Globalization's impact on gender equality: What's happened and what's needed

he world is becoming more and more integrated. What started with greater trade openness is translating into growing global economic integration and interdependence, as transnational movements of people and capital accelerate and information becomes ever more accessible. Technological developments are rapidly changing the way people learn, work, and communicate. And the world population is concentrating in medium and large cities.

The new forces associated with globalization—understood as the combination of economic integration, technological diffusion, and greater access to information—have operated through markets, formal institutions, and informal institutions to lift some of the constraints to greater gender equality.

First, trade openness and the diffusion of new information and communication technologies (ICTs) have translated into more jobs and stronger connections to markets for many women, increasing their access to economic opportunities. In some countries and sectors, women's wages have also increased relative to those of men.

Second, gender inequality has more costs in an integrated world. It can diminish countries' ability to compete internationally—particularly for countries with export potential in goods and services with high female employment. And given growing global awareness of women's rights, continued gender inequality can also hurt a country's international standing. These factors strengthen the incentives for policy action toward gender equality around the world.

Third, greater access to information has allowed many in developing countries to learn about life and mores in other parts of the world, including those pertaining to the role of women, possibly affecting attitudes and behaviors. A shift toward more egalitarian gender roles and norms has also been facilitated and, in some cases, reinforced by women's economic empowerment.

But in the absence of public policy, globalization alone cannot and will not reduce gender inequality. Despite significant increases in agency and in access to economic opportunities for many women in many countries, the rising tide has not lifted everybody. Those often left behind are women for whom the existing constraints are most binding. That is why public action aimed at closing existing gender gaps in endowments, agency, and access to economic opportunities is necessary for countries to fully capitalize on the potential of globalization as a force for development and greater gender equality.

This chapter discusses the evidence on the impacts of economic integration, technical change, and access to information on gender inequality. It examines the literature and, where knowledge gaps exist, draws on new work commissioned for this Report. This new work focuses on gender equality in trade, technological change and diffusion, and access to information. Existing evidence is strongest on the impact of trade and technology on labor market outcomes. And it is weakest, at least in the economic literature, on the impact of new trends on gender roles and norms, so that discussion is more tentative and speculative.



THE WORLD IS BECOMING MORE INTEGRATED—RECENT TRENDS AND FACTS

The world has witnessed an enormous economic transformation over the past three decades, fostered by growing global flows of goods and services, technology, and information. These changes have transformed the way domestic and global markets and institutions function—and have thus changed the economic landscape for individuals, households, firms, and governments. A few numbers illustrate the magnitude of these changes.

Merchandise trade in the low- and middle-income countries rose from 31 percent of gross domestic product (GDP) in 1993 to 57 percent in 2008, reflecting both larger North-South and South-South flows (figure 6.1). Significant increases in trade openness occurred in all regions, particularly in South Asia, where merchandise trade rose from 16 percent of GDP to 41 percent, and in East Asia, where it rose from 35 percent to 52 percent. Changes in foreign direct investment (FDI) have also been significant, with flows increasing from 0.5 percent of GDP in 1980 to 4 percent in 2007, followed by a decline during the recent financial crisis.

As goods, services, capital, and people flow across countries faster than ever before, information and knowledge have become global commodities. Technological change crosses borders embedded in traded goods, accelerating its adoption and adaptation. And although technology transfers tend to happen first in exports and imports, they quickly spread beyond them as firms interact and workers change jobs.⁵ Similarly, ideas and skills move from one country to another as the share of skilled migrants in the pool of international migrants increases—from about 25 percent in 1990 to 36 percent in 2000.

Thanks to the spread of cell phones and the Internet, more men and women are gaining access to information—global, domestic, and local. In 1998, only 20 percent of people in developed countries and about 1 percent in the developing world had a cell phone subscription. By 2009, these shares had climbed to 100 percent and 57 percent. Internet access and use have also grown. In high-income countries, Internet users increased from 12 percent of the population in 1998 to 64 percent in 2009, and from near 0 to 17.5 percent in developing countries (figure 6.2).⁶



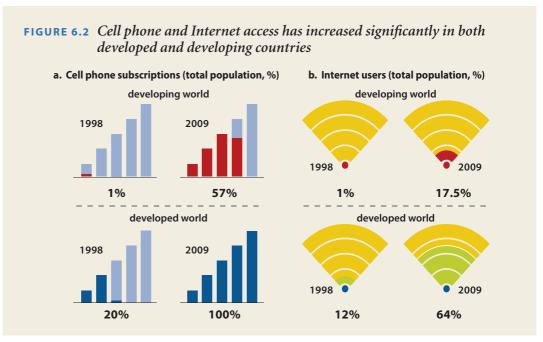
Source: World Development Indicators.

These changes have taken place against (and possibly contributed to) the backdrop of rising economic growth in most areas of the world, particularly in some developing countries—even with the recent food, fuel, and financial crises. Until the second half of the 20th century, no country had sustained annual per capita income growth averaging 5 percent or more over 15 years. But since then, more than 35 countries have accomplished that feat, three-quarters of them in the developing world.⁷

TRADE OPENNESS AND ICTS HAVE INCREASED WOMEN'S ACCESS TO ECONOMIC OPPORTUNITIES

Over the past 25 years, trade openness and the spread of information and communication technologies have expanded economic opportunities.

The demand for female workers in the export and ICT-enabled sectors has increased, and as women have filled these new jobs, the gender distribution of employment across sectors and across countries has changed. Women have moved out of agriculture and into manufacturing and particularly services. These changes have taken place across all countries, but female (and male) employment in the manufacturing and services has grown faster in developing than



Source: International Telecommunications Union 2010.

developed countries, reflecting broader changes in the global distribution of production and labor. In developing countries, the shares of female manufacturing and service employment in global female employment increased from 6 and 17 percent respectively in 1987 to 7 and 24 percent in 2007. In contrast, in developed countries the share of female manufacturing employment in global female employment fell from 12 percent in 1987 to 6 in 2007, while the share of female service employment rose from 44 to 46 percent over the same period (figure 6.3).8 Changes in male employment shares were qualitatively similar but different in magnitude.

At the same time, improvements in ICT technology have allowed women (and men) around the world to access markets in growing numbers by lowering information barriers and reducing the transaction costs associated with market work. Because time and mobility constraints are more severe for women than men, women stand to benefit more from these developments (chapters 4 and 5).

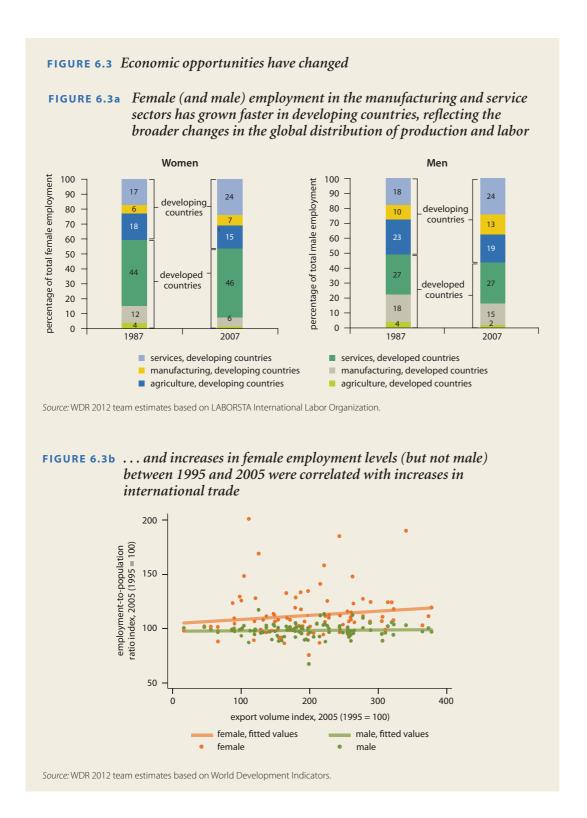
Greater access to economic opportunities and, in some cases, higher returns to economic activity provide stronger incentives to accumulate human capital, particularly for women, and are likely to increase investments in the skills of girls and young women—tomorrow's workers (box 6.1).

Female workers wanted

The early years of trade liberalization were mainly characterized by the move of textile and information technology manufacturing from developed to developing countries. New employment in manufacturing often consisted of labor-intensive assembly line jobs, and the initial gains in manufacturing employment were greatest in countries with abundant unskilled labor and a comparative advantage in producing basic manufactures.

This shift in geographic location of production promoted female labor force participation and the feminization of employment in manufacturing in developing countries—particularly in Asia and Central America.¹⁰ In the Republic of Korea, the share of women employed in manufacturing grew from 6 percent in 1970 to around 30 percent in the 1980s and early 1990s. The importance of manufacturing as an employer of female labor in the Republic of Korea has since declined (to 14 percent in 2007), but the sector still employs 10 times more women today than in the 1960s. Similarly, in Mexico, female employment in manufacturing grew from 12 percent in 1960 to 17 percent in 2008, with 10 times more women in 2008 than in 1960.¹¹

In the past 15 years, the spread of ICTs has expanded trade in services and has, to a lesser extent, promoted the growth of ICT sectors in



developing countries. As a result employment shifted from manufacturing, where jobs could be automated, to services. In the process, demand for nimble fingers on the assembly line gave way to demand for computer literacy as the tasks became more sophisticated and direct interaction with clients and customers more common.

As technology advanced, low-skilled women in light manufacturing were often displaced by men. In Malaysia, women made up to 80 percent of manufacturing workers in the first phase

BOX 6.1 A job today or a better job tomorrow—The impact of increased access to economic opportunities on women's human capital

Globalization's impact is not limited to today's female workers—stronger economic incentives to accumulate skills could also foster higher labor force participation among young women in the years to come. Whether and how much expected economic returns to education affect schooling decisions have received much attention in the literature over the past few decades, particularly in developing countries, where compulsory education laws either do not exist or are enforced poorly and where a large part of the young population does not go to school. But families and individuals do respond to higher economic returns by increasing their investments in education,^a and the prospect of higher returns matters more for girls (chapter 3).

In this context, increased employment opportunities in export-oriented sectors and ICT-related jobs are expected to strengthen existing incentives for investments in education. In India, the emergence of jobs linked to information-technology-enabled service centers (mainly call centers) increased the number of children enrolled in school by 5.7 percent. English-language schools accounted for all of this change, consistent with the idea that new job opportunities were linked to specific skills, such as speaking English. South Africa provides similar evidence.

Because female workers have benefited disproportionately more than men from the changes brought about by trade openness and technological change, girls and young women should have stronger incentives to go to school than boys and young men. For example, in rural India business process outsourcing recruiting and placement services increased employment among young girls, with no effect for older women or for men of any age. Girls ages 5–15 in villages that received the recruiting services were 3–5 percentage points more likely to be in school than comparable girls in other villages. There was no change for boys.^d

- a. Foster and Rosenzweig 1996; Jensen 2010b.
- b. Oster and Millet 2010.
- c. Levinsohn 2004.
- d. Jensen 2010a

of globalization, but by 1987 that percentage had fallen to 67 percent and has since continued to decline. ¹² In Latin America, too, low-skilled female workers in light manufacturing, particularly electronics, lost their jobs as various aspects of production became automated. ¹³

New ICT-enabled jobs in services—particularly information processing in banking, insurance, printing, and publishing—were mainly taken up by women, but not the same women who lost their manufacturing jobs, because the new jobs required a different set of skills, including keyboarding, English, and sometimes French. Female employment in data entry and processing was initially highest in Barbados, Jamaica, and the Philippines. ¹⁴ Later, ICT-related jobs were concentrated in software, call centers, and geographical information systems, and clustered in Malaysia and India, particularly

in Delhi and Mumbai, where call centers employ more than 1 million people, most of them women.¹⁵

In both manufacturing and service exports, growth in female employment was faster than ever before and faster than in other sectors. And although exports in many countries initially accounted for a small fraction of total female employment, their importance grew over time as a result of rapid employment growth.

Global agriculture has also changed. The export share of traditional crops has declined, while the share of nontraditional and high-value-added exports—such as horticulture, floriculture, protein-rich meats, and processed foods—has grown rapidly. Their expansion—driven by advances in refrigeration, lower transport costs, and the growth of supermarkets as dominant buyers in global value chains—has created a wide range of jobs. 16

But the feminization of employment through exports appears to be less common in agricultural economies. Growth in traditional agricultural exports has benefited men more than women because women are less likely to work on commercial crops and are crowded out of traditionally female-intensive crops when these crops become commercial.¹⁷ In contrast, nontraditional and high-value-added exports have stimulated higher female employment in export production, although the impacts vary by country and product.¹⁸ In Chile and South Africa, new female employment was mainly temporary and seasonal,¹⁹ while in Colombia and Kenya, women were more often hired as permanent workers in the flower industry.²⁰

Higher female employment in exports has often (but not always) been accompanied by wage gains. Transnational and exporting companies may be able to pay higher wages than locally owned firms and firms producing for the domestic market. They also may be better able to insulate their workers from economic cycles—and their workers may be better protected by labor legislation and are more likely to be unionized and thus eligible for benefits.²¹ That is why female wages are frequently higher²² and the gender wage gap is lower in exports than in other sectors, even after controlling for worker characteristics. Evidence from China shows that female workers receive higher wages in the new export-oriented industries than in the older state industries.²³ In Mexico, over 1990-95 a

higher export orientation was associated with a narrowing of the gender wage gap.²⁴ And in Bangladesh and Morocco, wage discrimination against women in textile exports was lower than in other manufacturing in the early stages of liberalization, and it declined even further over time.²⁵

In some places, however, greater openness has had little impact on the gender wage gap, and in others, the gains have been only temporary. ²⁶ In the Republic of Korea, greater openness had little impact or even widened the gender gap. And data from Mexico and Honduras suggest that wages in recently established export processing zones tend to be higher than local wages but over time the differences narrow. ²⁷ In the developed world, the impact of higher trade openness on women and men has been extensively debated (box 6.2).

Brain or brawn?

ICTs have transformed the organization of economic activity over the past quarter century, increasing the demand for and the returns to brain (cognitive) and nonroutine skills relative to brawn (manual) and routine skills (box 6.3).²⁸ In the United States, for example, brain tasks increased and brawn tasks declined between 1950 and 2005.29 Driving this shift were changes in the composition of the economy's occupational structure, such as the rise in the number of doctors per 100 workers and the fall in the number of production line operators per 100 workers. Changes in specific occupations, such as the growing use of robotics for production line operators, also contributed to the shift. As with growing trade in goods and services, these shifts have boosted demand for female workers.

These changes are captured in figure 6.4, where circles represent different occupations. Circles become bigger or smaller between 1950 and 2005 depending on whether the number of people employed in that occupation increased (lawyers and judges) or decreased (farmers) during the period. Similarly, movements from left to right or right to left represent changes in the brain requirements of a particular occupation, whereas movements up and down capture changes in the brawn requirements—where requirements are measured on a scale of 0 to 100. As brain requirements increase and brawn requirements decrease between 1950 and 2005, most circles shift downward and to the right.

BOX 6.2 The impact of globalization on men (and women) in developed countries

Greater economic integration has also had an impact on workers in the developed world. It has benefited skilled workers, sometimes at the expense of unskilled ones. It has increased the demand for skilled workers, relative to that for unskilled ones. And this shift has translated into greater wage inequality in the United States and greater unemployment among the unskilled in Europe, where labor market regulations prevented the wages of the unskilled from falling.³

Impacts were larger among men than among women because men were concentrated in the industries and occupations most affected by foreign competition and the relocation of production to the developing world. Higher trade openness accounts for 12–33 percent of the employment losses in manufacturing and for about 20 percent of the rise in the skill premiums during the 1980s and 1990s in the United States. Technological change also accounts for an important share of the increase in skill premiums. Evidence of trade's impact on women's wages and employment is more mixed.

