do not impute a midpoint value for the 531 observations with daily or weekly reference periods; they are set to missing. We proceed similarly for self-employment earnings.

data was included in the white-collar services category due to the much higher prevalence of highly educated employees (see, e.g., Figure A1a).

For the estimation of population means, average marginal effects of regression covariates, and decomposition analyses, we use the individual cross-entropy weights available in the PALMSv3.1.[50]

Brazil

For Brazil, we use four yearly household surveys called Pesquisa Nacional por Amostra de Domicílios (PNAD) from the Brazilian Institute of Geography and Statistics (IBGE): PNAD 2002, 2005, 2009 and 2013. The surveys are harmonized using the Stata code created by Data Zoom at the PUC-Rio.[51]

A particular feature of the PNAD surveys is the distinction between different family units within a given household (see Alves, 2005). For example, multigenerational households are usually classified as different families living in a single household. We code as currently married family heads and their spouses, including couples who are officially married or living together as husband and wife. Otherwise, for consistency with surveys from the other countries, we construct all household-level variables using the household identifiers, disregarding their sub-classification into families.

There were several education reforms in the past three decades. As a result, some levels of education attainment changed names and duration. We reclassify these different levels into five broader groups: less than primary; elementary (levels 1–4); elementary (levels 5–8); high school completed; any tertiary. We proxy the household's lifetime earnings potential with the education level of the household head, creating an additional missing category for the cases when the married woman is the household head, as her education level is already captured in the own education variable.

There are two reference periods available to define labor force participation: previous week or previous year. For consistency with most of the other countries, we use labor force participation in the week of reference (last week of September) in the empirical analyses.

In the PNAD, employment status covers all individuals of age 10 or above that work in: (1) paid activities; (2) unpaid activities in support of a self-employed or employer household member in the production of primary goods; (3) unpaid activities in support of a religious institution or cooperative; (4) food production and/or construction work for own consumption. In category (1), there is no restriction on the minimum hours worked per week, whereas for the other categories, the individual must work at least one hour in the reference week to be considered employed (IBGE, 2015).

For consistency with data from other countries, we add up real earnings from the individual's main job, excluding the woman's own earnings to construct the household income variable and convert it to 2011 PPP-$ using the World Bank PPP exchange rate for private consumption.

The coding of employment industries follows Klasen and Pieters (2015) and is done at the federal state level.

The PNAD also allows us to partially capture internal migration. We create dummy

[50] Variable `ceweight2`. This is an update by Takwanisa Machemedze at DataFirst, University of Cape Town of the original cross-entropy weights created by Nicola Branson. See Branson and Wittenberg (2014) for details on the cross-entropy approach.

[51] Available at http://www.econ.puc-rio.br/datazoom/english/index.html.

variables recording whether the individual was born in the state of current residence, and whether the individual was born in the municipality of current residence. We use these variables as a rough control for rural-urban migration: to the extent that rural-urban movements cross state or municipal borders, they are captured in our migration variables.

Jordan

For Jordan, we use four Employment and Unemployment Surveys (EUS) collected by Jordan's Department of Statistics and harmonized by the Economic Research Forum (ERF) covering the years 2006, 2008, 2010, and 2014 (OAMDI, 2015a,b,c,d). The surveys are collected on a quarterly basis, resulting in four waves per year. We use all waves available.

Unfortunately, there is no urban/rural information in the EUS for the years 2008 and 2014, so we cannot remove rural households as we do in all other countries. In any case, urbanization rates are very high in Jordan, in the period considered. According to the World Bank's World Development Indicators[52], the urbanization rate was 81 percent in 2006 and 83 percent in 2014.

The variable currently married includes both monogamous and polygamous marriages, although the latter account for only 0.15 percent of the pooled (unweighted) sample. All monogamous marriages are also reported as being legal marriages. Informal marriages and cohabitation outside marriage are both very rare in Jordan.

We recode the detailed education variable provided by the ERF into six broader attainment categories: less than primary completed; primary completed; preparatory completed; lower secondary completed; secondary completed; any tertiary. The lifetime earnings potential of the household is proxied with the education level of the its head, creating an additional missing category for the cases when the married woman is the household head, as her education level is already captured in the own education variable.

All individuals above age 15 are coded as being in the labor force if they were employed for at least one hour in the week before the survey interview, or if they are unemployed (i.e., no current job, but actively searching). Those who have a job but were temporarily absent during the reference week (e.g., on holidays, sick leave, maternal leave, striking) are also part of the employed population. Employment includes employees who work for wage or in-kind payments, employers, self employed, and unpaid workers in family enterprise. Unpaid domestic services or unpaid voluntary work do not count as employment. Those without jobs and not searching one in the reference week are coded as inactive.

The sampling frame and stratification strategy of the EUS changed in the first quarter of 2007. Assaad *et al.* (2014) argues that this change resulted in a break of the female labor force participation series: before 2007, female labor force participation would have been underestimated by around three percentage points. To extend time coverage, we nevertheless include the EUS 2006, which has still conducted under the old methodology.

The EUS only provides categorical earnings data using five earning brackets. During the harmonization of the data, the ERF imputed a continuous earnings variable with the midpoint of each bracket. This imputation procedure is also done for some cases in the South African data, as described above, so we do not modify it. We inflate the earnings from the individual's main job using monthly CPI indexes from the Jordanian Department of Statistics, with 2010 as the base-year. Finally, we sum up the individual real earnings excluding the woman's own earnings to construct the household income

[52] Accessed on November 8, 2017.

variable and convert it to 2011 PPP-$ using the World Bank PPP exchange rate for private consumption.

The coding of employment industries follows Klasen and Pieters (2015). We are able to reclassify the residual category *Other* in the raw data (variable `ind`) into the other more meaningful categories using additional variables with ISIC revision 3, 3-digit codes (variable `ind_isic3_3`) for the years 2006 and 2008, and ISIC revision 4, 3-digit codes (variable `ind_isic4_3`) for the years 2010 and 2014. Employment shares are then aggregated at the governorate level.

Bolivia

For Bolivia, we use the household survey Encuesta de Hogares collected by the Bolivian National Institute of Statistics. We use the years 2000, 2005, 2008, 2011 and 2014.[53]

The variable currently married includes both married couples as well cohabiting couples that are living as husband and wife. We create a consistent educational attainment over time with five categories: less than basic; basic; intermediate; secondary; any tertiary. We proxy the household's lifetime earnings potential with the education level of the household head, creating an additional missing category for the cases when the married woman is the household head, as her education level is already captured in the own education variable.

Unfortunately, it is difficult to construct a consistent ethnicity variable across surveys due to changes in coding and lack of appropriate codebook for the year 2014. We opt for an approximation based on the self-reported languages spoken: we create a dummy dividing the surveyed individuals into those only speaking Spanish, and those speaking Spanish and an Indigenous language. Very few individuals speak no Spanish at all, so we add them to the latter category.

A labor force participant is anyone above age seven who was either employed for at least one hour in the week before the survey interview, or unemployed (i.e., no current job, but actively searching). Employment encompasses the production of goods and services for the market or the production of goods for own consumption. Those who have a job but were temporarily absent during the reference week (e.g., on holidays, sick leave, maternal leave, striking) are also part of the employed population. Unpaid domestic services, voluntary service work or other unpaid work for a salaried family members do not count as employment. Those without jobs and not actively searching are coded as inactive.

The income variable is constructed from individual-level monthly earnings from the main job, as done for the other countries. We recode the missing earnings of unpaid family workers or unpaid apprentices with zero. We then inflate the earnings to 2010 prices. Finally, we sum up the individual real earnings excluding the woman's own earnings to construct the household income variable and convert it to 2011 PPP-$ using the World Bank PPP exchange rate for private consumption.

The coding of employment industries follows Klasen and Pieters (2015) and employment shares are aggregated at the department level.

Although information on rural-urban migration is unavailable, we measure (overall) migration with a dummy variable for whether the woman was living somewhere other than the municipality of current residence, five years before the survey. There is a change in the wording of the question used to derive this dummy variable. In 2000 and 2005,

[53] In 2000, the survey was known as Encuesta Continua de Hogares.

the question asks: *Between [5 years before survey year] and [survey year], did you live somewhere else?* After 2008, the question asks: *Where did you live five years ago?*.

Vietnam

For Vietnam, we use four years of a national representative general purpose household survey: the Vietnam Household Living Standards Survey (VHLSS) 2002, 2006, 2010, and 2014.

For the education variable, we classify the highest completed school grade into five broader education levels, based on the Vietnam education system, namely: less than primary education, completed primary, completed lower secondary, completed high school, and any tertiary education. We proxy the household's lifetime earnings potential with the education level of the household head, creating an additional missing category for the cases when the married woman is the household head, as her education level is already captured in the own education variable.

Vietnam has approximately 56 ethnic groups, but around 88 percent of household heads are Kinh. In our analysis, we create a dummy with two categories: Kinh and non-Kinh.