Trade liberalization and foreign direct investment leading to the offshoring of medium- and high-skill jobs may have also raised job insecurity. Workers in the United Kingdom in sectors with high foreign investment are more likely to report greater economic insecurity.^d And U.S. workers in service activities and occupations that are potentially tradable report both greater insecurity and a stronger desire for a strong government safety net.^e

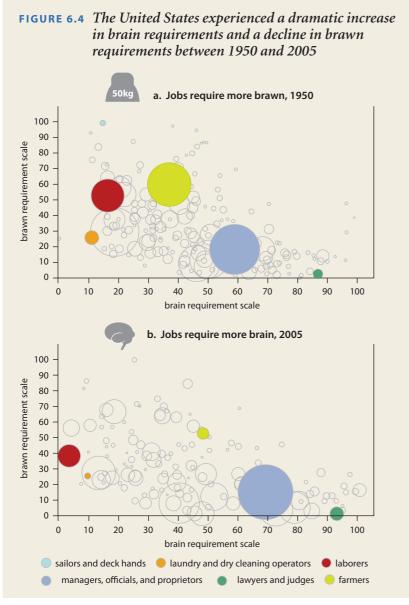
In some cases, the impact of these changes reaches beyond the economic sphere. The notion of men as the main breadwinners has been challenged by the greater economic opportunities for women and the job destruction in male-dominated sectors; these changes have often led to adjustment in the power balance in families.

- a. Freeman 1994; Wood 1995.
- b. Baily and Lawrence 2004; Bivens 2004; Bivens 2006; Harrison, McLaren, and McMillan 2010; Lawrence 2008.
- c. Black and Brainerd 2004; Wood 1991.
- d. Scheve and Slaughter 2004.
- e. Anderson and Gascon 2007.

BOX 6.3 Occupational tasks and skill requirements— Getting the terms right

The work performed in a particular occupation can be broken down to tasks, each characterized by its intellectual or physical requirements and by how amenable it is to standardization. The discussion here uses the word pairs "cognitive/manual" and "brain/brawn" interchangeably to capture whether a task is primarily intellectual or physical. Similarly, tasks amenable to standardization are referred to as routine and those that are not as nonroutine. These choices reflect the terminology used in the literature on the impact of technological change on occupational skills requirements.

Both manual and routine cognitive tasks are well defined in the sense that they are easily programmable and can be performed by computers at economically feasible cost—a feature that makes them amenable to substitution for computer capital. Nonroutine and cognitive tasks, by contrast, are not well defined or programmable and, as things currently stand, cannot be easily performed by computers.



Source: Rendall 2010.

Similar evidence of the impact of ICT and computers on the demand for brain versus brawn is also available for other developed countries.³⁰

Traditionally, men have been more likely to be employed in sectors and occupations with stronger physical requirements than women (men have an advantage in brawn). So computers, by deemphasizing physical skills, should favor women, even if women have no advantage over men in using a computer or acquiring computer skills. Evidence from the United States and Germany supports this idea. Sustained increases in the demand for brain versus brawn associated with ICT and the computerization

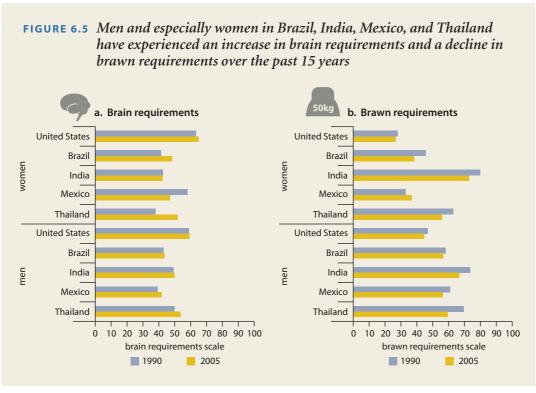
of the workplace explain most of the observed rise in demand for female workers, female labor force participation, and female employment in these countries over the past few decades.³¹ In addition, increases in the returns to brain relative to brawn can account for a large fraction of the reduction in the gender wage gap in both countries since the 1970s and 1980s.³²

To the extent that economic integration and particularly foreign direct investment promote the move of technological change from the developed to the developing world and facilitate its adoption and adaptation, the relative demand for—and the returns to—brain should increase similarly in developing countries.

The data on this question are very limited,³³ but new work for this Report provides supporting evidence from Brazil, India, Mexico, and Thailand during 1990–2005.³⁴ In all four countries, brawn requirements were significantly higher and brain requirements significantly lower in 1990 than those in the United States in 1950. But differences then diminished, as brain requirements increased and brawn requirements decreased for both men and women—driven mainly by the decline in the relative importance of agricultural employment and the associated changes in the occupational structure of the economy.

In Brazil, Mexico, and Thailand, women were in occupations with lower brawn requirements than men at the beginning of the period, while in India brawn requirements were similar for women and men because of women's heavy presence in agriculture. In Brazil, India, and Thailand, brain requirements increased faster for women than for men. In Mexico, by contrast, the expansion of low-skill female *maquila* employment meant that brain requirements declined and brawn requirements increased slightly among women (figure 6.5).³⁵

The world is getting computerized and without knowledge of computers you will be left behind. So I have started to learn how to use a computer now.



Source: Rendall 2011.

Changes in the supply of and returns to brain and brawn have also narrowed the gender wage gap in these countries, although the impacts vary more widely. In Brazil and India, these changes account for a large part of the observed decline in wage differences between men and women during 1990–2005. In Mexico, where the gender wage gap increased slightly, the rise in the returns to brain mitigated the widening of the gap. In Thailand, changes in the supply of and returns to brain and brawn cannot explain changes in the gender wage gap—primarily because men and women are distributed fairly evenly across sectors and occupations.³⁶

More connected and better informed—ICTs have increased women's access to markets

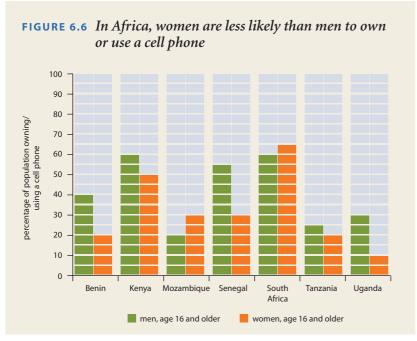
ICTs can improve access to markets and increase participation in market work by reducing transaction costs associated with time and mobility constraints. They facilitate the gathering and transmission of price and other information and increase the flexibility in where and when economic activities can occur. Because women often face more restrictions than men in their mobility and available time (chapters

4 and 5), they stand to benefit more from these developments.

The focus here is on cell phones and the Internet because they are the two most commonly available ICTs outside the workplace and their coverage is expected to continue to rise rapidly.

Mobile phone access, very high in developed countries, has grown substantially in the recent past in the developing world, and the gap between the two is closing fast. Within countries, gender differences in cell phone access and use are almost imperceptible in high- and middle-income countries, especially among young people, but gender differences are still large in low-income countries, where a woman is 21 percent less likely than a man to own a mobile phone. This figure increases to 23 percent in Africa (figure 6.6), 24 percent in the Middle East, and 37 percent in South Asia.³⁷

In contrast, the differences in Internet access and use between developed and developing countries are still very large, and gender gaps are significant in some countries. Among countries with data, Internet use ranges from 90 percent of the population in Iceland to 10 percent in Honduras and Nicaragua. In addition, gender gaps are substantial within some developed and



Source: www.ResearchICTafrica.net

developing countries and appear to be uncorrelated with the overall levels of access in the country—in Luxembourg, Serbia, Switzerland, and Turkey, differences in access to Internet between men and women exceed 10 percentage points (figure 6.7).

So, mobile phones should have had a much more transformative impact than the Internet in developing countries so far. The evidence on both aggregate and gender-disaggregated impacts of cell phones on labor market participation and access to economic opportunities in these countries is surprisingly sparse, however, with most information coming from case studies, many of them in Africa and South Asia.

Cell phone access and use can alleviate time and mobility constraints for women by increasing the ability to coordinate their family and work lives, reducing the cost of money transfers, and cutting down the physical labor or travel required to discover information (including avoiding fruitless trips to get supplies or meet customers).³⁸ In Senegal, female fishmon-

Everybody uses cell phones, even market women and all. For example, when their goods come, the person will just call them.

Young woman, Liberia

gers report that access to cell phones facilitates communication with their clients and suppliers, reducing travel time and costs, and with their families while they are away from home.³⁹ Similarly, 41 percent of women interviewed in Bolivia, the Arab Republic of Egypt, India, and Kenya declared that owning a mobile phone had increased their income and their access to economic opportunities. The impacts were significantly higher among female entrepreneurs: female business owners reported that they were 2.5 times more likely than nonbusiness owners to use their mobile phone to earn income, and they were significantly more interested than other women in receiving services such as notifications of money transfers on their phones (63 percent versus 41 percent).40 Finally, while the focus here is on access to economic opportunities, the impact of mobile phones is broader (box 6.4 and chapter 7).

In many cases, women, particularly rural women, were willing to reduce expenditures on other items to have access to a mobile phone, suggesting that the perceived benefits outweighed the costs, which averaged 3.5 percent of household income among those surveyed. Thirty-four percent of women in rural Bolivia, Egypt, India, and Kenya reallocated resources away from other items to pay for a phone subscription, compared with 20 percent among all women surveyed and 12 percent among women who do paid work.

Closing the gender gap in cell phone access would bring the benefits of mobile phones to an additional 300 million women in low- and middle-income countries. And it could also generate up to \$13 billion in incremental revenue to mobile operators, given that women represent two-thirds of the untapped market for mobile growth. 41

The picture is quite different for the Internet. Low private access in the developing world, especially in rural areas, has severely limited its impact on access to economic opportunities—beyond the impact of ICTs on outsourcing and service export employment discussed earlier. Governments and development agencies have set up village "telecenters" for public use, generally as a fee for service, to increase access to basic ICT services among underserved populations. These centers generally offer computers linked to the Internet and are available for word processing and graphics work, faxes, e-mail, photocopying, and phone lines. They may also feature

training on the equipment, and some incorporate radio broadcasts or video resources.

The lack of systematic evaluation again makes it difficult to assess whether these centers contribute much to business, particularly for female entrepreneurs in the local community, but anecdotal evidence suggests some positive impacts.⁴² In Cameroon, 50 percent of female entrepreneurs in textiles reported using these centers for both professional and social uses and extolled their usefulness for business-related communication.⁴³ But given high set-up and maintenance costs for telecenters, more conclusive evidence is needed on their impact on (women's) labor force participation and access to economic opportunities. In other places, groups of female entrepreneurs have used the Internet to have more direct access to domestic and international markets. In Morocco, home-based female weavers use the Internet to sell rugs and other textiles and to keep a larger share of their profits than traditional middle-man-based systems.44

In high-income countries, by contrast, ICTs allow people to work from different locations and on different schedules-in other words, to work in more flexible ways, lowering the transaction costs in market work. Telecommuting (or telework) is fueled by increased access to home computing systems, complementary telecommunication devices, and cheaper implementation costs associated with lower-priced equipment and broadband services. In the United States, 26 percent of workers used telework fully or regularly in 2009. In the European Union, telework almost doubled in 2000-05 to reach 9 percent of all workers. This trend appears to reflect broad practices. Data from the Netherlands suggest that the proportion of companies employing teleworkers doubled from 2003 to 2007.45

To the extent that time constraints are more binding for women, particularly those in families with children (chapter 5), telework can have big gender impacts. Seven percent of working women in Europe report that they telework regularly, compared with 12 percent of men. These differences reflect the fact that telework is more common in sectors where male employment is dominant. However, it is women who have experienced faster growth in telework in the past few years in almost every European country for which data is available, suggesting a stronger willingness or desire among women to take advantage of more flexible work arrangements (figure 6.8).

FIGURE 6.7 Differences in Internet access and use between developed and developing countries are still very large, and gender gaps are significant in some developed and developing countries Austria Belgium Canada Croatia Cyprus Czech Republic Denmark Finland Germany Greece Hong Kong SAR, China Hungary Iceland Ireland high-income Italy countries Japan Korea, Rep. Latvia Luxembourg Macao SAR, China Malta Netherlands New Zealand Norway Oman Poland Portugal Slovak Republic Slovenia Spain Sweden Switzerland Azerbaijan Bulgaria Lithuania Macedonia, FYR Europe and Romania Central Asia Serbia Turkey Ukraine East Asia and Pacific Thailand Brazil Chile Costa Rica Ecuador Latin America El Salvador and the Caribbean Honduras Mexico Nicaragua Paraguay Middle East and North Africa

Egypt, Arab Rep.

Mauritius

80

40

percentage of Internet users

Source: World Telecommunication/ICT Indicators database.

Sub-Saharan Africa

Home-based telework is much more limited in other developing regions. Even in dynamic cities such as Mumbai and Kuala Lumpur, the incidence of telework is 0.4-1.0 percent of em-

BOX 6.4 Leveraging mobile and ICT technology to improve access to services

Mobile phones, the Internet, and more traditional communication technologies, such as radio, are providing new platforms to disseminate information and increase access to services among those in remote or underserved areas and among those with lower mobility. Because women are overrepresented in these groups, they tend to benefit disproportionately from these initiatives—even when the initiatives are not targeted to women.

Most experiments have been in banking, health, and education. A few examples follow. Mobile phone technology provides access to financial services, such as processing money transfers and small payments, and promotes savings (M-PESA in Kenya). Text messaging provides women and health workers valuable information about pre- and postnatal care, nutrition (Text4Baby in the United States and the Russian Federation, Rapid SMS in Rwanda), and ongoing treatments. Some projects allow for interactions with users, including the customization of services (Wawanet in Peru). And some health services have been combined with other tools to promote savings to pay for the cost of prenatal care and delivery (Mamabika, in coordination with M-PESA, in Kenya). Mobile phones and the Internet also promote literacy (Mobilink and United Nations Educational, Scientific, and Cultural Organization in Pakistan) and facilitate access to distance education, particularly higher and vocational education (Community Nurses in Kenya).

Beyond access to services, mobile phones and the Internet allow women to be more connected to each other and their communities (Project Zumbido in Mexico, Tostan and UNICEF in Senegal) and to have a stronger social and political voice (Mobili-ise in Kosovo).

Most of these initiatives are fairly new and have not yet been evaluated. Moving forward, it will be important to learn more about what works and what does not in each context and to continue experimenting to fully capitalize on the potential power of new technologies.

Sources: Franklin and others 2006; GSMA Development Fund 2010; Kanwar and Taplin 2001; Lester and others 2010; Melhem, Morrell, and Tandon 2009.

ployment in ICT-enabled jobs. This low level may reflect both women's preference for institution-based teleworking and managers' concerns. In Malaysia, ICT firm managers reported that face-to-face interaction with their employees was essential, and in India, managers also expressed a preference for direct monitoring and supervision of workers. 46

ADAPT OR MISS THE BOAT

Trade openness, technological diffusion, and access to information have fundamentally changed the way countries interact and compete with each other in the global economy. Because gender (and other) inequality has more costs in a globalized world, these changes could translate into stronger incentives for both firms and governments to move toward gender equality. Specifically in countries with a comparative advan-

tage in female goods, gender differences in access to market work and persistent employment segregation by gender could severely undermine the country's capacity to compete internationally and ultimately hamper economic growth.

Added to this economic reality is growing international pressure for countries to grant and enforce formal rights for women. International action in this area has translated into agreements sponsored by international organizations, primarily the International Labour Organization (ILO) and the United Nations (UN), followed by strong international pressure on countries to formally adhere to these agreements either directly or indirectly as part of broader trade and other economic agreements.

The evidence (albeit limited) discussed in the following section suggests that this combination of home-grown and international pressure for greater gender equality, fostered by globalization, has contributed to the progress of the past few decades.

The rising costs of (gender) discrimination in a global world

Economic theory says that greater competition in product markets should reduce discrimination in factor (labor, capital, and land) markets.⁴⁷ In other words, stronger competitive pressures from greater economic integration should force employers to reduce costly gender (and other) discrimination.48 This idea is supported by data from the United States in the 1980s, where increased competition through trade contributed to the relative improvement in female wages in concentrated industries, suggesting that trade benefited women by reducing firms' ability to discriminate—although there are concerns that this decline also reflects changes in the composition of employment in favor of more skilled female workers (at the expense of less skilled ones).49

It is not simply the overall level of trade that matters for how trade openness affects gender equality: the comparative advantage of countries is equally important.⁵⁰ New work for this Report shows that countries with a comparative advantage in female- or brain-intensive industries (figure 6.9)—ones employing a large share of female workers—face higher costs from gender discrimination when they open to trade. The reverse holds for countries with a disadvantage in the production of such goods. In addition, the

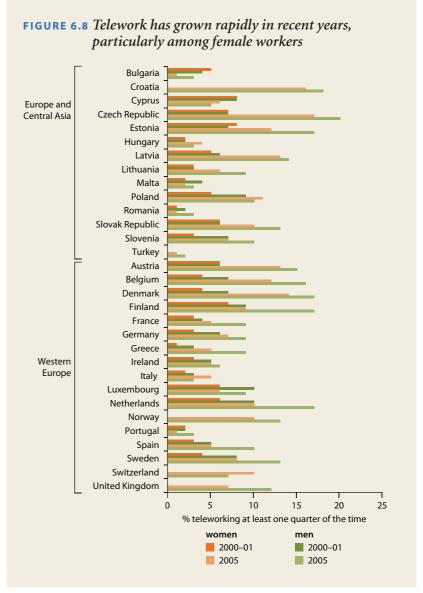
status of women should affect not just trade volumes but also trade patterns in the short run.⁵¹

Indeed, gender equality appears to be higher in countries with larger export shares in femaleintensive goods and vice versa. Countries with higher female labor force participation, lower fertility, and higher educational attainment have larger export shares in sectors intensive in female labor. Specifically, moving from low equality (bottom quarter of the distribution for any of the three selected indicators) to high equality (top quarter) increases the global export share of sectors with high shares of female employment (female-intensive sectors) by 1-2 percentage points more than that of sectors with low shares of female employment (nonfemale-intensive sectors).⁵² This effect holds after accounting for gender equality and trade as a two-way relationship.

Furthermore, countries with a comparative advantage in the production of female-labor-intensive goods have lower fertility rates and, to a lesser extent, higher female labor force participation and educational attainment. For instance, moving from low female-intensity in exports (bottom quarter of the distribution) to high intensity (top quarter) lowers fertility by as much as 0.21 births per woman, or about 10 percent of the global total fertility rate.⁵³ As before, the effect is measured after controlling for reverse causality between gender equality and trade.

The new research undertaken for this Report focused specifically on the relationship between trade and labor force participation, but other analysts have examined the role that wages play as a source of comparative advantage based on low costs of production, and have argued that in some sectors and countries low wages (particularly among women) have allowed exportoriented industries to remain competitive.⁵⁴ Yet, while it is true that wages in export firms in developing countries are frequently lower than those paid by firms in developed countries, they are often higher than the wages offered by other job opportunities in the local labor market (see discussion in concluding section).

That the nature of comparative advantage matters in understanding how trade openness affects gender equality has implications for policy. Since 1970, the share of female labor embedded in exports in developing countries has increased by about 10 percent, and most countries should expect further increases as ICTs continue

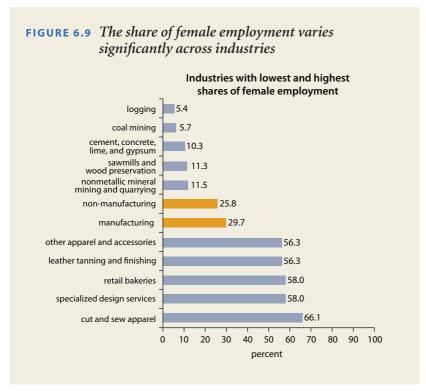


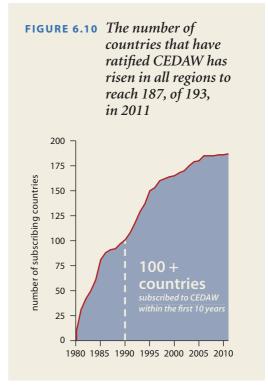
Source: WDR 2012 team estimates based on European Working Conditions Survey 2000, 2001, and 2005. *Note*: No data are available for Norway, Switzerland, Turkey, and the United Kingdom in 2000–01.

to spread. Moreover, industries with high shares of female employment tend to be more labor intensive than those with low shares and to account for most export-related employment. So, without actions to eliminate existing barriers to access to markets, countries with a comparative advantage in female-intensive goods will lose ground to their competitors in global markets.

Peer pressure and international carrots and sticks

Since the 1960s, concerns about gender equality and systematic discrimination against women





Source: Do, Levchenko, and Raddatz 2011.

Source: CEDAW.

have gained momentum internationally, leading to both the drafting of a number of self-standing international treaties and conventions and the inclusion of nondiscriminatory clauses in several broader-purpose economic agreements. These conventions and agreements have also fostered legislative action toward higher gender equality around the world.

The most prominent among the international treaties is the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), adopted in 1979 by the UN General Assembly. As of August 2011, 187 countries (of a total of 193 UN member nations) were parties to the convention (figure 6.10). The countries that had not yet become party at that time were the Islamic Republic of Iran, Palau, Somalia, South Sudan, Sudan, Tonga, and the United States. The ILO conventions C.100 (equal remuneration for equal work) and C.111 (elimination of discrimination on employment and occupation) have also been widely ratified around the world.

These treaties and conventions have become the primary international vehicle for monitoring and advocating for nondiscrimination, and their ratification has spurred progress toward granting formal rights in several areas of women's lives, in large part by facilitating legislation either where it did not exist or where existing laws were discriminatory and needed to be overturned.⁵⁵ Some evidence also shows that participation in CEDAW has improved women's literacy levels, labor force participation rates, and parliamentary representation—and in some cases has reduced absolute gender inequalities.⁵⁶ But legal reform, however necessary to ensure full equality for women, is often not sufficient in the absence of adequate enforcement (chapter 4), so efforts to ensure de facto reform should continue.

Trade and other economic agreements have provided a second channel for international pressure to elicit domestic action on gender equality. These documents often include antidiscriminatory and social clauses, linking a country's access to the economic benefits in the agreement to adherence to certain minimum standards. This is the case in trade agreements, such as the North American Agreement on Labor Cooperation in the North American Free Trade Agreement, and agreements regulating member accession to economic zones, such as the European Union. For enforcement, these agreements have an ad-

vantage over international conventions in that economic considerations and, in some cases, the threat of potential sanctions may motivate otherwise reluctant countries to accept and implement some minimum standards. For example, countries more open to trade also have better economic rights for women and a lower incidence of forced labor.⁵⁷

Pressure from media and consumers in developed countries can also lead multinational firms to offer better working conditions to their workers in developing countries. For instance, both wages and nonwage working conditions (such as hours worked, accidents, contractual characteristics, work environment, and other benefits) among formal workers (most of them women) in the export textile and apparel industries in Cambodia, El Salvador, and Indonesia were found to be at or above the average in the rest of the economy.⁵⁸ Similarly, antisweatshop campaigns in Indonesia led to large wage increases in foreign-owned and export firms, with some costs to the firms in the form of reduced investment, falling profits, and increased probability of closure for smaller plants, but no significant impact on employment.59

Important challenges remain in working conditions for those outside formal employment (box 6.5). In the end, a combination of different strategies—including social clauses in trade agreements, corporate codes of conduct, and the ILO's "decent work" approach—is needed. Social clauses put the onus for workers' rights on the governments of exporting countries rather than on the companies that dominate global production systems. Codes of conduct put the burden on corporations, but they are usually voluntary and may not address the behavior of subcontractors and others involved in the production of export goods. Finally, the ILO aims to engage with governments, firms, and workers, but its only tools are dialogue and persuasion.⁶⁰ So a combination of all three may be the most desirable.

GLOBALIZATION COULD ALSO PROMOTE MORE EGALITARIAN GENDER ROLES AND NORMS

The changes unleashed by globalization—especially the greater access to economic opportunities and information among women—could also influence existing gender roles and norms,

BOX 6.5 Globalization and working conditions— Some progress, but more needs to be done

In the public's mind, increasing global economic integration and moving production to developing countries have been associated with low wages, long hours, and poor working conditions. Public opinion in developed countries generally connects globalization with sweatshops where child labor is common and workers are denied the most basic rights. Frequently, it is argued that women are especially hurt by this process. The fact that workers willingly take this type of job is usually explained by the lack of better options and the destruction of their traditional ways of life caused by globalization.

In reality, the impact of trade liberalization on working conditions varies across firms, sectors, and countries. In some cases, trade openness and economic integration have led to the adoption of higher work standards, particularly for formal workers. For example, wages and nonwage working conditions for formal workers in the export textile and apparel industries in Cambodia, El Salvador, and Indonesia matched or exceeded the economy's average.^a Increased trade openness also appears to be correlated with better economic rights for women and lower incidence of forced labor.^b

In other cases, however, low wages and poor working conditions are part of a broader strategy to keep costs low. This is particularly true for workers operating under subcontracting arrangements with local firms where there is no control over working conditions—and may be especially detrimental to women, who are overrepresented in the informal sector. In India, Pakistan, the Philippines, Sri Lanka, and Thailand, subcontracted workers suffered from precarious job security, an almost total absence of benefits, and a general impossibility to organize and fight for their rights. Yet in many cases, subcontracted work was the only possible paid employment that women could take that meshed with family responsibilities or social norms.

- a. Robertson and others 2009.
- b. Neumayer and De Soysa 2007.
- c. Carr and Chen 2004.
- d. Balakrishnan 2002.

ultimately promoting more egalitarian views. The evidence on this effect is more limited and tentative than that in previous sections but sufficiently suggestive (we think) to merit some discussion here, in the spirit of spurring further work on these issues.

Women turned income earners may be able to leverage their new position to change gender roles in their households by influencing the allocation of time and resources among household members, shifting relative power within the households, and more broadly exercising stronger agency. In fact, women appear to gain more control over their income by working in export-oriented activities, although the impact on well-being and agency is more positive for women working in manufacturing and away from their male relatives than for those working in agriculture. Women in factories feel their status has improved.⁶¹ They are more likely to

marry and have their first baby later than other women of similar socioeconomic status and to have better quality housing and access to modern infrastructure. They also report greater self-esteem and decision-making capacity, with benefits extending to other family members. In contrast, women in agriculture have not experienced significant changes in decision-making capacity or agency as a result of commercialization and higher export orientation, even when typical "women's crops" are promoted.

I would like to be better [than my mother].
In their time, there was no education and they were not aware of the world around them.
Nowadays, we have access to the Internet and other media. We can improve our lives and do better things.

Young woman, Sudan

Beyond the economic sphere, increased access to information, primarily through higher exposure to television and the Internet, has also exposed many in developing countries to the roles women play in other parts of the world, which may affect gender roles and outcomes (chapter 4). For instance, in Brazil, a country where soap opera watching is ubiquitous and cuts across social classes, the presence of the Globo signal (a television channel that offers many popular Brazilian soap operas) has led to lower fertility, measured as the number of live births for women ages 15-49.65 The effect is about onetenth that of being married—and comparable to the effect of an increase of 1 doctor or nurse per 1,000 people or of two additional years of education. In other words, it is significant.

Similarly, evidence from rural India suggests that gender attitudes among villagers changed with cable television. Women with access to cable were less likely than others to express a son preference or to report that it is acceptable for a husband to beat his wife. Behaviors traditionally associated with women's status also changed—women reported more autonomy (able to go outside without permission and to participate in household decision making) and lower fertility. As in the Brazil study, the im-

pacts are quite large. For example, cable television decreased the differences in attitudes and behaviors between urban and rural areas by 45–70 percent. The effects appeared quickly, with observable impacts in the first year following cable's introduction.

Interestingly, and somewhat contrary to standard notions about gender roles and women's agency in the household, the evidence discussed here suggests that under some circumstances exposure to information can induce large and fast change. This finding is consistent with work on the broader impact of media exposure, which typically finds that such exposure leads to significant and rapid changes in behavior such as contraceptive use, pregnancy, and latrine building, as well as the perception of the status of one's village.⁶⁷

Access to economic opportunities has also brought change in the public sphere. In Bangladesh, the employment of hundreds of thousands of women in the ready-made garment industry feminized the urban public space, creating more gender-equitable norms for women's public mobility and access to public institutions.⁶⁸ In the process, Bangladeshi women had to redefine and negotiate the terms of *purdah*, typically reinterpreting it as a state of mind in contrast to its customary expression as physical absence from the public space, modest clothing, and quiet demeanor.⁶⁹

The impact of ICTs and access to information on gender norms and, more broadly, gender in the public sphere is more mixed. The spread of ICTs has empowered women socially and politically by increasing access to networks (box 6.4 and chapter 8). For instance, activist networks in Africa and Latin America have used the Internet to increase public awareness about questions of gender inequality.⁷⁰ But the network structure also allows women to become actors without fundamentally changing their local conditions or their role in their households, bypassing constraints rather than confronting them—in other words, the transformative power of technology is manifest in a parallel universe.⁷¹ The tension between immobile personal circumstances and greater awareness and public presence could provide fertile terrain for further change. But such change will require a critical mass of women with access to the Internet and other information sources.72

OLD PROBLEMS, EMERGING RISKS

The rising tide of globalization has not lifted everybody. Gender differences in endowments, time use patterns, access to productive inputs, and agency have muted positive impacts for some and, at times, added to inequalities between men and women and among women.

Even among those who have benefited from higher access to economic opportunities, old patterns of employment segregation by gender can emerge. Signs of defeminization of (formal) employment in some countries, industries, and occupations—combined with increased informality—suggest that some of the gains may not be sustainable.

Public action to close gender gaps in agency, endowments, and access to economic opportunities is thus necessary for countries to fully capitalize on the potential of globalization as a force for development and greater gender equality.

When "old" gaps meet new trends, disadvantaged women are left farther behind

Women caught at the intersection of "old" gender gaps (in endowments, time availability, access to productive resources, and agency) and the new forces unleashed by globalization risk falling farther behind both men and women who have managed to benefit from trade openness, technological change, and access to information.