All individuals aged 10 or older were asked to state whether they had a job in the 12 months before the survey interview. Having a job is defined as working as a wage earner, or being self-employed in agriculture or non-farm activities. Unfortunately, after 2002, we cannot distinguish between those not working but actively searching for a job. That is, we cannot distinguish between the unemployed and the inactive. We thus define labor force participants as those having a job in the previous 12 months. For 2002, however, there is a job search question, so we can construct a labor force participation variable that classifies the unemployed as active. For this year, the difference of participation rate between the two definitions of labor force is very small (around 2 percent). Notice that the reference period for the job question (12 months) is much longer than the reference period in most other countries (usually, one week). Thus, on the one hand, excluding the unemployed from the active population will, in general, underestimate the rate of labor force participation. But, on the other hand, unemployment will be much lower with such a long reference period. In the end, at least for the year 2002, the two effects seem to cancel out.

Whenever employed individuals have missing earnings, we impute them using a simple hotdeck procedure for each year separately based on age (5-years groups, from 16–20 to 61–65, and 65+), gender, educational attainment, and rural/urban. Finally, we sum up the individual real earnings excluding the woman's own earnings to construct the household income variable and convert it to 2011 PPP-$ using the World Bank PPP exchange rate for private consumption.

The coding of employment industries follows Klasen and Pieters (2015) and employment shares are aggregated at the province level.

Tanzania

For Tanzania, we use the Integrated Labour Force Surveys 2000–01, 2005–06 and 2014 collected by the National Bureau of Statistics. These are quarterly surveys and we use all four waves for each year.

The coding of the education variables is slightly different from the one used in other

countries. Given the lower education attainment levels compared with the remaining countries, we do not distinguish between completed and not completed secondary schooling. We create five attainment levels: never attended school; primary not completed; primary completed; any secondary schooling; any tertiary. We proxy the household's lifetime earnings potential with the education level of the household head, creating an additional missing category for the cases when the married woman is the household head, as her education level is already captured in the own education variable.

We did not identify any variable capturing a meaningful social identity (or discriminatory) marker such as the ethnicity or religion markers used for other countries.

A labor force participant is anyone above age 10, in 2000 and 2006, and 15, in 2014, who was either employed for at least one hour in the week before the survey interview, or unemployed (i.e., no current job, but actively searching). Employment is defined as working for cash or in-kind pay, employers and self employed, unpaid family workers in family enterprises, production of primary products for own consumption, or production of other fixed assets (including housing) for own use. Those who have a job but were temporarily absent during the reference week (e.g., on holidays, sick leave, maternal leave, striking) are also part of the employed population. Unpaid domestic services are excluded from this definition. Those without jobs and not actively searching are coded as inactive. Notice that, according to the employment definition above, individuals engaged in subsistence agriculture are part of the labor force. Even in urban areas, agriculture accounts for a substantial share of Tanzanian workers.

The income variable is constructed from individual-level monthly earnings from the main job, as done for the other countries. We recode as zero the missing earnings of unpaid family workers, and farmers reporting no marketed produce. We then inflate the earnings to 2010 prices. Finally, we sum up the individual real earnings excluding the woman's own earnings to construct the household income variable and convert it to 2011 PPP-$ using the World Bank PPP exchange rate for private consumption.

The coding of employment industries follows Klasen and Pieters (2015). We aggregate employment shares at the region level. Due to administrative reforms in 2003 and 2012, new regions were created. In 2014 there were five more regions than in 2000. By merging regions whenever necessary, we obtain administrative units that are consistent over time.

We can identify rural-urban migrants, as well as years since arrival at the urban area. We create two dummy variables distinguishing between rural-urban migrants whose arrival was less than five years before the survey and rural-urban migrants for which more than five years have passed since arrival.

India

For India, we use three rounds of the NSS Employment and Unemployment Survey: round 55, 1999–2000; round 61, 2004–2005, and round 68, 2011–2012. These are three out of the six rounds used by Klasen and Pieters (2015) and, for more details on the data, see their article, including its online appendix.

We code the educational attainment into six categories: illiterate, literate, primary school completed, middle school completed, secondary school completed, any tertiary schooling. We proxy the household's lifetime earnings potential with the education level of the household head, creating an additional missing category for the cases when the married woman is the household head, as her education level is already captured in the

own education variable.

To capture the individual's social group, we create a variable combining religion and caste with four categories: Hindus non-SCST[54]; SCST; Muslim non-SCST; and Other, which is a residual category.

Labor force participation is defined by the individual's main activity status, and its reference period is one year before the interview.

Income is measured as earnings from the main job in the reference week. The earnings of self-employed individuals are missings. We impute them based on the earnings of employees (see Klasen and Pieters, 2015, footnote 11). We convert the individual earnings into monthly earnings and deflate them to 1999–2000 prices using state-specific CPIs (see Klasen and Pieters, 2015, for sources and more details). We then sum up the individual real earnings excluding the woman's own earnings to construct the household income variable and convert it to 2011 PPP-$ using the World Bank PPP exchange rate for private consumption.

As in Klasen and Pieters (2015), we aggregate employment shares at the district level.

Indonesia

For Indonesia, we use the annual national household survey, Susenas, for the years 2000, 2004, 2007, and 2014.

We code the educational attainment into five categories: less than primary, primary completed; junior high school completed; senior high school, and any tertiary schooling. We proxy the household's lifetime earnings potential with the education level of the household head, creating an additional missing category for the cases when the married woman is the household head, as her education level is already captured in the own education variable.

We did not identify any meaningful ethnicity or religion variable that was consistent across survey years.

A labor force participant is anyone above age 10 who, in the week before the interview, (i) has worked any amount of time, or (ii) was temporarily absent from a permanent job, or (iii) did not have a job but has actively searched for one. Those who do not meet any of the conditions above are classified as inactive. In 2004, besides the three conditions for labor force participation defined above, there is an additional question asking whether, in the reference week, the individual (iv) was preparing to start a business. We include (iv) as being part of the labor force. In 2007 and 2014, (iii) and (iv) are included in a single survey question. In 2000, (iv) is not explicitly asked.

In 2000, 2004, and 2007, monthly earnings are missing for the self-employed. We impute them using a simple hotdeck procedure for each year separately based on age (5-years groups, from 16–20 to 61–65, and 65+), gender, educational attainment, rural/urban, and province. Finally, we sum up the individual real earnings excluding the woman's own earnings to construct the household income variable and convert it to 2011 PPP-$ using the World Bank PPP exchange rate for private consumption.

The coding of employment industries follows Klasen and Pieters (2015). We aggregate employment shares at the regency level. We use the borders as of 1998, to obtain units that are consistent over time.

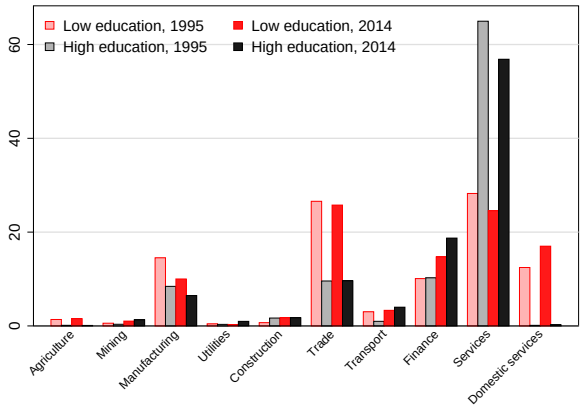
[54]SCST stands for "scheduled castes or scheduled tribes".

A.2 Additional Tables and Figures

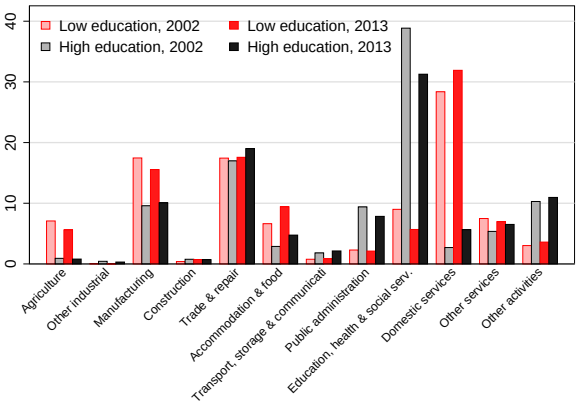
Table A1: Data overview

Country	Year	Survey	$N^{\dagger}$
South Africa:	1995	October Household Survey	8,262
	2001	Labor Force Survey	12,862
	2003	Labor Force Survey	12,050
	2010	Quarterly Labor Force Survey	21,438
	2014	Quarterly Labor Force Survey	20,744
Brazil:	2002	Pesquisa Nacional por Amostra de Domicílios	46,562
	2005	Pesquisa Nacional por Amostra de Domicílios	48,637
	2009	Pesquisa Nacional por Amostra de Domicílios	49,360
	2013	Pesquisa Nacional por Amostra de Domicílios	45,423
Jordan‡*:*	2006	Employment and Unemployment Survey	26,140
	2008	Employment and Unemployment Survey	33,629
	2010	Employment and Unemployment Survey	32,993
	2014	Employment and Unemployment Survey	30,593
India:	1999	NSS Employment and Unemployment Survey	33,507
	2004	NSS Employment and Unemployment Survey	30,489
	2011	NSS Employment and Unemployment Survey	28,252
Bolivia:	2000	Encuesta Continua de Hogares (MECOVI)	1,563
	2005	Encuesta de Hogares	1,283
	2008	Encuesta de Hogares	1,183
	2011	Encuesta de Hogares	3,113
	2014	Encuesta de Hogares	3,863
Indonesia:	2000	Susenas	51,363
	2004	Susenas	73,447
	2007	Susenas	75,713
	2014	Susenas	87,462
Vietnam:	2002	Living Standard Survey	5,281
	2006	Household Living Standard Survey	1,704
	2010	Household Living Standard Survey	1,970
	2014	Household Living Standard Survey	2,043
Tanzania:	2000	Integrated Labour Force Survey	2,051
	2006	Integrated Labour Force Survey	2,899
	2014	Integrated Labour Force Survey	4,325

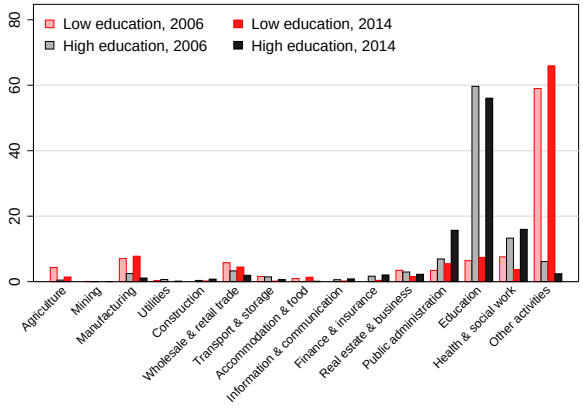
Notes: †Number of observations of urban married women age 25–54. Estimation samples are smaller due to missing covariate data. ‡For Jordan, sample sizes refer to both urban and rural areas.



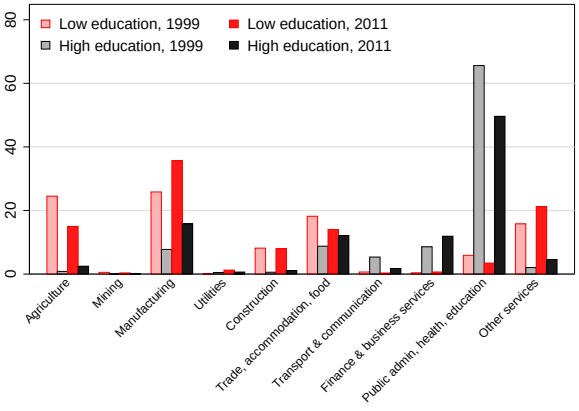
(a) South Africa



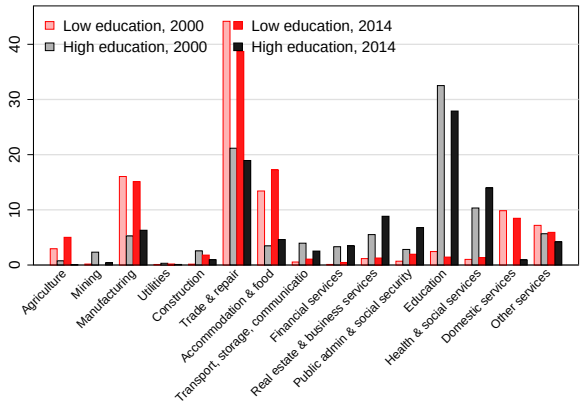
(b) Brazil



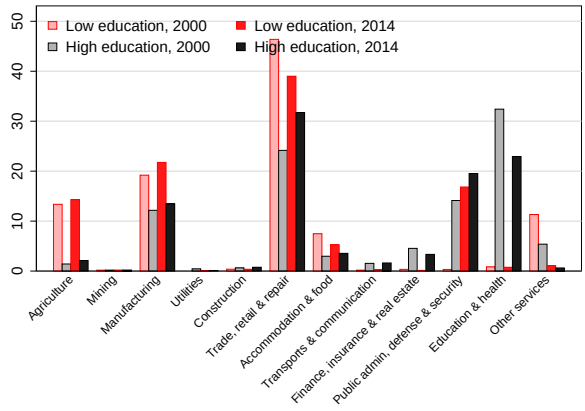
(c) Jordan



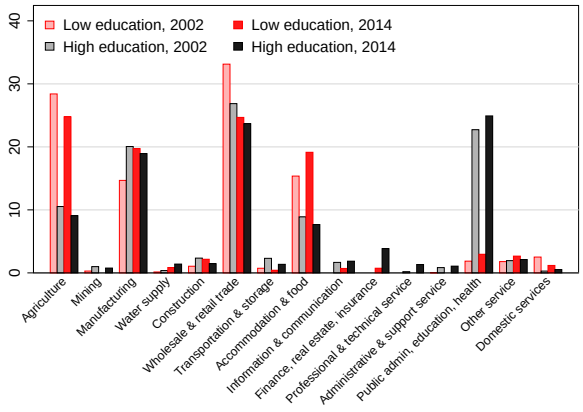
(d) India



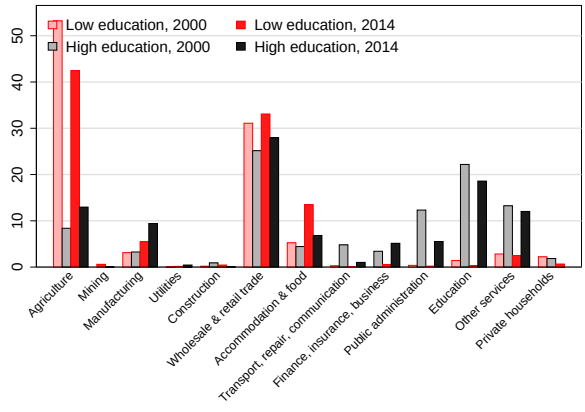
(e) Bolivia



(f) Indonesia



(g) Vietnam



(h) Tanzania

Figure A1: Distribution of female workforce across industries, by education

Notes: See Table A1 for sources. Urban married women (25–54), except urban *and* rural in Jordan; employed only (including self-employed). Low education is below secondary schooling; high education is completed secondary or higher (*any* secondary or higher for Tanzania).

Table A2: South Africa: sample means

	1995	2001	2003	2010	2014
Labor force	0.58	0.68	0.67	0.67	0.68
Own education:					
Less than primary	0.15	0.16	0.15	0.09	0.07
Primary	0.08	0.07	0.06	0.05	0.04
Secondary not completed	0.39	0.37	0.37	0.36	0.35
Secondary completed	0.25	0.24	0.28	0.30	0.33
Tertiary	0.14	0.16	0.15	0.20	0.21
Log income	4.46	3.75	3.50	4.35	4.16
Male salaried emp.	0.77	0.65	0.63	0.66	0.65
Max adult married male education:					
Less than primary	0.14	0.15	0.14	0.09	0.08
Primary	0.05	0.06	0.06	0.04	0.03
Secondary not completed	0.36	0.32	0.32	0.31	0.30
Secondary completed	0.24	0.23	0.25	0.28	0.29
Tertiary	0.16	0.16	0.15	0.19	0.21
Missing: no adult married male	0.05	0.07	0.08	0.08	0.08
Ethnicity:					
Black	0.50	0.56	0.58	0.60	0.62
Coloured	0.15	0.14	0.15	0.15	0.15
Indian/Asian	0.06	0.06	0.06	0.05	0.05
White	0.29	0.23	0.20	0.20	0.18
Age	37.37	37.67	37.81	38.77	38.79
Children 0-4	0.56	0.52	0.50	0.44	0.41
Children 5-14	1.07	0.92	0.90	0.85	0.80
N	7,601	11,361	10,658	20,713	17,890

Table A3: Brazil: sample means

	2002	2005	2009	2013
Labor force	0.62	0.66	0.69	0.67
Own education:				
Less than primary	0.12	0.10	0.07	0.05
Elementary (1-4)	0.33	0.30	0.24	0.19
Elementary (5-8)	0.18	0.18	0.17	0.16
High school	0.23	0.26	0.31	0.35
Tertiary	0.14	0.16	0.20	0.24
Log income	4.90	4.91	5.10	5.27
Male salaried emp.	0.63	0.64	0.67	0.68
Household head education:				
Less than primary	0.13	0.11	0.08	0.05
Elementary (1-4)	0.32	0.30	0.23	0.18
Elementary (5-8)	0.16	0.16	0.14	0.13
High school	0.19	0.21	0.23	0.25
Tertiary	0.13	0.13	0.14	0.16
Missing: woman is hh head	0.06	0.08	0.17	0.23
Ethnicity:				
White	0.61	0.57	0.54	0.51
Black	0.05	0.06	0.07	0.08
Mixed	0.33	0.36	0.38	0.40
Asian	0.01	0.01	0.01	0.01
Indigenous	0.00	0.00	0.00	0.00
Age	37.80	38.14	38.38	38.63
Children 0-4	0.35	0.32	0.29	0.28
Children 5-14	0.92	0.87	0.78	0.71
N	39,193	42,189	42,855	38,596