First, gender differences in education have limited women's access to new employment opportunities. In agriculture, besides having a positive impact on productivity (chapter 5), education affects farmers' capacity to adopt improved seed varieties and fertilizer⁷³ and, more broadly, to comply with output standards and other important factors that determine access to the nontraditional and high-value export sector. Because of lower education levels, female producers experience more constraints in accessing international markets than male producers in Samoa and in Mozambique and other Sub-Saharan countries.74 Insufficient education and skills have also impeded access to export and ICT-enabled jobs in the service sector.

Education sorting along gender lines has also limited female presence in occupations directly related to ICTs, such as computer programmers, engineers, system analysts, and designers (chapter 3).⁷⁵ Data from the Organisation for Economic Co-operation and Development (OECD) suggest that women represent a small percentage of all ICT-related employment and, within the sector, are underrepresented in managerial, scientific, and professional positions and overrepresented in office and secretarial occupations.⁷⁶ These differences are important because ICT skills are among the driving forces for technological development, and growth and employment in these areas is expected to rise over time.

Second, gender differences in care responsibilities can prevent women from seizing new agricultural and wage opportunities in the export sector if no other household members can take on their duties. That is particularly true when new opportunities arise in large farms or the formal sector, where a premium is placed on longer work hours and a fixed schedule. Studies of the cut flower industry in Ecuador, export processing zones in Guatemala, nontraditional and high-value exports in Kenya, and rural-urban linkages in Malaysia all point to the presence of other female members in the household as a determinant of women's participation in new opportunities created by trade.⁷⁷ These other female household members may be mothers or elder daughters available to take on household duties relinquished by women who go out to work. Very little is known about their circumstances and the price they pay for the reallocation of housework and care in the household.⁷⁸

Third, women's weaker property rights in land and limited access to productive inputs also constrain their capacity to benefit from trade openness. This problem has been particularly perverse in Africa, where natural resources and agricultural products account for a large fraction of exports.⁷⁹ In Senegal, only 1 of 59 french bean farmers (export crop) is a woman⁸⁰

There is tailoring and embroidery work, but people will find the best jobs by having computer skills, and that is still not provided to women.

Adult woman, Afghanistan

while in Meru, Kenya, more than 90 percent of export contracts were issued to male household members.⁸¹

Fourth, conservative gender norms for mobility and women's role in the economic sphere can disproportionately affect women's access to technology (including ICTs) and more broadly to information. At home, men often regulate the family radio, mobile phone, or television, controlling when and how other family members can use them.⁸² At work, men may determine that operating a plow or a computer is not something women should be allowed to learn. Even technology programs that target women can be co-opted by men once their utility and profitability are established—so women who do gain access to the technology do not see its economic benefits.⁸³

Given that the number of private Internet connections in developing countries is still low, women's access to ICTs and information is also affected by the geographic location of public Internet centers. When Internet centers are a long way from residential communities or in unsafe neighborhoods, women are less likely to frequent them. Beyond safety, women's access can also be inhibited when services are offered in settings and institutions that women are unlikely to visit or when men and women are expected to share the same space. In a 2000 study, 72 percent of Arab female Internet users declared that home was their preferred place of access.⁸⁴

Are gains for women sustainable? Segregation in new industries and occupations

Signs of defeminization of employment in some sectors and occupations, together with concerns about growing informality among women employed in export-oriented sectors, have raised concerns about whether the segregation observed in nonexport sectors is emerging in new industries and occupations.

Production in export sectors has changed in the past few decades in two ways. First, firms have recapitalized to adopt production systems based on generalized rather than specialized equipment, shifting comparative advantages in export-oriented manufacturing from laborintensive to capital-intensive technology. Second, firms have reorganized production to be more flexible, by lowering costs, shortening lead times, and differentiating product lines. ⁸⁵ Fostered by

intensified competitive pressures and facilitated by the spread of ICTs, these changes have contributed to the defeminization and informalization of employment in export-oriented sectors.

In many cases, recapitalization has reduced employment opportunities for unskilled, primarily female, workers. Men are perceived to have the education and skills to manage new generalized technologies, while women are pushed to smaller subcontracting firms. It is not clear, however, what prevents women from benefiting from upgrading and shifting production toward skill-intensive goods because gender educational gaps are quickly narrowing in many countries. One possible explanation is that significant differences still exist between men and women in the content of their education and their nonformal skills, including sector-specific experience and access to on-thejob training.86

The struggle for greater flexibility in production has made informal working arrangements more common, affecting women disproportionately.⁸⁷ In India, the decline in women's share of industrial employment (from 21.3 percent in 1989–90 to 17.5 percent in 1994–95) despite high export growth was associated with an increase in subcontracting to home-based workers or small manufacturers that work on a piece-rate basis.⁸⁸ Although more flexible working alternatives may allow women to better balance work and home responsibilities, the advantages of such arrangements need to be assessed against their potential negative impact on wages and other benefits.⁸⁹

Greater flexibility has in some cases also led to higher turnover and job instability. In Turkey, where women benefited from the gender gap in net job creation in the export sectors, female employment was more volatile than men's. ⁹⁰ Similarly, in Colombia, workers employed in less protected sectors have shorter job tenure and are less likely to find work in the formal sector, but these differences are only temporary and not affected by gender. ⁹¹

Perhaps most worrisome about these trends is the realization that old patterns of employment segregation by gender can quickly emerge in these new industries and occupations. So, what initially seemed to be a break from established gender roles in the labor market ends up proving in some cases to be a short-lived deviation. Moreover, the segregation of women seems

to arise as (exporting) firms move up the value chain through recapitalization and retooling of workers, both normally associated with higher productivity and better wages.

IS THE GLASS HALF FULL OR HALF EMPTY? THE NEED FOR PUBLIC ACTION

What, then, are we to conclude from the discussion in this chapter? The evidence suggests that employment in the export sector represents an attractive option for a large number of women in the developing world. These jobs enable women to contribute to household income, increase their economic empowerment within the household, and allow for greater social participation. They sometimes also offer access to government and community-support programs, which would otherwise be inaccessible. So, even where there are negative work attributes, there are also many positives, and women may still prefer this work to the alternatives.

For example, women in Indonesia perceive employment in large-scale export-oriented factories as prestigious, because it pays higher wages and offers better working conditions than jobs in the domestic nonexport sector and local services. Although educated women aspire to nonmanual service employment (such as teaching and tourism), employment in large export-oriented factories seems to offer the best short-term alternative. Similarly, despite the problems faced by female agricultural workers in global production, especially those with flexible and informal work, many still express a preference for this kind of work over the alternatives.

But persistent gender differences in endowments, time availability, access to productive inputs and agency, and pervasive employment segregation by gender, mean that not all women have fully benefited from the economic opportunities brought about by globalization. And even among women who did benefit, remaining gaps, primarily in wages and working conditions, still need to be closed.

CHAPTER SUMMARY Globalization has the potential to contribute to greater gender equality

WHAT WE SEE

The forces unleashed by trade openness, technological change and diffusion, and increased access to information have lifted some of the constraints to greater equality. Not everyone has benefited, however, and it is often women, for whom existing constraints are most binding, who are left behind.

WHY WE SEE THIS

Increased access to economic opportunities

Trade openness and the spread of information and communication technologies (ICTs) have increased women's access to economic opportunities and in some cases increased their wages relative to men's. Growth in export and ICT-enabled sectors, together with a decline in the importance of physical strength and a rise in the importance of cognitive skills, has increased the demand for female labor. ICT has also increased access to markets among female farmers and entrepreneurs by easing time and mobility constraints.

Stronger incentives for action

Several factors associated with a more global world strengthen the incentives for action toward greater gender equality. Gender inequality is more costly in an integrated world because it diminishes a country's ability to compete internationally—particularly if the country specializes in female-intensive goods and services. International peer pressure has also led more countries than ever to ratify

treaties against discrimination, while growing media exposure and consumers' demands for better treatment of workers has pushed multinationals toward fairer wages and better working conditions for women.

Shifting gender roles and norms

Increased access to information, primarily through wider exposure to television and the Internet, allows countries to learn about life and social mores in other places—knowledge that can change perceptions and ultimately promote adoption of more egalitarian attitudes. And increased economic empowerment for women can reinforce this process by promoting changes in gender roles and allowing newly empowered women to influence time allocation, shift relative power within the household, and exercise agency more broadly.

WHAT THIS MEANS FOR POLICY

In the absence of public policy, globalization alone cannot and will not make gender inequality go away. Despite significant increases in agency and in access to economic opportunities for many women in many countries, large gaps remain in some areas. Public action aimed at closing existing gender gaps in endowments, agency, and access to economic opportunities is therefore necessary for countries to fully capitalize on the potential of globalization as a force for development and greater gender equality.

As long as these differences persist, globalization alone cannot—and will not—make gender inequality go away. Public action to close gender gaps is therefore critical for countries to fully capitalize on the potential of globalization as a force for development and greater gender equality. Such action is also urgent in light of the rising costs of gender inequality in a globalized world.

NOTES

- 1. Aguayo-Téllez 2011; Do, Levchenko, and Radd-
- 2. Jacobsen 2011; Rendall 2011.
- 3. Sassen 2011.
- 4. World Bank 2010.
- 5. Aguayo-Téllez, Muendler, and Poole 2010.
- 6. ITU 2010.
- 7. Stern, Dethier, and Rogers 2005.
- 8. This calculation includes data for 51 countries. The developed countries included are Australia; Austria; The Bahamas; Barbados; Belgium; Canada; Cyprus; Denmark; Finland; France; Greece; Hong Kong SAR, China; Hungary; Ireland; Israel; Italy; Japan; Korea, Rep.; Luxembourg; Netherlands; New Zealand; Norway; Portugal; Puerto Rico; San Marino; Singapore; Spain; Sweden; Switzerland; Trinidad and Tobago; United Kingdom; and the United States. The developing countries included are Bangladesh; Botswana; Brazil; Chile; Costa Rica; Egypt, Arab Rep.; El Salvador; Guatemala; Indonesia; Malaysia; Pakistan; Panama; Peru; Philippines; Romania; Sri Lanka; Thailand; Turkey; and Venezuela, RB.
- 9. Fontana 2009.
- 10. Baden and Joekes 1993; Pearson 1999; Standing 1999; Wood 1991.
- 11. Wood and Mayer 2001.
- 12. Mitter 2000.
- 13. Nanda 2000.
- 14. Mitter 2000; Pearson 1998.
- 15. Mitter 2000.
- 16. Barrientos, Kabeer, and Hossain 2004.
- 17. von Braun, Johm, and Puetz 1994; Wold 1997.
- 18. Arizpe and Aranda 1981; Barndt 1999; Barrientos and others 1999; Barrón 1994; Collins 1993; Dolan and Sorby 2003; Thrupp, Bergeron, and Waters 1995.
- 19. Barrientos and others 1999; Barrientos and Kritzinger 2003.
- Dolan and Sorby 2003; Thrupp, Bergeron, and Waters 1995.
- 21. ILO 2002.
- 22. Davin 2001; Fernández-Kelly 1983; Kabeer 2000; Lim 1990.

- 23. Davin 2001.
- 24. Artecona and Cunningham 2002; Berik 2000; Ghiara 1999.
- 25. Bhattacharya 1999; Belghazi 1997, cited in Joekes 1999a.
- 26. Berik, van der Meulen Rodgers, and Zveglich, Jr. 2003; Seguino 1997; Seguino 2000.
- 27. Fussell 2000; Ver Beek 2001.
- 28. Borghans and ter Weel 2004; DiNardo and Pischke 1997; Entorf, Gollac, and Kramarz 1999; Krueger 1993; Lee and Kim 2004.
- 29. Rendall 2010.
- 30. Black and Spitz-Oener 2010. A related strand of the literature has focused on the impact of technological change (and particularly skill-biased technological change) on the demand for skills, where skills are generally measured in terms of workers' levels of education. Both ideas are complementary in the sense that ICT and the computerization of the workplace have changed the nature of work and in the process altered both the relative importance of the various tasks that constitute an occupation and the kind of skills required to perform such occupation.
- 31. Black and Spitz-Oener 2010; Rendall 2010; Weinberg 2000.
- 32. Bacolod and Blum 2010; Black and Spitz-Oener 2010.
- 33. Liu, Tsou, and Hammit 2004; Ng 2006.
- 34. Rendall 2011.
- 35. Ibid.
- 36. Ibid.
- 37. GSMA Development Fund 2010.
- Comfort and Dada 2009; Kyomuhendo 2009; Munyua 2009; GSMA Development Fund 2010.
- 39. Sane and Traore 2009.
- 40. GSMA Development Fund 2010.
- 41. Ibid.
- Melhem, Morrell, and Tandon 2009; Ng and Mitter 2005.
- 43. Yitamben and Tchinda 2009.
- 44. Schaefer Davis 2005.
- 45. Data from Statistics Netherlands 2009. http://www.cbs.nl/en-GB/menu/home/default.htm.
- 46. Mitter 2000; Ng 2001.
- 47. Becker 1957.
- 48. Bhagwati 2004.
- 49. Black and Brainerd 2004; Kongar 2007.
- 50. Do, Levchenko, and Raddatz 2011; van Stavaren and others 2007.
- 51. Do, Levchenko, and Raddatz 2011.
- 52. Ibid.
- 53. Ibid.
- 54. Seguino 1997; Seguino 2000.
- 55. Byrnes and Freeman 2011.
- 56. Gray, Kittilson, and Sandholtz 2006.
- 57. Neumayer and De Soysa 2007.
- 58. Robertson and others 2009.

- 59. Harrison and Scorse 2010.
- 60. Barrientos 2007.
- Hewett, Amin, and Sen. 2001; Kabeer 1997;
 Kabeer 2000; Zohir 1998.
- 62. Hewett, Amin, and Sen. 2001.
- 63. Kusago and Barham 2001; Zohir 1998.
- 64. Elson, Evers, and Gideon. 1996; Katz 1995; von Braun and Kennedy 1994.
- 65. La Ferrara, Chong, and Duryea 2008.
- 66. Jensen and Oster 2007.
- 67. Johnson 2001; Kane and others 1998; Pace 1993; Rogers and others 1999; Valente and others 1994.
- 68. Hossain 2011.
- 69. Feldman 2009; Kabeer 2000.
- 70. Adams 2006; Friedman 2005.
- 71. Sassen 2011.
- 72. Ibid.
- Kumar 1994; Saito, Mekonnen, and Spurling 1994.
- Carr 2004; Tran-Nguyen and Beviglia-Zampetti 2004.
- 75. Hafkin and Taggart 2001.
- 76. OECD 2007.
- 77. Katz 1995; Kusago 2000; McCulloch and Ota 2002; Newman 2001.
- 78. Fontana 2009.
- 79. Joekes 1999b; Porter and Phillips-Howard 1997; von Bülow and Sørensen 1993.
- 80. Maertens and Swinnen 2009.
- 81. Dolan 2001.
- 82. Gill and others 2010.
- 83. Ashby and others 2011; Cecchini and Scott 2003; Cecelski 2000.
- 84. Hafkin and Taggart 2001.
- 85. Barrientos, Kabeer, and Hossain 2004.
- 86. Ibid
- 87. Barrientos and Barrientos 2002; Carr and Chen 2004; Standing 1999.
- 88. Ghosh 2002.
- 89. Barrientos, Kabeer, and Hossain 2004.
- 90. Özler 2007.
- 91. Eslava and others 2011.
- 92. Barrientos, Kabeer, and Hossain 2004; Chiu and Lee 1997.
- 93. Barrientos and others 1999; Barrientos and Barrientos 2002; Dolan and Sorby 2003; SERNAM 2001; Venegas Leiva 1992; Venegas Leiva 1993.
- 94. Chant and McIlwaine 1995; Grijns and others 1994.
- 95. Barrientos, Kabeer, and Hossain 2004.

REFERENCES

The word *processed* describes informally reproduced works that may not be commonly available through libraries.

- Adams, Melinda. 2006. "Regional's Women's Activism: African Women's Networks and the African Union." In *Global Feminism: Transnational Women's Activism, Organizing, and Human Rights*, ed. Mira Marx Ferree and Aili Mari Tripp 187–218. New York: New York University Press.
- Aguayo-Téllez, Ernesto. 2011. "The Impact of Trade Liberalization Policies and FDI on Gender Inequalities. A Literature Review." Background paper for the WDR 2012.
- Aguayo-Téllez, Ernesto, Marc-Andreas Muendler, and Jennifer P. Poole. 2010. "Globalization and Formal Sector Migration in Brazil." *World Development* 38 (6): 840–56.
- Anderson, Richard G., and Charles S. Gascon. 2007. "The Perils of Globalization: Offshoring and Economic Insecurity of the American Worker." Working Paper Series 2007–004A, Federal Reserve Bank of St. Louis, St. Louis.
- Arizpe, Lourdes, and Josefina Aranda. 1981. "The 'Comparative Advantages' of Women's Disadvantages: Women Workers in the Strawberry Export Agribusiness in Mexico." *Signs* 7 (2): 453–73.
- Artecona, Raquel, and Wendy Cunningham. 2002. "Effects of Trade Liberalization on the Gender Wage Gap in Mexico." Gender and Development Working Paper Series 21, World Bank, Washington, DC.
- Ashby, Jacqueline, Maria Hartl, Yianna Lambrou, Gunnar Larson, Annina Lubbock, Eija Pehu, and Catherine Ragasa. 2008. *Investing in Women as Drivers of Agricultural Growth*. Washington, DC: World Bank, Food and Agriculture Organization, and International Fund for Agricultural Development.
- Bacolod, Marigee, and Bernardo S. Blum. 2010. "Two Sides of the Same Coin: U.S. "Residual" Inequality and the Gender Gap." *Journal of Human Resources* 45 (1): 197–242.
- Baden, Sally, and Susan Joekes. 1993. "Gender Issues in the Development of the Special Economic Zones and Open Areas in the People's Republic of China." Paper presented at the seminar on Women in the Economy, Fudan University, Shanghai, May 15.
- Baily, Martin Neil, and Robert Z. Lawrence. 2004. "What Happened to the Great U.S. Job Machine? The Role of Trade and Electronic Offshoring." Brooking Papers on Economic Activity 2: 211–70.
- Balakrishnan, Radhika, ed. 2002. *The Hidden Assembly Line: Gender Dynamics of Subcontracted Work in a Global Economy*. Bloomfield, CT: Kumarian Press
- Barndt, Deborah, ed. 1999. Women Working the NAFTA Food Chain: Women, Food & Globalization. Toronto: Sumach Press.
- Barrientos, Armando, and Stephanie Ware Barrientos. 2002. "Extending Social Protection to Infor-

- mal Workers in the Horticulture Global Value Chain." Social Protection Discussion Paper Series 216, World Bank, Washington, DC.
- Barrientos, Stephanie. 2007. "Gender, Codes of Conduct, and Labor Standards in Global Production Systems." In *The Feminist Economics of Trade*, ed. Irene van Stavaren and others. London: Routledge.
- Barrientos, Stephanie, Anna Bee, Ann Matear, and Isabel Vogel. 1999. Women and Agribusiness: Working Miracles in the Chilean Fruit Export Sector. Basingstoke, U.K.: Macmillan.
- Barrientos, Stephanie, Naila Kabeer, and Naomi Hossain. 2004. "The Gender Dimensions of the Globalization of Production." Policy Integration Department Working Paper Series 17, International Labour Organization Geneva.
- Barrientos, Stephanie, and A. Kritzinger. 2003. "The Poverty of Work and Social Cohesion in Global Exports: The Case of South African Fruit." In What Holds Us Together. Social Cohesion in South Africa, ed. David Chidester, Phillip Dexter, and Wilmot James. Cape Town: HSRC Press.
- Barrón, Antonieta. 1994. "Mexican Rural Women Wage Earners and Macro-Economic Policies." In *The Strategic Silence: Gender and Economic Policy*, ed. Isabella Bakker. London: Zed Books.
- Becker, Gary S. 1957. *The Economics of Discrimination*. Chicago: University of Chicago Press.
- Belghazi, S. 1997. "Rethinking the Viability of a Low Wage Export Strategy in Morocco." Focus on Integrating Gender into the Politics of Development: Gender Programme Newsletter No. 3, United Nations Research Institute for Social Development, Geneva.
- Berik, Günseli. 2000. "Mature Export-Led Growth and Gender Wage Inequality in Taiwan." *Feminist Economics* 6 (3): 1–26.
- Berik, Günseli, Yana van der Meulen Rodgers, and Joseph E. Zveglich Jr. 2003. "Does Trade Promote Gender Wage Equity? Evidence from East Asia." Working Paper Series 372, The Levy Economic Institute of Bard College, Annandale-on-Hudson, NY.
- Bhagwati, Jagdish. 2004. *In Defense of Globalization*. New York: Oxford University Press.
- Bhattacharya, Debapriya. 1999. "The Post-MFA Challenges to the Bangladesh Textile and Clothing Sector." Paper presented at the United Nations Conference on Trade and Development, Geneva, July 12.
- Bivens, L. Josh. 2004. "Shifting Blame for Manufacturing Job Loss: Effect of Rising Trade Deficit Shouldn't Be Ignored." Briefing Paper 149, Economic Policy Institute, Washington, DC.
- ——. 2006. "Trade Deficits and Manufacturing Job Loss: Correlation and Causality." Briefing Paper 171, Economic Policy Institute, Washington, DC.

- Black, Sandra E., and Elizabeth Brainerd. 2004. "Importing Equality? The Impact of Globalization on Gender Discrimination." *Industrial and Labor Relations Review* 57 (4): 540–59.
- Black, Sandra E., and Alexandra Spitz-Oener. 2010. "Explaining Women's Success: Technological Change and the Skill Content of Women's Work." Review of Economics and Statistics 92 (1): 187–94.
- Borghans, Lex, and Bas ter Weel. 2004. "Are Computer Skills the New Basic Skills? The Returns to Computer, Writing and Math Skills in Britain." *Labour Economics* 11 (1): 85–98.
- Byrnes, Andrew, and Marsha A. Freeman. 2011. "The Impact of the CEDAW Conventions: Paths to Equality. A Study for the World Bank." Background paper for the WDR 2012.
- Carr, Marilyn, ed. 2004. Chains of Fortune: Linking Women Producers and Workers with Global Markets. London: Commonwealth Secretariat.
- Carr, Marilyn, and Martha Chen. 2004. "Globalization, Social Exclusion and Gender." *International Labour Review* 143 (1–2): 129–60.
- Cecchini, Simone, and Christopher Scott. 2003. "Can Information and Communications Technology Applications Contribute to Poverty Reduction? Lessons from Rural India." *Information Technology for Development* 10 (2): 73–84.
- Cecelski, Elizabeth. 2000. *The Role of Women in Sustainable Energy Development*. Golden, CO: National Renewable Energy Laboratory.
- Chant, Sylvia, and Cathy McIlwaine. 1995. Women of a Lesser Cost: Female Labour, Foreign Exchange and Philippine Development. London: Pluto Press.
- Chiu, Stephen W. K., and Ching Kwan Lee. 1997. "After the Hong Kong Miracle: Women Workers under Industrial Restructuring in Hong Kong." *Asian Survey* 37 (8): 752–70.
- Collins, Jane L. 1993. "Gender, Contracts and Wage Work: Agricultural Restructuring in Brazil's São Francisco Valley." *Development and Change* 24 (1): 53–82.
- Comfort, Kazanka, and John Dada. 2009. "Rural Women's Use of Cell Phones to Meet Their Communication Needs: A Study from Northern Nigeria." In *African Women and ICTs: Investigating Technology, Gender and Empowerment*, ed. Ineke Buskens and Anne Webb. London: Zed Books.
- Davin, Delia. 2001. *The Impact of Export-oriented Manufacturing on Chinese Women Workers.* New York: United Nations Research Institute for Social Development.
- DiNardo, John E., and Jorn-Steffen Pischke. 1997. "The Returns to Computer Use Revisited: Have Pencils Changed the Wage Structure Too?" *Quarterly Journal of Economics* 112 (1): 291–303.
- Do, Quy-Toan, Andrei Levchenko, and Claudio Raddatz. 2011. "Engendering Trade." Background paper for the WDR 2012.

- Dolan, Catherine S. 2001. "The 'Good Wife': Struggles over Resources in the Kenyan Horticultural Sector." *Journal of Development Studies* 37 (3): 39–70.
- Dolan, Catherine, and Kristina Sorby. 2003. "Gender and Employment in High-Value Agriculture Industries." Agriculture and Rural Development Working Paper Series 7, World Bank, Washington, DC.
- Elson, Diane, Barbara Evers, and J. Gideon. 1996. "Gender-Aware Coun-try Economic Reports: Concepts and Sources." GENCON Unit Working Paper 1, University of Manchester Graduate School of Social Science, Manchester, U.K.
- Entorf, Horst, Michel Gollac, and Francis Kramarz. 1999. "New Technologies, Wages, and Worker Selection." *Journal of Labor Economics* 17 (3): 464–91.
- Eslava, Marcela, John Haltiwanger, Adriana Kugler, and Maurice Kugler. 2011. "Trade Liberalization and Worker Displacement: Evidence from Trade Reforms in Colombia." World Bank, Washington, DC. Processed.
- Feldman, Shelley. 2009. "Historicizing Garment Manufacturing in Bangladesh: Gender, Generation, and New Regulatory Regimes." *Journal of International Women's Studies* 11 (1): 268–88.
- Fernández-Kelly, María Patricia. 1983. For We Are Sold, I and My People: Women and Industry in Mexico's Frontier. Albany, NY: State University of New York Press.
- Fontana, Marzia. 2009. "The Gender Effects of Trade Liberalization in Developing Countries: A Review of the Literature." In *Gender Aspects of Trade and Poverty Nexus: A Macro-Micro Approach*, ed. Maurizio Bussolo and Rafael E. de Hoyos. Washington, DC: Palgrave and McMillan for the World Bank.
- Foster, Andrew D., and Mark R. Rosenzweig. 1996. "Technical Change and Human-Capital Returns and Investments: Evidence from the Green Revolution." *American Economic Review* 86 (4): 931–53.
- Franklin, Victoria L., Annalu Waller, Claudia Pagliari, and Stephen A. Greene. 2006. "A Randomized Controlled Trial of Sweet Talk: A Text-Messaging System to Support Young People with Diabetes." *Diabetic Medicine* 23 (12): 1332–8.
- Freeman, Richard B., ed. 1994. Working under Different Rules. New York: Russell Sage Foundation.
- Friedman, Elisabeth Jay. 2005. "The Reality of Virtual Reality: The Internet and Gender Equality Advocacy in Latin America." *Latin America Politics & Society* 47 (3): 1–34.
- Fussell, Elizabeth. 2000. "Making Labor Flexible: The Recomposition of Tijuana's Maquiladora Female Labour Force." *Feminist Economics* 6 (3): 59–79.
- Ghiara, Ranjeeta. 1999. "Impact of Trade Liberalisation on Female Wages in Mexico: An Econometric Analysis." *Development Policy Review* 17 (2): 171–90.

- Ghosh, Jayati. 2002. "Globalization, Export-Oriented Employment for Women and Social Policy: A Case Study of India." Social Scientist 30 (11/12): 17–60.
- Gill, Kirrin, Kim Brooks, Janna McDougall, Payal Patel, and Aslihan Kes. 2010. *Bridging the Digital Divide: How Technology Can Advance Women Economically*. Washington, DC: International Center for Research on Women.
- Gray, Mark M., Miki Caul Kittilson, and Wayne Sandholtz. 2006. "Women and Globalization: A Study of 180 Countries, 1975–2000." *International Organization* 60 (2): 293–333.
- Grijns, Mies, Ines Smyth, Anita Van Velzen, Sugiah Machfud, and Pudjiwati Sayago, eds. 1994. *Different Women, Different Work: Gender and Industrialisation in Indonesia*. Brookfield, VT: Avebury.
- GSMA Development Fund. 2010. Women and Mobile: A Global Opportunity: A Study on the Mobile Phone Gender Gap in Low and Middle Income Countries. London: GSMA and the Cherie Blair Foundation for Women.
- Hafkin, Nancy, and Nancy Taggart. 2001. *Gender, Information Technology, and Developing Countries; An Analytical Study*. Washington, DC: U.S. Agency for International Development.
- Harrison, Ann, John McLaren, and Margaret S. McMillan. 2010. "Recent Findings on Trade and Inequality." Working Paper Series 16425, National Bureau of Economic Research, Cambridge, MA.
- Harrison, Ann, and Jason Scorse. 2010. "Multinational and Anti-Sweatshop Activism." *American Economic Review* 100 (1): 247–73.
- Hewett, Paul C., Sajeda Amin, and Binayak Sen. 2001. "Assessing the Impact of Garment Work on Quality of Life Measures." In *Growth of the Garment Industry in Bangladesh: Economic and Social Dimensions*, ed. Binayak Sen. Dhaka: UPL Publications.
- Hossain, Naomi. 2011. "Exports, Equity and Empowerment: The Effects of Readymade Garments Manufacturing Employment on Gender Equality in Bangladesh." Background paper for the WDR 2012.
- ILO (International Labour Organization). 2002. Women and Men in the Informal Economy: A Statistical Picture. Geneva: ILO.
- ITU (International Telecommunications Union). 2010. Measuring the Informal Society. Geneva: ITU.
- Jacobsen, Joyce P. 2011. "The Role of Technological Change in Increasing Gender Equity with a Focus on Information and Communications Technology." Background paper for the WDR 2012.
- Jensen, Robert. 2010a. "Economic Opportunities and Gender Differences in Human Capital: Experimental Evidence for India." Working Paper Series 16021, National Bureau of Economic Research, Cambridge, MA.