Table A4: Jordan: sample means

	2006	2008	2010	2014
Labor force	0.12	0.16	0.17	0.15
Own education:				
Less than primary	0.14	0.10	0.09	0.07
Primary	0.14	0.11	0.12	0.12
Preparatory	0.22	0.22	0.19	0.20
Lower secondary	0.09	0.12	0.14	0.18
Secondary	0.16	0.17	0.16	0.14
Tertiary	0.24	0.28	0.30	0.29
Log income	4.30	4.40	4.47	4.12
Male salaried emp.	0.69	0.68	0.67	0.64
Household head education:				
Less than primary	0.11	0.09	0.08	0.06
Primary	0.15	0.12	0.12	0.13
Preparatory	0.26	0.27	0.25	0.26
Lower secondary	0.03	0.06	0.08	0.13
Secondary	0.15	0.15	0.14	0.13
Tertiary	0.27	0.29	0.30	0.26
Missing: woman is hh head	0.02	0.03	0.03	0.03
Nationality:				
Jordan	0.94	0.92	0.91	0.90
Iraq	0.01	0.02	0.01	0.01
Syria	0.01	0.01	0.01	0.06
Egypt	0.01	0.01	0.01	0.01
Other Arab countries	0.02	0.02	0.02	0.01
Other non-Arab countries	0.02	0.03	0.03	0.02
Age	37.41	37.31	37.39	37.82
Children 0-4	0.80	0.78	0.78	0.65
Children 5-14	1.90	1.74	1.63	1.55
N	25,834	33,219	32,691	30,458

Table A5: India: sample means

	1999	2004	2011
Labor force	0.18	0.21	0.18
Own education:			
Illiterate	0.32	0.28	0.22
Literate	0.08	0.07	0.07
Primary	0.12	0.13	0.11
Middle school	0.14	0.16	0.15
Secondary	0.21	0.22	0.27
Tertiary	0.13	0.14	0.18
Log income	4.11	4.22	4.60
Male salaried emp.	0.48	0.45	0.45
Household head education:			
Illiterate	0.18	0.16	0.14
Literate	0.10	0.09	0.08
Primary	0.11	0.13	0.11
Middle school	0.15	0.15	0.15
Secondary	0.26	0.27	0.29
Tertiary	0.18	0.17	0.21
Missing: woman is hh head	0.02	0.03	0.02
Social group:			
Hindu non-SCST	0.65	0.65	0.65
SCST	0.17	0.17	0.16
Muslim	0.14	0.14	0.15
Other	0.05	0.05	0.04
Age	36.13	36.68	36.86
Children 0-4	0.53	0.49	0.39
Children 5-14	1.37	1.20	1.04
N	33,462	30,463	28,247

Table A6: Bolivia: sample means

	2000	2005	2008	2011	2014
Labor force	0.67	0.63	0.68	0.66	0.64
Own education:					
Less than basic	0.25	0.27	0.20	0.18	0.17
Basic	0.19	0.18	0.16	0.15	0.15
Intermediate	0.18	0.17	0.18	0.16	0.16
Secondary completed	0.16	0.18	0.22	0.19	0.24
Tertiary	0.22	0.20	0.24	0.31	0.28
Log income	4.79	4.70	4.85	5.04	5.11
Male salaried emp.	0.53	0.57	0.54	0.56	0.52
Household head education:					
Less than basic	0.12	0.14	0.11	0.10	0.10
Basic	0.18	0.17	0.14	0.14	0.14
Intermediate	0.21	0.20	0.19	0.19	0.17
Secondary completed	0.17	0.18	0.22	0.20	0.21
Tertiary	0.26	0.22	0.25	0.30	0.27
Missing: woman is hh head	0.06	0.08	0.09	0.07	0.11
Language:					
Spanish only	0.47	0.47	0.52	0.53	0.54
Other	0.53	0.53	0.48	0.47	0.46
Age	37.74	38.05	37.69	37.67	37.78
Children 0-4	0.61	0.54	0.53	0.52	0.56
Children 5-14	1.45	1.30	1.23	1.21	1.12
N	1,517	1,245	1,151	3,057	3,771

Table A7: Indonesia: sample means

	2000	2004	2007	2014
Labor force	0.39	0.37	0.49	0.53
Own education:				
Less than primary	0.19	0.16	0.13	0.11
Primary	0.31	0.30	0.28	0.24
Junior high school	0.17	0.19	0.19	0.20
Secondary completed	0.26	0.28	0.29	0.32
Tertiary	0.07	0.08	0.12	0.14
Log income	3.95	4.35	4.30	4.64
Male salaried emp.	0.57	0.53	0.58	0.59
Household head education:				
Less than primary	0.16	0.14	0.13	0.12
Primary	0.27	0.25	0.24	0.22
Junior high school	0.16	0.17	0.17	0.17
Secondary completed	0.30	0.32	0.32	0.34
Tertiary	0.10	0.11	0.13	0.13
Missing: woman is hh head	0.01	0.01	0.01	0.02
Age	37.04	37.24	37.78	37.99
Children 0-4	0.43	0.43	0.45	0.45
Children 5-14	1.04	0.99	0.96	0.93
N	50,243	69,311	74,896	86,076

Table A8: Vietnam: sample means

	2002	2006	2010	2014
Labor force	0.86	0.86	0.85	0.87
Own education:				
Less than primary	0.13	0.11	0.08	0.09
Primary	0.22	0.22	0.22	0.18
Secondary	0.25	0.22	0.22	0.22
High school	0.31	0.35	0.29	0.27
Tertiary	0.10	0.09	0.19	0.24
Log income	3.97	4.39	4.72	4.96
Male salaried emp.	0.62	0.63	0.62	0.62
Household head education:				
Less than primary	0.14	0.13	0.10	0.10
Primary	0.17	0.15	0.14	0.15
Secondary	0.17	0.17	0.17	0.18
High school	0.20	0.26	0.25	0.25
Tertiary	0.10	0.09	0.15	0.15
Missing: woman is hh head	0.22	0.20	0.19	0.17
Ethnicity:				
Kinh	0.95	0.94	0.95	0.94
Other	0.05	0.06	0.05	0.06
Age	39.02	40.29	39.10	39.59
Children 0-4	0.29	0.30	0.39	0.40
Children 5-14	0.98	0.80	0.66	0.71
N	5,252	1,685	1,936	2,040

Table A9: Tanzania: sample means

	2000	2006	2014
Labor force	0.86	0.93	0.81
Own education:			
No schooling	0.12	0.09	0.07
Less than primary	0.13	0.07	0.06
Primary completed	0.62	0.68	0.64
Any secondary	0.12	0.15	0.17
Tertiary	0.00	0.01	0.05
Log income	3.05	3.72	3.44
Male salaried emp.	0.43	0.42	0.36
Household head education:			
No schooling	0.06	0.04	0.04
Less than primary	0.16	0.08	0.07
Primary completed	0.51	0.54	0.54
Any secondary	0.18	0.23	0.21
Tertiary	0.03	0.02	0.09
Missing: woman is hh head	0.06	0.09	0.06
Age	35.32	34.77	35.52
Children 0-4	0.95	0.73	0.76
Children 5-14	2.14	1.33	1.32
N	1,708	1,947	4,246

Table A10: South Africa: average marginal effects

Pr(Labor force)	1995	2001	2003	2010	2014
Own education (Ref. = Less than primary)					
Primary	0.038	0.021	0.035	0.050**	0.037
	(0.033)	(0.018)	(0.026)	(0.025)	(0.023)
Secondary not completed	0.119***	0.075***	0.048***	0.070***	0.102***
	(0.015)	(0.019)	(0.011)	(0.023)	(0.025)
Secondary completed	0.265***	0.186***	0.194***	0.212***	0.213***
	(0.018)	(0.021)	(0.018)	(0.022)	(0.034)
Tertiary	0.431***	0.333***	0.363***	0.388***	0.379***
	(0.025)	(0.023)	(0.026)	(0.019)	(0.027)
Log income	-0.013***	-0.008***	-0.013***	-0.009***	-0.003
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
Male salaried emp.	0.035***	-0.030***	0.007	0.007	0.017
	(0.011)	(0.009)	(0.009)	(0.009)	(0.011)
Max adult married male education (Ref. = Less than primary)					
Primary	0.010	0.035***	0.033	0.011	0.021
	(0.018)	(0.009)	(0.023)	(0.018)	(0.029)
Secondary not completed	-0.023	0.028	0.007	0.004	0.030
	(0.018)	(0.021)	(0.011)	(0.018)	(0.023)
Secondary completed	0.012	0.038	0.032	0.023*	-0.004
	(0.020)	(0.024)	(0.023)	(0.014)	(0.042)
Tertiary	-0.046	0.025	-0.025	-0.032**	-0.025
	(0.030)	(0.018)	(0.030)	(0.016)	(0.037)
Missing: no adult married male	0.097***	0.058**	0.058**	0.029	0.001
	(0.024)	(0.024)	(0.024)	(0.027)	(0.035)
Ethnicity (Ref. = Black)					
Coloured	-0.025	-0.033***	-0.005	-0.018	-0.037*
	(0.022)	(0.010)	(0.016)	(0.022)	(0.021)
Indian/Asian	-0.220***	-0.219***	-0.216***	-0.138***	-0.225***
	(0.014)	(0.008)	(0.020)	(0.026)	(0.031)
White	-0.121***	-0.121***	-0.120***	-0.040**	-0.099***
	(0.012)	(0.017)	(0.016)	(0.019)	(0.018)
Age	-0.002	-0.002**	-0.002	-0.003***	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Children 0-4	-0.040***	-0.049***	-0.034***	-0.074***	-0.052***
	(0.005)	(0.007)	(0.008)	(0.008)	(0.008)
Children 5-14	-0.019***	-0.014***	-0.009**	-0.014***	-0.023***
	(0.004)	(0.005)	(0.004)	(0.004)	(0.005)
Survey wave fixed effects	Yes	Yes	Yes	Yes	Yes
Province fixed effects	Yes	Yes	Yes	Yes	Yes
N	7,601	11,361	10,658	20,713	17,890
Pseudo R-squared	0.081	0.076	0.076	0.083	0.067
FLFP-(sample)	0.557	0.679	0.663	0.654	0.676
FLFP-(survey weighted)	0.585	0.682	0.669	0.667	0.681