- Jensen, Robert, and Emily Oster. 2007. "The Power of TV: Cable Television and Women's Status in India." Working Paper Series 13305, National Bureau of Economic Research, Cambridge, MA.
- Joekes, Susan. 1999a. "A Gender-Analytical Perspective on Trade and Sustainable Development." Paper presented at the United Nations Conference on Trade and Development, Geneva, July 12.
- . 1999b. "Gender, Property Rights and Trade: Constraints to Africa Growth." In *Enterprise in Africa: Between Poverty and Growth*, ed. Kenneth King and Simon McGrath. London: Intermediate Technology Development Group.
- Johnson, Kirk. 2001. "Media and Social Change: The Modernizing Influences of Television in Rural India." *Media, Culture and Society* 23 (2): 147–69.
- Kabeer, Naila. 1997. "Women, Wages and Intrahousehold Power Relations in Urban Bangladesh." Development and Change 28 (2): 261–302.
- ——. 2000. The Power to Choose: Bangladeshi Women and Labour Market Decisions in London and Dhaka. London: Verso.
- Kane, Thomas, T. Mohamadou Gueye, Ilene Speizer, Sara Pacque-Margolis, and Danielle Baron. 1998. "The Impact of a Family Planning Multimedia Campaign in Bamako, Mali." *Studies in Family Planning* 29 (3): 309–23.
- Kanwar, Asha S., and Margaret Taplin, eds. 2001. Brave New Women of Asia: How Distance Education Changed Their Lives. Vancouver: Commonwealth of Learning.
- Katz, Elizabeth G. 1995. "Gender and Trade within the Household: Observations from Rural Guatemala." *World Development* 23 (2): 327–42.
- Kongar, Ebru. 2007. "Importing Equality or Exporting Jobs? Competition and Gender Wage and Employment Differentials in U.S. Manufacturing." In *The Feminist Economics of Trade*, ed. Irene van Stavaren and others. London: Routledge.
- Krueger, Alan B. 1993. "How Computers Have Changed the Wage Structure: Evidence from Microdata, 1984–1989." *Quarterly Journal of Economics* 108 (1): 33–60.
- Kumar, Shubh K. 1994. Adoption of Hybrid Maize in Zambia: Effects on Gender Roles, Food Consumption, and Nutrition. Washington, DC: International Food Policy Research Institute.
- Kusago, Takayoshi. 2000. "Why Did Rural Households Permit Their Daughters to Be Urban Factory Workers? A Case from Rural Malay Villages." Labour and Management in Development Journal 1 (2): 3–24.
- Kusago, Takayoshi, and Bradford L. Barham. 2001. "Preference Heterogeneity, Power, and Intrahousehold Decision-Making in Rural Malaysia." World Development 29 (7): 1237–56.

- Kyomuhendo, Grace Bantebya. 2009. "The Mobile Payphone Business: A Vehicle for Rural Women's Empowerment in Uganda." In *African Women and ICTs: Investigating Technology, Gender and Empowerment*, ed. Ineke Buskens and Anne Webb. London: Zed Books.
- La Ferrara, Eliana, Alberto Chong, and Suzanne Duryea. 2008. "Soap Operas and Fertility: Evidence from Brazil." Working Paper Series 633, Inter-American Development Bank, Washington, DC.
- Lawrence, Robert Z. 2008. Blue-Collar Blues: Is Trade to Blame for Rising U.S. Income Inequality? Washington, DC: Peterson Institute for International Economics.
- Lee, Sang-Hyop, and Jonghyuk Kim. 2004. "Has the Internet Changed the Wage Structure Too?" *Labour Economics* 11 (1): 119–27.
- Lester, Richard T., Paul Ritvo, Edward J. Mills, Antony Kariri, Sarah Karanja, Michael H. Chung, William Jack, James Habyarimana, Mohsen Sadatsafavi, Mehdi Najafzadeh, Carlo A. Marra, Benson Estambale, Elizabeth Ngugi, T. Blake Ball, Lehana Thabane, Lawrence J. Gelmon, Joshua Kimani, Marta Ackers, and Francis A. Plummer. 2010. "Effects of a Mobile Phone Short Message Service on Antiretroviral Treatment Adherence in Kenya (WelTel Kenya 1): A Randomized Trial." *Lancet* 376 (9755): 1838–45.
- Levinsohn, James A. 2007. "Globalization and the Returns to Speaking English in South Africa." In *Globalization and Poverty*, ed. Ann Harrison. Chicago: University of Chicago Press.
- Levy, Frank, and Richard J. Murnane. 1992. "U.S. Earnings Level and Earnings Inequality: A Review of Recent Trends and Proposed Explanations." *Journal of Economic Literature* 30 (3): 1333–81.
- Lim, Linda. 1990. "Women's Work in Export Factories: The Politics of a Cause." In *Persistent Inequalities: Women and World Development*, ed. Irene Tinker. New York: Oxford University Press.
- Liu, Jin-Tan, Meng-Wen Tsou, and James K. Hammit. 2004. "Computer Use and Wages: Evidence from Taiwan." *Economics Letters* 82 (1): 43–51.
- Maertens, Miet, and Johan F. M. Swinnen. 2009. "Trade, Standards, and Poverty: Evidence from Senegal." *World Development* 37 (1): 161–78.
- McCulloch, Neil, and Masako Ota. 2002. "Export Horticulture and Poverty in Kenya." Working Paper Series 174, Institute of Development Studies, Brighton, U.K.
- Melhem, Samia, Claudia Morrell, and Nidhi Tandon. 2009. "Information and Communication Technologies for Women's Socio-economic Empowerment." Working Paper 176, World Bank, Washington, DC.
- Mitter, Swasti. 2000. "Teleworking and Teletrade in India: Combining Diverse Perspectives and Visions." *Economic and Political Weekly* 35 (26): 2241–52.

- Munyua, Alice Wanjira. 2009. "Women Entrepreneurs in Nairobi: Examining and Contextualizing Women's Choices." In African Women and ICTs: Investigating Technology and Gender and Empowerment, ed. Ineke Buskens and Anne Webb. London: Zed Books.
- Nanda, Meera. 2000. "Post-Fordist Technology and the Changing Patterns of Women's Employment in the Third World." *Gender, Technology and Development* 4 (1): 25–59.
- Neumayer, Eric, and Indra De Soysa. 2007. "Globalization, Women's Economic Rights and Forced Labour." World Economy 30 (10): 1510–35.
- Newman, Constance. 2001. "Gender, Time Use, and Change: Impacts of Agricultural Export Employment in Ecuador." Gender and Development Working Paper Series 18, World Bank, Washington, DC.
- Ng, Cecilia, ed. 2001. *Teleworking and Development in Malaysia*. Penang, Malaysia: United Nations Development Programme, Malaysia Southbound.
- Ng, Cecilia, and Swasti Mitter, eds. 2005. *Gender and the Digital Economy: Perspectives from the Developing World.* New Delhi: Sage Publications.
- Ng, Ying Chu. 2006. "Levels of Computer Self-Efficacy, Computer Use and Earnings in China." *Economics Letters* 90 (3): 427–32.
- OECD (Organisation for Economic Co-operation and Development). 2007. *OECD Employment Outlook 2007*. Paris: OECD.
- Oster, Emily, and M. Bryce Millet. 2010. "Do Call Centers Promote School Enrollment? Evidence from India." Working Paper Series 15922, National Bureau of Economic Research, Cambridge, MA.
- Özler, Sule. 2007. "Export-led Industrialization and Gender Differences in Job Creation and Destruction: Micro-evidence from the Turkish Manufacturing Sector." In *The Feminist Economy of Trade*, ed. Irene van Stavaren and others. London: Routledge.
- Pace, Richard. 1993. "First Time Televiewing in Amazônia: Television Acculturation in Gurupá, Brazil." *Ethnology* 32 (2): 187–205.
- Pearson, Ruth. 1993. "Gender and New Technology in the Caribbean." In *Women and Change in the Caribbean: New Work for Women?* ed. Janet Monsen. London: James Currey.
- —. 1998. "Nimble Fingers Revisited: Reflections on Women and Third World Industrialization in the Late Twentieth Century." In *Feminist Visions* of *Development*, ed. Cecile Jackson and Ruth Pearson. London: Routledge.
- Porter, Gina, and Kevin Phillips-Howard. 1997. "Comparing Contracts: An Evaluation of Contract Farming Schemes in Africa." *World Development* 25 (2): 227–38.
- Rendall, Michelle. 2010. "Brain versus Brawn: The Realization of Women's Comparative Advantage." Working Paper Series 306, University of Zurich Department of Economics, Center for In-

- stitutions, Policy and Culture in the Development Process, Zürich.
- ——. 2011. "Technical Change in Developing Countries: Has It Decreased Gender Inequality?" Background paper for the WDR 2012.
- Robertson, Raymond, Drusilla Brown, Gaelle Pierre, and Maria Laura Sanchez-Puerta. 2009. *Globalization, Wages, and the Quality of Jobs: Five Country Studies.* Washington, DC: World Bank.
- Rogers, Everett M., Peter W. Vaughan, Ramadhan M. A. Swalehe, Nagesh Rao, Peer Svenkerud, and Suruchi Sood. 1999. "Effects of an Entertainment-Education Radio Soap Opera on Family Planning Behavior in Tanzania." *Studies in Family Planning* 30 (3): 193–211.
- Saito, Katrine A., Hailu Mekonnen, and Daphne Spurling. 1994. "Raising the Productivity of Women Farmers in Sub-Saharan Africa." Africa Technical Department Discussion Paper Series 230, World Bank, Washington, DC.
- Sane, Ibou, and Mamadou Balla Traore. 2009. "Mobile Phones in a Time of Modernity: The Quest for Increased Self-Sufficiency among Women Fishmongers and Fish Processors in Dakar." In African Women and ICTs: Investigating Technology, Gender and Empowerment, ed. Ineke Buskens and Anne Webb. London: Zed Books.
- Sassen, Saskia. 2011. "Digital Technology and Gender." Background paper for the WDR 2012.
- Schaefer Davis, Susan. "Women Weavers Online: Rural Moroccan Women on the Internet." In *Gender and the Digital Economy: Perspectives from the Developing World*, ed. Cecilia Ng and Swasti Mitter. New Dehli: Sage Publications.
- Scheve, Kevin, and Matthew J. Slaughter. 2004. "Economic Insecurity and the Globalization of Production." *American Journal of Political Science* 48 (4): 662–74.
- Seguino, Stephanie. 1997. "Gender Wage Inequality and Export Led Growth in South Korea." *Journal of Development Studies* 34 (2): 102–32.
- . 2000. "The Effects of Structural Change and Economic Liberalisation on Gender Wage Differentials in South Korea and Taiwan." *Cambridge Journal of Economics* 24 (4): 437–59.
- SERNAM (Servicio Nacional de la Mujer). 2001. Acuerdos de las Comisiones de la Agro-exportación para Trabajadores y Trabajadoras Agrícolas de Temporada. Santiago de Chile: SERNAM.
- Standing, Guy. 1999. "Global Feminization through Flexible Labor: A Theme Revisited." World Development 27 (3): 583–602.
- Stern, Nicholas, Jean-Jacques Dethier, and F. Halsey Rogers. 2005. Growth and Empowerment: Making Development Happen. Cambridge, MA: MIT Press.
- Thrupp, Lori Ann, Gilles Bergeron, and William F. Waters. 1995. *Bittersweet Harvests for Global*

- Supermarkets: Challenges in Latin America's Agricultural Export Boom. Washington, DC: World Resources Institute.
- Tran-Nguyen, Anh-Nga, and Americo Beviglia-Zampetti. 2004. *Trade and Gender: Opportunities and Challenges for Developing Countries.* Geneva: United Nations Conference on Trade and Development.
- Valente, Thomas W., Young Mi Kim, Cheryl Lettenmaier, William Glass, and Yankuba Dibba. 1994.
 "Radio Promotion of Family Planning in The Gambia." *International Family Planning Perspectives* 20 (3): 96–100.
- van Stavaren, Irene, Diane Nelson, Caren Grown, and Nilüfer Cagatay. 2007. *The Feminist Economy of Trade*. London: Routledge.
- Venegas Leiva, Sylvia. 1992. *Una Gota al Día . . . un Chorro al Año. El Impacto Social de la Expansión Frutícola*. Santiago de Chile: LOM Ediciones.
- . 1993. "Programas de Apoyo a Temporeros y Temporeras en Chile." In *Los Pobres del Campo: El Trabajador Eventual*, ed. Sergio Gómez and Emilio Klein. Santiago de Chile: FLACSO/PREALC and International Labour Organization.
- Ver Beek, Kurt Alan. 2001. "Maquiladoras: Exploitation or Emancipation? An Overview of the Situation of Maquiladora Workers in Honduras." World Development 29 (9): 1553–67.
- von Braun, Joachim, Ken B. Johm, and Detlev Puetz. 1994. "Nutritional Effects of Commercialization of a Woman's Crop: Irrigated Rice in The Gambia." In *Agricultural Commercialization, Economic Development, and Nutrition*, ed. von Braun and Kennedy. Baltimore, MD: Johns Hopkins University Press for International Food Policy Research Institute.

- von Braun, Joachim, and Eileen Kennedy, eds. 1994. Agricultural Commercialization, Economic Development, and Nutrition. Baltimore, MD: Johns Hopkins University Press for International Food Policy Research Institute.
- von Bülow, Dorthe, and Anne Sørensen. 1993. "Gender and Contract Farming: Tea Outgrower Schemes in Kenya." *Review of African Political Economy* 56: 38–52.
- Weinberg, Bruce A. 2000. "Computer Use and the Demand for Female Workers." *Industrial and Labor Relations Review* 53 (2): 290–308.
- Wold, Bjorn K., ed. 1997. Supply Response in a Gender-Perspective: The Case of Structural Adjustment in Zambia. Reports 97/23. Oslo: Statistics Norway.
- Wood, Adrian. 1991. "North-South Trade and Female Labour in Manufacturing: An Asymmetry." *Journal of Development Studies* 27 (2): 168–89.
- ——. 1995. "How Trade Hurts Unskilled Workers." *Journal of Economic Perspectives* 9 (3): 57–80.
- Wood, Adrian, and Jörg Mayer. 2001. "Africa's Export Structure in a Comparative Perspective." *Cambridge Journal of Economics* 25 (3): 369–94.
- World Bank. 2010. World Development Indicators. Washington, DC: World Bank.
- Yitamben, Gisele, and Elise Tchinda. 2009. "Internet Use Among Women Entrepreneurs in the Textile Sector in Douala, Cameroon: Self-Taught and Independent." In *African Women and ICTs: Investigating Technology, Gender and Empowerment*, ed. Ineke Buskens and Anne Webb. London: Zed Books.
- Zohir, S. C. 1998. "Gender Implications of Industrial Reforms and Adjustment in the Manufacturing Sector of Bangladesh." PhD thesis, University of Manchester, Manchester, U.K.

SPREAD 3

Changing ages, changing bodies, changing times—Adolescent boys and girls

cross urban and rural communities in eight countries, 800 girls and boys between the ages of 11 and 17 talked about their everyday life, their use of time, their aspirations and hopes for the future, and what it means to be a girl or a boy today.\(^1\) Aware of the demands and opportunities of today's world, boys and girls deeply value education and aspire to good jobs. Their answers and conversations also bring to light how early in life gender differences emerge and how expected gender roles and behaviors permeate all aspects of their everyday lives—from their relation with their parents to their evaluation of each other. That includes their definitions of what constitutes appropriate behavior—what it means to be a good or bad girl, a good or bad boy (spread figure 3.1).

Dedicating effort to study and doing well in school are defining attributes of good girls and boys alike and one of their main responsibilities. Second to school for girls comes helping at home. Other markers of a good girl include individual character traits—such as being obedient and respectful. In contrast, lack of modesty in dress and going out without a specific purpose or staying out late are perceived as inappropriate behavior for girls. For boys, risky behaviors—smoking, drinking, drug use—are central in the definition of a bad boy, and a good boy is defined as a boy who does not have these behaviors.

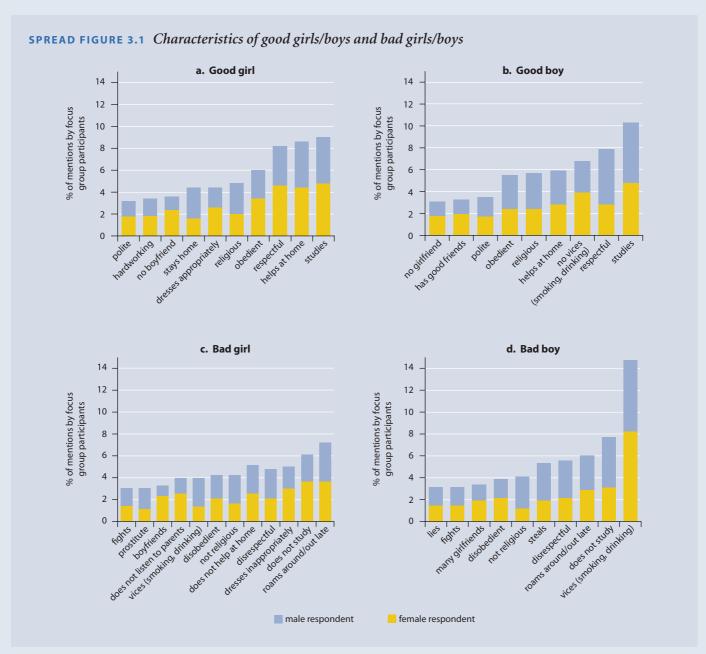
Adolescents and their parents alike place a high value on education. Most of the adolescents surveyed were attending school at the time of the survey, except for a quarter of the girls and boys participating in India. These girls and boys had left school at different stages from grades 1 to 10, the majority around grade 5 or 6. The girls left school to help at home or in home agricultural production, while boys left to work as painters, carpenters, and mechanics in urban areas and as agricultural workers in rural communities.

In all cases, the adolescents' participation in school and their decision to leave largely depended on parental views about education, which have changed over time, particularly for daughters, as a woman from the Red Sea region in North Sudan narrates:

I was born in 1963 in a middle-income family of a Bega tribe. Things were very different then. When I became seven years of age, I began to help my mother in home farming and household duties. Women in our area do not work in farms but they help in seeding and harvesting. I did not go to school, because there was no school in our village. Also, there was no girl's education, and there was not one educated girl in our area. It was believed that girls' education was shameful. When I was 17 years old, they married me to my cousin without asking me. We had seven children, three girls and four boys. All my daughters started school but only one of them passed grade 4 and continues studying. . . . I hope, God willing, that she would continue and complete her education to the highest level reached by any girl in the village. Yes, now I have changed my ideas to education, especially to girls' education.

Girls and boys have the expectation that getting an education will give them a better future than their parents had and that it will allow them to meet their aspirations: "School is very important, I see my big brothers who are civil servants and I want to be like them" (young man, Burkina Faso). "Education lets us join the modern world, and offers us better jobs now; in the past it was not important since our people were farmers and were not paying attention to their future or look[ing] to change their present" (young man, North Sudan). "Brighter future, less hard work than being farmers, better economic life" (young man, Vietnam). "Complete education up to university to get a job, then become an educated mother" (young woman, North Sudan).

But they are also aware that they may not reach the education levels they wish. When asked to compare their desires with reality, all girls surveyed in Bhutan, Burkina Faso, and the Republic of Yemen said they would like to attain at least a college degree, but rural girls are aware that their schooling is unlikely to extend beyond secondary level, if they are lucky. Fijian girls and girls from the West Bank and Gaza feel that they will meet their dream of a college degree. The overwhelming majority of girls in India aspire to a degree, but when asked about how far they are really likely to go in their education, answers vary, and some think they may just make it to secondary school and not fulfill their dreams to become doctors, lawyers, or engineers. Boys too aspire to college and professional degrees, but in Burkina Faso and rural Fiji, they are aware that many will not make it past primary school. And while some Gaza boys share dreams of advanced tertiary education, they know they are likely to stop their schooling at secondary level. Some boys from Burkina Faso do not really want to go beyond primary levels. And



Source: WDR 2012 team calculations, based on "Defining Gender in the 21st Century: A Multi-Country Assessment" (dataset).

boys in the Dominican Republic share the perception that studying is not the best path to a better future.

The reasons that explain the gap between their wishes and reality range from physical distance to economic hardship to gender roles. Distance and lack of infrastructure affects boys and girls alike, but girls have more difficulties when there is no school in their village or when their friends start dropping out and they have no peers to join them on their journey to school. In all places, girls face more mobility restrictions than boys do. Boys and girls are also affected by their family's economic situa-

tion. Boys leave school to contribute to family income, girls to help at home. In these cases, the number and order of children play a role in parents' decisions. "If possible, all the children are sent to school; if there is a financial problem, younger children are sent to school and older kids are sent to work," a boy in India pointed out. Girls from other communities in the country offered similar explanations.

Gender differences also play in the decision to leave school. In Bhutan, Burkina Faso, India, North Sudan, and the Republic of Yemen, girls leave school to prepare for future marital duties, to keep them safe from danger, or to prevent unwanted pregnancies: "My boyfriend got in the way of my education when I got in the 6th grade, I got pregnant" (young woman, Liberia). "It was my own fault. I had a boyfriend and got pregnant while still in school. I left school and had to stay home" (young woman, Papua New Guinea).

Prevalent views of gender roles and binding social norms shape adolescents' daily lives. The expectation is that girls will help in the house, and their responsibility for certain chores means that, in general, girls enjoy less free time than boys. Across four communities in Burkina Faso, it was unanimously recognized that "boys devote more time to having a good time because they have more free time, they don't have to wash or prepare food." A group of girls in the Dominican Republic complained, "We have to clean the floors, we have to wash, we have to look after our siblings, we have so many things to do!!" Almah, from rural Papua New Guinea, explains, "Boys do nothing to help. They look for their friends to tell stories, and roam the streets the whole day, chewing gum, listening to music, sleeping, and resting. Girls take care of all household chores, collect firewood, and fetch water. Daughters have to take over housework, and they have no free time." Sangay, a boy from Bhutan, agrees, "Girls spend most of the time working at home and they play less, whereas boys play more and work less at our age."

While boys are expected to help, their tasks are more contained and take less of their time: "Boys don't have specific tasks to do. They go shopping within the neighborhood whenever that is needed, but this doesn't take more than an hour daily." "I would help at home if I am requested to do, but nobody asks me" (young man, North Sudan). And while they devote some of their free time to studying, boys say they would like to have ways to use their time in a more productive way, in part responding to social norms of their future roles as income providers for their households: "I would like to work more and play less Nintendo" (young man, Dominican Republic). "Rather than staying at home and doing nothing, I would be happy if I could get money and start a small business" (South Africa). "We would very much like to get a job or anything useful to use our free time" (West Bank and Gaza). "We want to engage in activities that will bring income" (Afghanistan).

Adolescence, a time to transition into adulthood, is also a time when many form a family and have children. In two of every five communities in all 19 countries in the assessment, young women said that girls are often married and have children before they reach age 17. In 11 of the 19 countries, young women said marriage and childbirth was common for girls under the age of 15, more so in rural than urban settings. The early onset of sexual activity was in some cases associated with early marriage,

but not always: "I got married when I was 10 years old, and I had a child when I was 15 years old. . . . This is not the right age. It is good only if they have a child at the age of 18 or more. It is good for a girl to have a child when she is able to think what is right and what is wrong" (young woman, India). In the Dominican Republic most girls say that they start having sex—and becoming mothers—at age 13. "A friend of mine is 11, and she is pregnant," said a girl from Santo Domingo. In Tanzania, the average age for first pregnancy was seen to be 15. "But there are girls who have got their first child at the age of 12," said a young woman. "Sometimes you can die for having a baby this early," recognized another girl in Liberia.

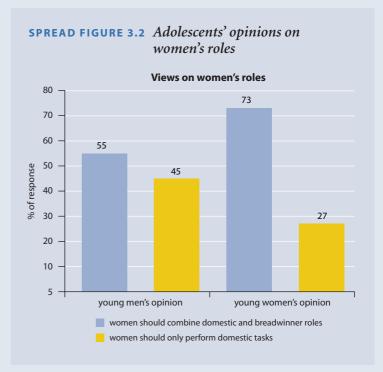
Most surprising, no adolescent girl or boy in any discussion group indicated that childbirth at such a young age was desirable or acceptable. In fact, when asked about the ideal and desired age to start a family, most said age 18 or older for both marriage and childbirth. There were no reports of boys under the age of 15 becoming fathers, and they recognize that they begin their sexual activity later than girls. In Peru, where 16 was the youngest age of sexual activity reported for boys, early onset of sexual relations also determines early household formation; while couples do not formally marry, they start cohabiting once the girl is pregnant, acknowledging that the pregnancy is "a shared mistake," as a boy called it.

Having a boyfriend or a girlfriend at an early age was part of what groups defined as bad behavior. For boys, bad behavior extends to bad habits and bad company. Violence and smoking or drinking were frequently mentioned, as was participation in gangs and in groups of boys that bully other boys or harass girls in the street (see spread figure 3.1). The bad company was associated with boys staying out late more often; increasing their exposure to drugs, alcohol, and other bad habits; and losing interest in their studies. While girls are pulled into the house, boys are pushed out of it. This freedom of movement puts boys more at risk than girls. "The boys are happy when they are a free man and the girls are happy to be in their home," said boys in North Sudan. "Boys, they take their bikes and scoot off and roam around in villages here and there" (young man, Fiji). "Boys can influence each other into becoming more violent. Girls aren't violent at all" (adolescent boy, West Bank and Gaza). "Boys are in gangs and fight each other with machetes, stones, and guns" (adolescent boys, Dominican Republic).

Girls are more restricted to the home space. Boys and girls say that girls enjoy being at home or spending time with their friends "We feel happy when we play together or we mingle with friends, the feeling of togetherness makes us happy" (young woman, India). But some of these perceptions are related to specific restrictions on girls' ability to move about freely and to have free time. "They

have more freedom to be out, girls have limits." "Girls are afraid that if they go out something can happen to them or they can get raped," said girls and boys in the Dominican Republic. Their peers in other countries agree: "Boys can be as free as they wish and that is alright. Girls cannot go out in the evening. Boys can go anywhere they wish" (Indonesia). "Boys are free to move around the community. Wherever they go they don't worry and no one questions them" (Republic of Yemen). "Girls have to find fun inside the house because they are not allowed to go out like the boys" (West Bank and Gaza). "Women should stay home. . . . It is preferred to be at home and not go out on the street or any other place" (North Sudan).

But girls are willing and open to challenge the norms that confine them to the domestic sphere. While young men have a more traditional view of the role of women in the household, girls aspire to a different life from their mothers and want to combine productive and reproductive tasks (spread figure 3.2). While admiring the hardworking nature, devotion, and care of their mothers, most girls whose mothers were housewives do not want to replicate that in the future. Many boys also want their sisters and future wives to have a different life from their mother: "She works at home, she is also financially supporting the family, she has more responsibilities at home. If my father comes home drunk, he might verbally and physically abuse her [but] she has always encouraged the boys to dream. We can't face so many difficulties, we don't want that kind of life" (young boy, India). "Our mothers' lives were difficult," said a group of girls in Fiji. "They stay home and have a lot of responsibilities—look after kids, household chores, cooking and cleaning and work on farms;" "[we want] better education and advanced job in life . . . education first and then work and get married last [not at a young age like their mother's did]."



Source: WDR 2012 team calculations, based on "Defining Gender in the 21st Century: A Multi-Country Assessment" (dataset).

NOTE

1. The WDR2012 Qualitative Assessment included 19 economies (the complete country list can be found in Spread 1, note 1). Specific focus groups with adolescents were conducted in a subsample of 8 economies including Bhutan, Burkina Faso, the Dominican Republic, Fiji, India, North Sudan, West Bank and Gaza, and the Republic of Yemen. In many other countries, adolescents participated in interviews with young women.



he analysis in Part 2 points to four priority areas for public action: reducing excess female mortality, especially in infancy and early childhood and in reproductive years; closing earnings and productivity gaps between women and men; shrinking gender differences in voice in households and in society; and limiting the reproduction of gender inequality over time, whether it is transmitted through endowments, economic opportunities, or agency. Gender gaps in these four areas persist despite economic development, thus providing a strong rationale for public action.

Part 3 of the Report is concerned with three questions: How to choose the right policies? What would enable the successful implementation of these policies? How can the international development community support policies for greater gender equality? The discussion starts with a detailed description of policy options for addressing the four priority areas for action, complemented with concrete illustrations of their use in various country contexts (chapter 7). An examination of the political economy of gender reforms follows, emphasizing the issues that distinguish reform in this area from other types of redistributive or equality-enhancing reforms (chapter 8). We end by proposing a global agenda for action (chapter 9).

CHOOSING THE RIGHT POLICIES

Policy makers can choose interventions that work through markets and through formal and informal institutions. The policies can also vary with the problem being tackled. For the market, prices can be altered through a range of taxes and subsidies. For formal institutions, laws can be changed or better enforced, and the level and quality of service provision can be enhanced. Policies are typically more indirect when targeting informal institutions, particularly social norms: examples include providing information and facilitating the formation of groups.

Chapter 7 illustrates how the framework in Part 2 helps reduce the complexity of policy choice and design in three ways. First, it focuses policy attention on the gender gaps of greatest concern. Second, it shifts attention from symptoms to determinants so that policies target the root cause of the problem rather than its most apparent manifestation. Third, it provides guidance about the most binding constraints and the potential entry point(s) for policy action. Where mutually reinforcing constraints exist, it highlights the need to sequence or combine interventions.

In each of the priority areas, the chapter looks at experiences across diverse countries—rich and developing—with different policies. In evaluating and recommending policies, we rely as far as possible on rigorous evidence, including from impact evaluations where these exist. We are thus able to distinguish between policies (such as conditional cash transfers to improve educational access or job placement programs to promote wage employment) regarding which there is more and better evidence and other interventions where less is known (such as measures to improve women's access to justice or ways of reducing unintended pregnancies among adolescent girls).

By looking beyond policies targeted at the underlying causes of persistent gender equality, chapter 7 also illustrates how the framework can inform effective and strategic gender mainstreaming. Many policies are not concerned directly with gender but may nonetheless influence gender relations within the household and society. Ignoring these links can make interventions less effective in achieving their goals. And in some circumstances, taking account of gender-differentiated impacts can make it possible to use policy as a way of enhancing gender equality.

ENABLING POLICY IMPLEMENTATION

Designing appropriate policies is just the first step toward greater gender equality. Implementing them effectively is equally important. Chapter 8 looks at the experience of a range of countries to highlight the main aspects of the political economy of gender reform.

Two characteristics of gender reforms are likely to spark opposition that needs to be managed if positive change is to result. First, as with all reforms, they redistribute resources and power between groups in society, including between men and women. So, even when the reforms enhance economic efficiency, some groups may lose. Second, gender reforms often challenge powerful societal norms and beliefs regarding gender roles.

The chapter highlights four political economy issues that are especially relevant to gender equality. First, it is essential to build coalitions that mobilize around the reforms and catalyze broad-based support. While state action is at the center of gender policy reform, coalitions that include nonstate actors

such as political parties, trade unions, civic organizations, and the private sector can be a strong force for change. Women's groups in particular have been, and will continue to be, important in working for greater gender equality in labor legislation and family law. And while men are still not as active in the push for gender equality, there is broader male engagement in many areas and growing male support for women's rights in many developing countries.

Second, firms—big and small—have strong business reasons to become proponents of gender equality. In a globalized economy, the competition for talent is great; companies can no longer afford to overlook or ignore talented women. Commitment to gender equality is something customers and investors increasingly demand, especially in large corporations. And the growing market power of women can encourage businesses to back up these commitments with action.