Table A11: Brazil: average marginal effects

Pr(Labor force)	2002	2005	2009	2013
Own education (Ref. = Less than primary)				
Elementary (1-4)	0.021**	0.034**	0.042***	0.065***
	(0.010)	(0.013)	(0.007)	(0.015)
Elementary (5-8)	0.065***	0.080***	0.088***	0.118***
	(0.010)	(0.012)	(0.013)	(0.016)
High school	0.174***	0.177***	0.155***	0.174***
	(0.015)	(0.011)	(0.015)	(0.011)
Tertiary	0.365***	0.349***	0.314***	0.345***
	(0.013)	(0.012)	(0.011)	(0.013)
Log income	-0.006***	-0.005**	-0.006*	0.002*
	(0.001)	(0.002)	(0.003)	(0.001)
Male salaried emp.	-0.016***	-0.022***	-0.011	-0.005
	(0.006)	(0.006)	(0.009)	(0.005)
Household head education (Ref. = Less than primary)				
Elementary (1-4)	-0.003	-0.018**	0.002	0.003
	(0.007)	(0.008)	(0.011)	(0.012)
Elementary (4-8)	-0.011	-0.014**	0.018	0.006
	(0.008)	(0.007)	(0.014)	(0.013)
High school	-0.042***	-0.050***	-0.006	0.002
	(0.005)	(0.010)	(0.021)	(0.016)
Tertiary	-0.101***	-0.119***	-0.041***	-0.052**
	(0.014)	(0.011)	(0.013)	(0.020)
Missing: woman is hh head	0.113***	0.072***	0.046***	0.016
	(0.009)	(0.008)	(0.012)	(0.020)
Ethnicity (Ref. = White)				
Black	0.096***	0.063***	0.054***	0.051***
	(0.014)	(0.012)	(0.010)	(0.011)
Mixed	0.041***	0.015**	0.030***	0.012***
	(0.013)	(0.006)	(0.004)	(0.004)
Asian	0.006	0.038	-0.068*	-0.002
	(0.033)	(0.023)	(0.037)	(0.037)
Indigenous	0.002	0.069	0.093*	0.026
	(0.047)	(0.074)	(0.050)	(0.047)
Age	-0.005***	-0.006***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
Children 0-4	-0.080***	-0.085***	-0.082***	-0.093***
	(0.008)	(0.005)	(0.005)	(0.006)
Children 5-14	-0.016***	-0.018***	-0.015***	-0.026***
	(0.004)	(0.003)	(0.003)	(0.003)
State fixed effects	Yes	Yes	Yes	Yes
N	39,193	42,189	42,855	38,596
Pseudo R-squared	0.067	0.067	0.063	0.068
FLFP-(sample)	0.626	0.662	0.690	0.677
FLFP-(survey weighted)	0.621	0.657	0.686	0.675

Table A12: Jordan: average marginal effects

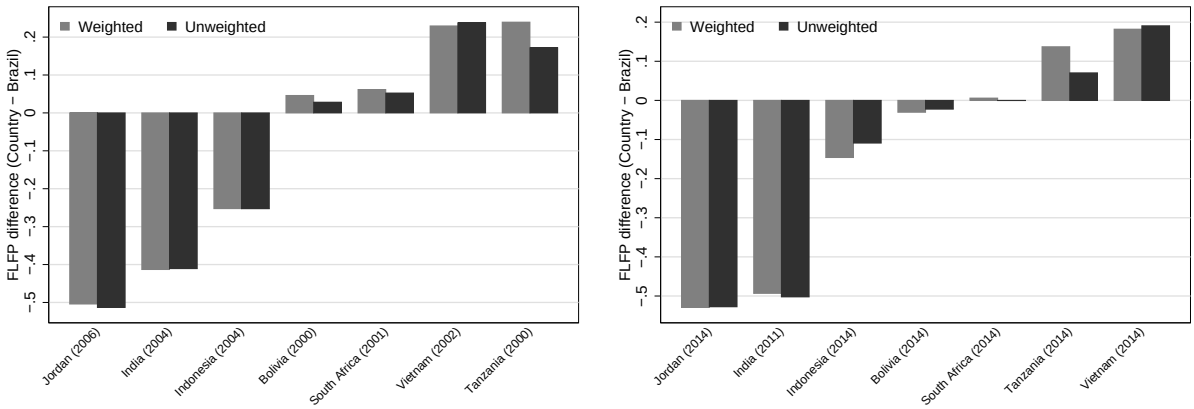
Pr(Labor force)	2006	2008	2010	2014
Own education (Ref. = Less than primary)				
Primary	-0.002	0.000	0.005	0.008
	(0.006)	(0.004)	(0.008)	(0.009)
Preparatory	0.000	-0.019	-0.020	-0.009
	(0.006)	(0.011)	(0.016)	(0.011)
Lower secondary	-0.009	-0.026***	-0.038**	-0.018*
	(0.008)	(0.010)	(0.017)	(0.011)
Secondary	0.029***	0.009	0.011	0.014
	(0.010)	(0.014)	(0.020)	(0.016)
Tertiary	0.269***	0.273***	0.257***	0.273***
	(0.017)	(0.035)	(0.042)	(0.021)
Log income	-0.004**	-0.003***	-0.002***	-0.006**
	(0.002)	(0.001)	(0.001)	(0.002)
Male salaried emp.	0.009	0.010	0.019***	0.012**
	(0.006)	(0.012)	(0.006)	(0.005)
Household head education (Ref. = Less than primary)				
Primary	0.004	-0.006	0.008*	-0.014**
	(0.010)	(0.006)	(0.004)	(0.007)
Preparatory	0.003	0.013	0.024***	-0.008
	(0.015)	(0.010)	(0.007)	(0.011)
Lower secondary	0.014	0.014	0.018*	-0.008
	(0.012)	(0.018)	(0.010)	(0.009)
Secondary	0.009	0.018*	0.024	-0.000
	(0.012)	(0.010)	(0.017)	(0.012)
Tertiary	0.028**	0.041***	0.046***	0.013
	(0.014)	(0.010)	(0.014)	(0.011)
Missing: woman is hh head	-0.000	0.038**	0.051***	0.011
	(0.017)	(0.017)	(0.017)	(0.022)
Nationality (Ref. = Jordan)				
Iraq	-0.060***	-0.094***	-0.125***	-0.122***
	(0.018)	(0.004)	(0.003)	(0.002)
Syria	-0.030*	-0.069***	-0.110***	-0.097***
	(0.018)	(0.023)	(0.033)	(0.011)
Egypt	-0.067***	-0.039***	-0.059***	-0.092***
	(0.015)	(0.010)	(0.020)	(0.025)
Other Arab countries	0.027*	-0.043***	0.026	-0.030**
	(0.014)	(0.011)	(0.036)	(0.014)
Other non-Arab countries	0.688***	0.590***	0.624***	0.659***
	(0.058)	(0.039)	(0.020)	(0.016)
Age	-0.002***	-0.003***	-0.003***	-0.002**
	(0.000)	(0.000)	(0.001)	(0.001)
Children 0-4	-0.022***	-0.020***	-0.027***	-0.017***
	(0.006)	(0.003)	(0.007)	(0.001)
Children 5-14	-0.017***	-0.021***	-0.021***	-0.012***
	(0.001)	(0.002)	(0.001)	(0.002)
Survey wave fixed effects	Yes	Yes	Yes	Yes
Governorate fixed effects	Yes	Yes	Yes	Yes
N	25,834	33,219	32,691	30,458
Pseudo R-squared	0.308	0.308	0.302	0.335
FLFP-(sample)	0.113	0.152	0.166	0.149
FLFP-(survey weighted)	0.117	0.158	0.171	0.146

Table A13: India: average marginal effects

Pr(Labor force)	1999	2004	2011
Own education (Ref. = Illiterate)			
Literate	-0.065***	-0.054***	-0.023**
	(0.016)	(0.016)	(0.012)
Primary	-0.081***	-0.067***	-0.031***
	(0.015)	(0.021)	(0.009)
Middle school	-0.090***	-0.110***	-0.068***
	(0.010)	(0.015)	(0.012)
Secondary	-0.025***	-0.054***	-0.048***
	(0.009)	(0.013)	(0.013)
Tertiary	0.206***	0.131***	0.140***
	(0.014)	(0.027)	(0.020)
Log income	-0.013***	-0.026***	-0.015***
	(0.002)	(0.005)	(0.004)
Male salaried emp.	-0.038***	-0.022**	-0.010
	(0.011)	(0.009)	(0.012)
Household head education (Ref. = Illiterate)			
Literate	-0.048**	-0.042***	0.016
	(0.021)	(0.015)	(0.017)
Primary	-0.081***	-0.054***	-0.059**
	(0.013)	(0.016)	(0.026)
Middle school	-0.120***	-0.078***	-0.083***
	(0.010)	(0.011)	(0.014)
Secondary	-0.155***	-0.125***	-0.104***
	(0.009)	(0.011)	(0.011)
Tertiary	-0.161***	-0.117***	-0.133***
	(0.017)	(0.017)	(0.020)
Missing: woman is hh head	0.037	-0.020	-0.030
Social group (Ref.= Hindu non-SCST)			
SCST	0.059***	0.037**	0.034***
	(0.016)	(0.018)	(0.012)
Muslim	-0.071***	-0.093***	-0.084***
	(0.016)	(0.014)	(0.012)
Other	0.009	0.000	0.034
	(0.015)	(0.011)	(0.021)
	(0.039)	(0.040)	(0.021)
Age	0.003***	0.001**	-0.000
	(0.001)	(0.001)	(0.001)
Children 0-4	-0.017***	-0.024***	-0.039***
	(0.004)	(0.005)	(0.009)
Children 5-14	-0.000	0.009***	0.007*
	(0.003)	(0.003)	(0.004)
State fixed effects	Yes	Yes	Yes
N	33,462	30,463	28,247
Pseudo R-squared	0.124	0.123	0.092
FLFP-(sample)	0.179	0.216	0.175
FLFP-(survey weighted)	0.184	0.208	0.182

Table A14: Bolivia: average marginal effects

Pr(Labor force)	2000	2005	2008	2011	2014
Own education (Ref. = Less than basic)					
Basic	0.073	0.014	-0.040	0.008	0.016
	(0.091)	(0.073)	(0.045)	(0.027)	(0.023)
Intermediate	0.101	0.037	0.019	0.040	0.054*
	(0.063)	(0.040)	(0.037)	(0.030)	(0.030)
Secondary completed	0.117	0.076	-0.019	-0.010	0.015
	(0.081)	(0.056)	(0.024)	(0.023)	(0.016)
Tertiary	0.177**	0.216***	0.149***	0.178***	0.229***
	(0.085)	(0.073)	(0.054)	(0.041)	(0.025)
Log income	-0.048***	-0.039***	-0.044***	-0.038***	-0.025***
	(0.011)	(0.009)	(0.013)	(0.013)	(0.003)
Male salaried emp.	-0.044*	-0.100***	-0.064	-0.082***	-0.040***
	(0.024)	(0.031)	(0.043)	(0.016)	(0.015)
Household head education (Ref. = Less than basic)					
Basic	-0.059	0.020	-0.001	-0.062**	-0.003
	(0.081)	(0.072)	(0.026)	(0.028)	(0.019)
Intermediate	-0.002	0.016	-0.047	-0.083**	-0.058
	(0.076)	(0.083)	(0.033)	(0.036)	(0.048)
Secondary completed	-0.030	0.012	-0.082	-0.081***	-0.014
	(0.064)	(0.043)	(0.052)	(0.031)	(0.019)
Tertiary	-0.004	0.005	-0.104**	-0.065**	-0.060**
	(0.123)	(0.082)	(0.050)	(0.031)	(0.027)
Missing: woman is hh head	0.006	-0.015	-0.093	-0.073	0.052
	(0.100)	(0.063)	(0.077)	(0.052)	(0.033)
Language (Ref. = Spanish only)					
Other	0.116***	0.060	0.044**	0.080***	0.063*
	(0.028)	(0.040)	(0.020)	(0.014)	(0.034)
Age	-0.000	0.007***	0.003	0.004**	0.005***
	(0.003)	(0.001)	(0.002)	(0.002)	(0.001)
Children 0-4	-0.059***	-0.037***	-0.068***	-0.085***	-0.069***
	(0.018)	(0.009)	(0.024)	(0.010)	(0.009)
Children 5-14	-0.014	-0.011	0.013	-0.014***	-0.004
	(0.023)	(0.010)	(0.010)	(0.005)	(0.011)
Department fixed effects	Yes	Yes	Yes	Yes	Yes
N	1,517	1,245	1,151	3,057	3,771
Pseudo R-squared	0.075	0.086	0.084	0.075	0.073
FLFP-(sample)	0.655	0.652	0.667	0.661	0.654
FLFP-(survey weighted)	0.667	0.629	0.676	0.659	0.645



(a) Brazil: 2002; closest year for other countries.

(b) Brazil: 2013; closest year for other countries.

Figure A2: FLFP differences with respect to Brazil: with and without survey weights

Notes: See Table A1 for sources. Urban married women, ages 25-54. Except for Jordan: urban and rural areas.

Table A15: Indonesia: average marginal effects

Pr(Labor force)	2000	2004	2007	2014
Own education (Ref. = Less than primary)				
Primary	-0.016	-0.005	-0.019	-0.006
	(0.015)	(0.007)	(0.012)	(0.009)
Junior high school	-0.049**	-0.016**	-0.031**	-0.008
	(0.024)	(0.008)	(0.012)	(0.008)
Secondary completed	0.065**	0.062***	0.016	0.014
	(0.030)	(0.013)	(0.014)	(0.013)
Tertiary	0.360***	0.416***	0.287***	0.299***
	(0.043)	(0.024)	(0.015)	(0.014)
Log income	-0.033***	-0.077***	-0.074***	-0.067***
	(0.004)	(0.002)	(0.005)	(0.005)
Male salaried emp.	-0.027***	-0.030***	-0.053***	-0.041***
	(0.007)	(0.008)	(0.005)	(0.006)
Household head education (Ref. = Less than primary)				
Primary	-0.034***	-0.015***	-0.016***	-0.014***
	(0.009)	(0.006)	(0.006)	(0.003)
Junior high school	-0.081***	-0.043***	-0.022***	-0.009
	(0.014)	(0.005)	(0.007)	(0.009)
Secondary completed	-0.081***	-0.064***	-0.041***	-0.017
	(0.011)	(0.007)	(0.006)	(0.011)
Tertiary	-0.094***	-0.045***	-0.022**	-0.028*
	(0.019)	(0.012)	(0.011)	(0.015)
Missing: woman is hh head	0.134***	-0.015	-0.090***	-0.098***
	(0.031)	(0.049)	(0.022)	(0.017)
Age	0.003***	0.003***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Children 0-4	-0.065***	-0.080***	-0.082***	-0.097***
	(0.009)	(0.010)	(0.005)	(0.007)
Children 5-14	-0.019***	-0.030***	-0.036***	-0.027***
	(0.005)	(0.005)	(0.005)	(0.005)
Province fixed effects	Yes	Yes	Yes	Yes
N	50,243	69,311	74,896	86,076
Pseudo R-squared	0.086	0.109	0.081	0.076
FLFP-(sample)	0.399	0.374	0.489	0.568
FLFP-(survey weighted)	0.386	0.368	0.489	0.529

Table A16: Vietnam: average marginal effects

Pr(Labor force)	2002	2006	2010	2014
Own education (Ref. = Less than primary)				
Primary	0.033	0.095***	-0.017	0.021
	(0.023)	(0.028)	(0.037)	(0.028)
Secondary	0.056	0.016	-0.016	-0.029
	(0.035)	(0.035)	(0.040)	(0.030)
High school	0.102***	0.074**	0.070*	0.044
	(0.033)	(0.030)	(0.036)	(0.039)
Tertiary	0.152***	0.167***	0.142***	0.141***
	(0.031)	(0.038)	(0.041)	(0.033)
Log income	-0.014**	0.014*	-0.010	-0.005
	(0.006)	(0.009)	(0.006)	(0.009)
Male salaried emp.	0.009	-0.002	-0.026**	-0.001
	(0.012)	(0.017)	(0.013)	(0.016)
Household head education (Ref. = Less than primary)				
Primary	-0.002	0.065**	-0.018	-0.004
	(0.015)	(0.026)	(0.031)	(0.026)
Secondary	0.020	0.055***	0.039	0.007
	(0.014)	(0.021)	(0.044)	(0.030)
High school	-0.018	0.023	-0.023	-0.010
	(0.016)	(0.025)	(0.052)	(0.035)
Tertiary	-0.073**	-0.003	-0.020	-0.061
	(0.029)	(0.069)	(0.031)	(0.043)
Missing: woman is hh head	-0.024	0.071**	-0.018	0.003
	(0.020)	(0.028)	(0.026)	(0.038)
Ethnicity (Ref. = Kinh)				
Other	-0.027	0.003	-0.016	-0.049
	(0.036)	(0.032)	(0.023)	(0.057)
Age	-0.001	-0.003*	-0.005**	-0.004***
	(0.001)	(0.002)	(0.002)	(0.001)
Children 0-4	-0.010	-0.041*	-0.054***	-0.062***
	(0.016)	(0.022)	(0.016)	(0.020)
Children 5-14	0.005	0.009	0.011	-0.010
	(0.006)	(0.011)	(0.011)	(0.012)
Province fixed effects	Yes	Yes	Yes	Yes
N	4,938	1,264	1,751	1,737
Pseudo R-squared	0.117	0.123	0.143	0.126
FLFP-(sample)	0.864	0.839	0.860	0.868
FLFP-(survey weighted)	0.850	0.829	0.838	0.857

Table A17: Tanzania: average marginal effects

Pr(Labor force)	2000	2006	2014
Own education (Ref. = No schooling)			
Less than primary	0.042	0.030	-0.000
	(0.043)	(0.022)	(0.042)
Primary completed	0.062**	0.027*	0.045
	(0.025)	(0.016)	(0.028)
Any secondary	0.110***	0.023	0.093***
	(0.017)	(0.023)	(0.029)
Tertiary	0.129***	-0.133	0.150**
	(0.021)	(0.133)	(0.065)
Log income	-0.057***	-0.009***	-0.019***
	(0.009)	(0.003)	(0.007)
Male salaried emp.	0.025	0.002	-0.004
	(0.019)	(0.013)	(0.014)
Household head education (Ref. = No schooling)			
Less than primary	0.038	-0.027	-0.017
	(0.052)	(0.019)	(0.046)
Primary completed	0.079	-0.023	-0.052
	(0.055)	(0.023)	(0.039)
Any secondary	0.079	-0.028	-0.004
	(0.050)	(0.029)	(0.045)
Tertiary	0.114***	0.030	0.000
	(0.043)	(0.049)	(0.054)
Missing: woman is hh head	-0.046	0.028	0.084***
	(0.084)	(0.028)	(0.029)
Age	0.003*	-0.000	0.006***
	(0.001)	(0.001)	(0.001)
Children 0-4	-0.013	-0.001	-0.027**
	(0.008)	(0.009)	(0.011)
Children 5-14	-0.002	-0.001	0.004
	(0.005)	(0.003)	(0.007)
Region fixed effects	Yes	Yes	Yes
Survey wave fixed effects	Yes	Yes	Yes
N	1,708	1,947	4,246
Pseudo R-squared	0.150	0.104	0.170
FLFP-(sample)	0.798	0.923	0.747
FLFP-(survey weighted)	0.860	0.926	0.812

Table A18: Trends in sample inclusion criteria over time

South Africa	1995	2001	2003	2010	2014
Women (25-54): share currently married:					
Urban	0.66	0.56	0.56	0.54	0.51
Rural	0.64	0.56	0.55	0.45	0.41
Women (25-54): share in urban areas:					
Married	0.55	0.63	0.62	0.71	0.73
Not married	0.53	0.63	0.61	0.63	0.64
Brazil	2002†	2005	2009	2013	
Women (25-54): share currently married:					
Urban	0.67	0.66	0.65	0.64	
Rural	0.82	0.81	0.81	0.80	
Women (25-54): share in urban areas:					
Married	0.85	0.83	0.84	0.85	
Not married	0.93	0.92	0.92	0.93	
Bolivia	2000	2005	2008	2011	2014
Women (25-54): share currently married:					
Urban	0.74	0.74	0.71	0.71	0.70
Rural	0.84	0.83	0.81	0.84	0.83
Women (25-54): share in urban areas:					
Married	0.66	0.67	0.67	0.68	0.70
Not married	0.78	0.78	0.79	0.82	0.83
India	1999	2004	2011		
Women (25-54): share currently married:					
Urban	0.89	0.88	0.88		
Rural	0.91	0.91	0.92		
Women (25-54): share in urban areas:					
Married	0.26	0.26	0.29		
Not married	0.29	0.31	0.40		
Indonesia	2000	2004	2007	2014	
Women (25-54): share currently married:					
Urban	0.81	0.83	0.83	0.85	
Rural	0.87	0.88	0.88	0.89	
Women (25-54): share in urban areas:					
Married	0.42	0.43	0.44	0.50	
Not married	0.53	0.53	0.54	0.59	
Vietnam	2002	2006	2010	2014	
Women (25-54): share currently married:					
Urban	0.79	0.78	0.80	0.82	
Rural	0.85	0.85	0.86	0.87	
Women (25-54): share in urban areas:					
Married	0.25	0.27	0.31	0.32	
Not married	0.34	0.38	0.41	0.41	
Tanzania	2000	2006	2014		
Women (25-54): share currently married:					
Urban	0.67	0.67	0.67		
Rural	0.81	0.78	0.76		
Women (25-54): share in urban areas:					
Married	0.20	0.26	0.37		
Not married	0.34	0.38	0.49		
Jordan	2006	2008	2010	2014	
Women (25-54): share currently married:					
Urban and rural	0.77	0.77	0.79	0.80	

Sources: See Table A1. *Notes:* †Before 2004, the Brazilian PNAD does not include rural municipalities of the North Region.

Table A19: India and Jordan: decomposition of FLFP

	India		Jordan	
Pr(Labor force) last year	0.182	$N = 28,247$	0.146	$N = 30,458$
Pr(Labor force) first year	0.184	$N = 33,462$	0.117	$N = 25,834$
Difference	-0.002		0.029	
	At 1999 coeff.	At 2011 coeff.	At 2006 coeff.	At 2014 coeff.
Own education	0.010***	0.004*	0.012***	0.013***
	(0.002)	(0.002)	(0.001)	(0.001)
Log income	-0.007***	-0.008***	0.001**	0.000
	(0.001)	(0.002)	(0.000)	(0.000)
Male salaried emp.	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Household head education	-0.012***	-0.009***	0.001	-0.000
	(0.002)	(0.001)	(0.001)	(0.001)
Social group	-0.001*	-0.001	0.005***	0.003***
	(0.001)	(0.001)	(0.001)	(0.000)
Age	0.001*	-0.001	-0.003***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Children	0.002**	0.002	0.009***	0.006***
	(0.001)	(0.002)	(0.001)	(0.001)
Region dummies	0.002***	0.002**	0.002***	0.003***
	(0.001)	(0.001)	(0.000)	(0.001)
Survey wave dummies			-0.006*	0.001
			(0.003)	(0.004)
Total covariates	-0.005	-0.011	0.020	0.023
Coefficients & unobservables	0.003	0.009	0.009	0.006
N	61,709	61,709	56,292	56,292

Table A20: Brazil and South Africa: decomposition of FLFP

	Brazil		South Africa	
Pr(Labor force) last year	0.675	$N = 38,596$	0.681	$N = 17,890$
Pr(Labor force) first year	0.621	$N = 39,193$	0.682	$N = 11,361$
Difference	0.054		-0.002	
	At 2002 coeff.	At 2013 coeff.	At 2001 coeff.	At 2014 coeff.
Own education	0.053***	0.045***	0.029***	0.034***
	(0.002)	(0.002)	(0.002)	(0.003)
Log income	-0.002***	0.001	-0.003***	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Male salaried emp.	-0.001***	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Household head education	0.012***	0.001	0.003	-0.003
	(0.001)	(0.003)	(0.002)	(0.004)
Social group	0.005***	0.002***	0.009***	0.009***
	(0.001)	(0.000)	(0.001)	(0.001)
Age	-0.006***	-0.005***	-0.005***	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Children	0.009***	0.013***	0.007***	0.009***
	(0.001)	(0.001)	(0.001)	(0.001)
Region dummies	0.000**	0.001***	-0.000	0.005***
	(0.000)	(0.000)	(0.000)	(0.001)
Survey wave dummies			0.021***	-0.002
			(0.004)	(0.004)
Total covariates	0.072	0.057	0.061	0.051
Coefficients & unobservables	-0.018	-0.003	-0.062	-0.053
N	77,789	77,789	29,251	29,251

Table A21: Indonesia and Bolivia: decomposition of FLFP

	Indonesia		Bolivia	
Pr(Labor force) last year	0.529	$N = 50,243$	0.645	$N = 3,771$
Pr(Labor force) first year	0.386	$N = 86,076$	0.667	$N = 1,517$
Difference	0.142		-0.022	
	At 2000 coeff.	At 2014 coeff.	At 2000 coeff.	At 2014 coeff.
Own education	0.028***	0.020***	0.014**	0.012***
	(0.004)	(0.001)	(0.007)	(0.002)
Log income	-0.022***	-0.045***	-0.015***	-0.008***
	(0.002)	(0.004)	(0.004)	(0.001)
Male salaried emp.	-0.001***	-0.001***	0.001	0.001*
	(0.000)	(0.000)	(0.001)	(0.000)
Household head education	-0.005***	-0.001	0.002	0.004**
	(0.001)	(0.001)	(0.003)	(0.002)
Social group			-0.007***	-0.003*
			(0.002)	(0.002)
Age	0.001	0.002***	-0.006***	-0.004***
	(0.001)	(0.001)	(0.002)	(0.001)
Children	0.001	0.001*	0.008	0.006
	(0.000)	(0.001)	(0.008)	(0.004)
Region dummies	-0.007***	-0.006***	0.003***	-0.005***
	(0.000)	(0.000)	(0.001)	(0.001)
Total covariates	-0.005	-0.030	-0.000	0.002
Coefficients & unobservables	0.147	0.172	-0.022	-0.024
N	136,319	136,319	5,288	5,288

Table A22: Tanzania and Vietnam: decomposition of FLFP

	Tanzania		Vietnam	
Pr(Labor force) last year	0.812		0.874	$N = 2,040$
Pr(Labor force) first year	0.868		0.858	$N = 5,252$
Difference	-0.056		0.016	
	At 2000 coeff.	At 2014 coeff.	At 2002 coeff.	At 2014 coeff.
Own education	0.012***	0.013***	0.017***	0.019***
	(0.003)	(0.003)	(0.003)	(0.000)
Log income	-0.032***	-0.010**	-0.013**	-0.005***
	(0.008)	(0.004)	(0.006)	(0.000)
Male salaried emp.	-0.002	0.000	0.000	0.000
	(0.002)	(0.001)	(0.000)	(0.000)
Household head education	0.006**	0.002	-0.003*	-0.003***
	(0.003)	(0.003)	(0.002)	(0.000)
Social group			-0.000	-0.000***
			(0.000)	(0.000)
Age	0.000	0.001	-0.006***	-0.010***
	(0.001)	(0.001)	(0.002)	(0.000)
Children	0.004	0.002	-0.002	-0.004***
	(0.004)	(0.007)	(0.002)	(0.000)
Region dummies	-0.005**	0.022***	0.005***	0.004***
	(0.003)	(0.002)	(0.001)	(0.000)
Survey wave dummies	-0.002**	0.002***		
	(0.001)	(0.001)		
Total covariates	-0.020	0.033	-0.003	-0.001
Coefficients & unobservables	-0.037	-0.089	0.019	0.017
N	6,060	6,060	7,292	7,292

Table A23: South Africa: decomposition of FLFP, 1995–2014

Pr(Labor force) 2014	0.681	$N = 17890$
Pr(Labor force) 1995	0.585	$N = 7601$
Difference	0.096	
	At 1995 coefficients	At 2014 coefficients
Own education	0.047***	0.040***
	(0.004)	(0.003)
Log income	0.003***	0.001
	(0.001)	(0.001)
Male salaried emp.	-0.004***	-0.002
	(0.001)	(0.001)
Max adult married male education	0.002	-0.003
	(0.002)	(0.003)
Race	0.017***	0.015***
	(0.001)	(0.002)
Age	-0.005***	-0.000
	(0.002)	(0.001)
Children	0.011***	0.015***
	(0.001)	(0.001)
Province dummies	0.000	0.004***
	(0.000)	(0.000)
Survey wave dummies		-0.002
		(0.004)
Total covariates	0.071	0.068
Coefficients & unobservables	0.025	0.028
N	25,491	25,491

Table A24: Educational attainment and social group: common variables for all countries

	Education				Social group	
Country	Less than primary	Primary completed	Secondary completed	Tertiary	Reference (low FLFP)	High FLFP
Bolivia	< Basic	Basic, Intermediate	Secondary	Any tertiary	(Language) Only Spanish	Spanish and indigenous
Brazil	< Primary	Elementary (1-4), Elementary (5-8)	High school	Any tertiary	(Race) White, Asian	Black, Mixed, Indigenous
India	Illiterate, Literate	Primary, Middle school	Secondary	Any tertiary	(Caste, religion) Hindus non-SCST, Muslim	Hindus SCST, Other
Indonesia	< Primary	Primary, Junior high school	Senior high school	Any tertiary		
Jordan	< Primary	Primary, Preparatory, Lower Secondary	Secondary	Any tertiary	(Nationality) Iraq, Syria, Egypt, Other Arab	Jordan, Other non-Arab
South Africa	< Primary	Primary, Secondary not completed	Secondary	Any tertiary	(Race) White, Indian/Asian	Black, Colored
Tanzania	Never attended, Primary not completed	Primary, Ordinary secondary (< Form IV)	Ordinary secondary (Form IV), Advanced secondary (Forms V-VI)	Any tertiary		
Vietnam	< Primary	Primary, Lower secondary	High school	Any tertiary	(Ethnicity) Other	Kinh

Table A25: Decomposition of FLFP between countries: first year

Reference country: *Brazil (2002)*	South Africa (2001)	Jordan (2006)	India (2004)	Indonesia (2004)	Bolivia (2000)	Vietnam (2002)	Tanzania (2000)
Own education	-0.004***	0.009***	-0.020***	-0.012***	0.003**	-0.007***	-0.053***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Log income	0.008***	0.004***	0.004***	0.003***	0.001***	0.005***	0.009***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.002)
Male salaried emp.	0.000	-0.001***	0.004***	0.002***	0.003***	0.000***	0.002***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Household head education	0.001**	-0.012***	-0.008***	-0.010***	-0.010***	0.017***	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Social group	0.012***	0.018***	-0.007***		0.004***	0.018***	
	(0.002)	(0.003)	(0.001)		(0.001)	(0.003)	
Age	-0.003***	0.002***	0.004***	0.003***	-0.000	-0.004***	0.009***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Children	-0.005***	-0.050***	-0.017***	-0.007***	-0.030***	0.004***	-0.046***
	(0.000)	(0.003)	(0.001)	(0.000)	(0.002)	(0.000)	(0.003)
Regions	0.005***	-0.015***	-0.002	-0.004*	-0.008***	-0.015***	-0.005***
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Pr(Labor force) country	0.679	0.113	0.216	0.374	0.655	0.864	0.798
Pr(Labor force) Brazil	0.626	0.626	0.626	0.626	0.626	0.626	0.626
Difference	0.052	-0.513	-0.411	-0.253	0.028	0.238	0.172
Total covariates	0.015	-0.045	-0.043	-0.025	-0.036	0.018	-0.082
Coefficients & unobservables	0.037	-0.468	-0.368	-0.228	0.064	0.220	0.254
N total	50,554	65,027	69,656	108,504	40,710	44,131	40,901
N country	11,361	25,834	30,463	69,311	1,517	4,938	1,708
N Brazil	39,193	39,193	39,193	39,193	39,193	39,193	39,193

Table A26: Decomposition of FLFP between countries: last year

Reference country: *Brazil (2013)*	South Africa (2014)	Jordan (2014)	India (2011)	Indonesia (2014)	Bolivia (2014)	Vietnam (2014)	Tanzania (2014)
Own education	-0.020***	-0.013***	-0.047***	-0.030***	-0.011***	-0.021***	-0.069***
	(0.001)	(0.001)	(0.003)	(0.001)	(0.002)	(0.001)	(0.002)
Log income	-0.003	-0.002	-0.001	-0.001	-0.000	-0.000	-0.002
	(0.002)	(0.002)	(0.001)	(0.001)	(0.000)	(0.000)	(0.002)
Male salaried emp.	0.000	0.000	0.001	0.001	0.001	0.000	0.001
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Household head education	-0.004***	-0.007***	-0.007***	-0.003**	-0.008***	-0.001	-0.000
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
Social group	0.006***	0.009***	-0.007***		-0.001***	0.009***	
	(0.001)	(0.002)	(0.002)		(0.000)	(0.002)	
Age	-0.007***	0.004***	0.006***	-0.001***	0.001***	-0.007***	0.012***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Children	-0.016***	-0.058***	-0.019***	-0.018***	-0.033***	-0.009***	-0.054***
	(0.001)	(0.003)	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)
Regions	-0.011***	-0.027***	-0.010***	-0.015***	-0.016***	-0.019***	-0.038***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
Pr(Labor force) country	0.676	0.149	0.175	0.568	0.654	0.868	0.747
Pr(Labor force) Brazil	0.677	0.677	0.677	0.677	0.677	0.677	0.677
Difference	-0.000	-0.527	-0.502	-0.109	-0.022	0.191	0.070
Total covariates	-0.053	-0.094	-0.084	-0.068	-0.067	-0.049	-0.151
Coefficients & unobservables	0.053	-0.434	-0.418	-0.041	0.045	0.240	0.221
N total	56,486	69,054	66,843	124,672	42,367	40,333	42,842
N country	17,890	30,458	28,247	86,076	3,771	1,737	4,246
N Brazil	38,596	38,596	38,596	38,596	38,596	38,596	38,596