Third, dislocations such as natural disasters or political or economic change, can present policy makers with windows of opportunity to launch reforms that improve gender outcomes. The advocacy of transnational agencies and role modeling in the global agenda can play a similar role.

Finally, there are multiple paths to reform. Often governments follow societal cues in pacing and pushing reforms. When policy formulation and implementation derive from ongoing shifts in markets and social norms, convergence and alignment can fuel sustainable change. But such "incremental" reforms may not be enough to overcome the path dependence and institutional rigidities that result in persistent gender inequality. Bold government action with "transformative" reforms may be necessary to alter social dynamics and move to a more equitable equilibrium. In choosing between incremental and transformative policies as part of gender reforms, the challenge for policy makers is to balance the pace of change with the risks of reversal.

THE GLOBAL AGENDA FOR ACTION

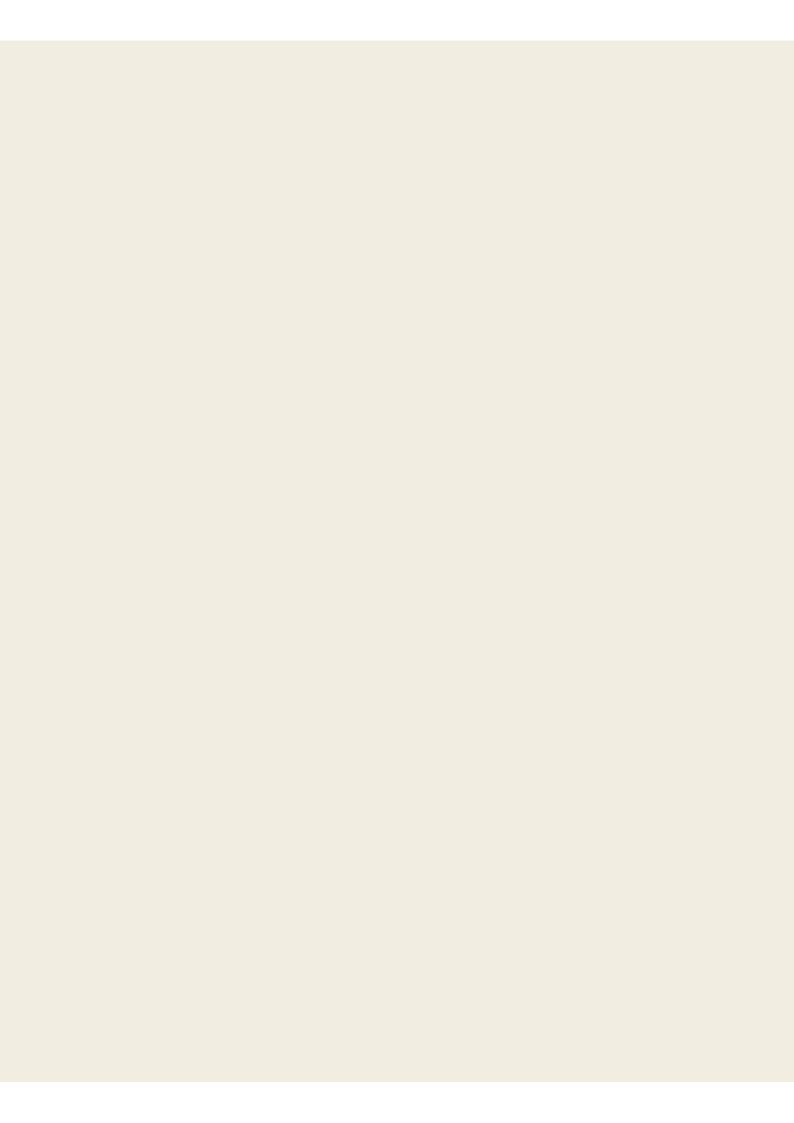
As chapters 7 and 8 show, domestic public action is central to reducing gender inequalities. Yet global action—by govern-

ments, civil society organizations, and international institutions working in concert—can enhance the scope for and impact of domestic policies. Chapter 9 discusses the motivation for actions by the international community as complements to country-level efforts and where those actions should focus.

Global action for gender equality is warranted for three reasons. First, progress on some fronts, such as addressing the root causes of excess female mortality, requires channeling more resources from rich to developing countries, especially the poorest and most fragile countries. Second, effective action sometimes requires the production of a public good, such as the generation or dissemination of new knowledge. And third, international coordination among a large number of countries and institutions can promote the adoption and enhance the overall effectiveness of policies, for instance by building momentum and pressure for domestic action.

Chapter 9 concludes that this global agenda should focus on areas where our analysis has pointed to the largest intrinsic gender gaps, where the potential development payoff is greatest, and where these gaps persist with income growth. So, the international community should focus its efforts on complementing countries' actions in the *four priority areas* identified in this Report: reducing excess female mortality and closing education gaps where they remain; improving access to economic opportunities for women; increasing women's voice and agency in the household and in society; and limiting the reproduction of gender inequality across generations. And we highlight an additional *cross-cutting priority:* supporting evidence-based public action through better data, better knowledge generation and sharing, and better learning.

In these areas, the support from the international community should be a mix of providing financing; fostering innovation and learning; and strengthening partnerships, including with academia, civil society, and the private sector. As chapter 9 notes, the specifics will vary by country and priority area and will require sustaining support in some areas while scaling up support in others.





Public action for gender equality

ollowing on the trends and analysis in Parts 1 and 2, this chapter looks at the choice of public policies to address the most serious gender gaps. In practice, policies for greater gender equality take a variety of forms and work through markets (taxes and subsidies), formal institutions (legal or regulatory changes and public service delivery), or even through informal institutions (efforts to change social norms). This multiplicity of possible interventions can make the policy choice and design problem appear overwhelming.

Our approach to making this problem more tractable is threefold and illustrates how better analysis that builds on our framework can help. First, we focus on what the analysis in the preceding chapters highlighted as the gender gaps of greatest concern. These are the disparities that matter for societal welfare and countries' development prospects but that do not necessarily close as countries grow richer. These priorities are reducing excess female mortality, especially in infancy and early childhood and in reproductive years; closing earnings and productivity gaps between women and men; shrinking gender differences in voice in society and in households; and limiting the reproduction of gender inequality over time, whether this inequality is transmitted through endowments, economic opportunities, or agency. Obviously, not all these priorities will apply to all countries across all income levels. And country characteristics will dictate how corrective policies will need to be customized.

Second, we emphasize that, in choosing and designing policies, it is necessary to target the

determinants—the underlying causes—of the gender gaps of concern rather than their symptoms. The analytical framework carried through Part 2 of the Report helps highlight these causes and how they emerge from the workings of markets and institutions and their interactions with each other and with households.

Third, we draw on the insight from the framework that, despite income growth, some gender gaps tend to persist and remain "sticky" for one of two main reasons. Either the single impetus for progress may be blocked, as with the institutional improvements needed to reduce infant, child, and maternal mortality in many low- and middle-income countries. Or the workings of markets and institutions and their interactions with each other and with households can mean that multiple constraints to progress require changes on several fronts. So, addressing gender gaps in where women and men work and how productive they are may require changes in how markets work, in the laws and regulations that apply to their work, and in the beliefs and norms that apply to the work that men and women do. In practice, therefore, policy makers need to understand whether a single constraint is most salient for a particular problem or whether multiple constraints are at work, and whether to address them simultaneously or sequentially.

Most of the chapter is organized by looking at policies to target the priority gender gaps within the three dimensions of endowments, economic opportunities, and agency. Some aspects of the reproduction of gender inequality over time, such as pockets of disadvantage in education, are covered here. However, we discuss

ways of dealing with the gender disadvantages that emerge in adolescence and early adulthood separately both because of the importance of these gaps in giving rise to "gender inequality" traps and because corrective measures have to recognize how endowments, economic opportunities, and agency are even more tightly linked for this age group.

Addressing gender gaps in human capital endowments-excess female mortality at specific periods of the life cycle, and pockets of gender disadvantage in education—requires an emphasis on better delivery of public services. Improving the availability of clean water and sanitation to households and providing timely basic services to expectant mothers will go a long way to closing gender gaps in excess mortality. Education services should focus on improving access for the significant population groups now disadvantaged by poverty, ethnicity, caste, race, or geography. Such an emphasis will address the "gender inequality traps" that affect the poor and excluded, with solutions coming from either the demand or the supply side. And broad-based safety nets can dampen the adverse impacts of income shocks, which can affect males or females differently, depending on the nature of the shock and the underlying gender relations.

Closing the gap between women and men in their access to economic opportunities means reducing earnings and productivity gaps between them, whether in wage employment, agriculture, or entrepreneurship. This effort will take targeted policies to lift the constraints on women's time stemming from the burdens of housework and care and to improve the workings of labor and credit markets and the structure of formal institutions—particularly laws and delivery of economic services.

Reducing gender gaps in voice, whether within society or in households, also typically requires policies in multiple domains. Policies to improve female education can help. For societal voice, measures are needed to provide information and change beliefs about women's abilities as political and corporate leaders as well as to change norms that consider leadership to be a male job. For voice within the household, most important are policies to expand economic opportunities for women and to reduce biases in the legal system, enforcement of laws and access to justice, and in some instances, measures to influence norms.

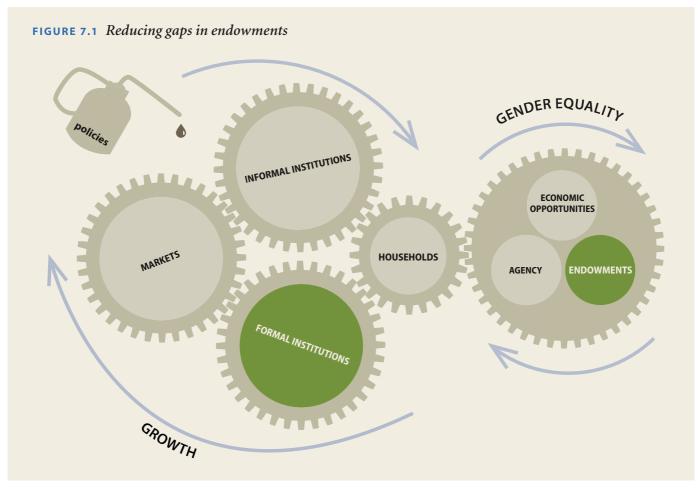
To effectively address gender inequalities that emerge in adolescence and early adulthood, it is necessary both to intervene early and in ways that recognize how an intervention can have impacts on various outcomes. For example, job training for an adolescent girl not only can improve her access to employment but may also delay pregnancy, which in turn can enable her to spend more time acquiring skills.

The final part of this chapter shifts from the choice and design of policies targeted at reducing gender inequality to looking at how and why the gender-differentiated impacts of policies that have other goals should be taken into account. We show how ignoring gender issues can sometimes make these policies less effective in achieving their objectives. And policies that are not concerned with gender equality can often be designed in ways that improve gender outcomes. So, even where gender equality is not the stated policy objective, gender may matter for policy design, illustrating how gender mainstreaming can be undertaken in a strategic way.

POLICIES TO REDUCE GAPS IN HEALTH AND EDUCATION

Many gender gaps in education—and some in health—narrow as countries grow richer. For households, higher incomes relax the need to choose between sons and daughters when spending on basic education, health, and nutrition. For countries, higher incomes permit the supply of services in these areas to expand—increasing not only the number of schools and health clinics but also their accessibility. And the market signals that typically accompany growth and encourage the greater participation of women in the wage labor market also work to reduce gender gaps by raising the value of girls' education.

But our analysis shows that two gender gaps in health and education persist even as incomes rise: excess female mortality at specific periods in the life cycle, and pockets of gender disadvantage in education. Addressing each gap requires better service delivery, especially to the poor and other excluded groups; that in turn requires strengthening the institutions responsible for providing the services (colored in green in figure 7.1).



Source: WDR 2012 team.

For excess female mortality, it's about fixing institutions

As the *World Development Report 2004* and others have shown, improving the delivery of public services is no small or simple task.¹ The main challenge for all governments is financing expanded coverage while ensuring that the services are provided efficiently and remain accessible to poor people.

Providing clean water and sanitation

As chapter 3 showed, today's rich countries resolved excess female deaths in infancy and early childhood between 1900 and 1930 by improving access to clean water and better sanitation. In general, water treatment at the point of use reduces diarrhea more than water treatment at the source, which is less effective because of the potential for recontamination.² For example, more than half of the water stored in household containers tested in Ethiopia showed postsource contamination.³ So, governments in rich countries chose to provide clean water at the point

of use through piped delivery while improving sanitation in urban areas. And where water supply has been improved in developing countries, it has made a significant difference. In Argentina, improvements in water supply reduced child mortality by 5 to 7 percent, with even larger effects in the poorest areas.⁴

The Joint Monitoring Programme of the United Nation's Children's Fund and the World Health Organization noted that while access to improved water sources rose from 71 percent in 1990 to 84 percent in 2008, access to piped water grew more slowly-from 39 percent in 1990 to 49 percent in 2008—with access in urban areas stagnating due to rapid population growth. Fewer than a fifth of the poorest 40 percent of Africans now have safe water (either piped or through standposts).⁵ In this situation, households (especially, but not only, the poor) find it hard to accurately assess the risks and benefits of each of the choices they must make concerning the purification of water. The problem is that the default option for these households is generally bad and will not improve unless water supply and sanitation institutions work better.

Just as the modes of delivering clean water and improving sanitation in urban and rural areas differ, so do the ways service delivery can be improved in these settings. For most low- and middle-income countries, substantially more resources will be needed to increase access in all settings. For instance, a comprehensive analysis of infrastructure funding needs for Sub-Saharan Africa concluded that about \$11 billion needs to be spent annually on clean water and sanitation needs—about 1.5 times the current level.⁶ The same study also showed that addressing bottlenecks in capital spending, reducing oper-

ating inefficiencies, and improving cost recovery could yield more than a third of the necessary financing.

Enhancing the efficiency of the institutions providing water and sanitation services requires appropriate regulations that recognize the rationale for government intervention while improving accountability to service users. In urban areas, water is provided through networks. So, efforts need to strengthen both the "short route" of accountability (of the provider to service users) and the "long route" of accountability (of policy makers and politicians to service users and of providers to policy makers). Ways must also be found to keep water affordable for the poor (box 7.1).

BOX 7.1 Improving water supply: Dakar and Phnom Penh

Improving the provision of water services is a difficult, yet achievable goal that can lead to significant reductions in child mortality—and it is possible even in low-income settings, as the cases of Senegal and Cambodia illustrate. Both these countries have been highly successful in improving water service delivery in major urban and periurban areas. Success has come through two main channels: increased investment and complementary measures to increase efficiency while preserving greater affordability for the poor.

Since the mid-1990s, substantial improvements have been made in access to and quality of water in Dakar, home to more than half of Senegal's inhabitants. Increased production capacity and expansion of existing networks, including construction of approximately 97,000 new social connections (subsidized access to the poor), increased the proportion of people with access to water services from 79 percent in 1996 to 98 percent in 2006—the highest coverage rate in Sub-Saharan Africa. In addition, water users experience fewer interruptions.

In parallel, the Senegalese government took several measures to ensure services would be provided at affordable rates without compromising long-run financial sustainability. The tariff structure for water services was designed specifically with this trade-off in mind, allowing for different prices for domestic and nondomestic users, and imposing higher tariffs on those users who surpassed specific quotas (for example, the well-off who used water for gardening). These tariff schedules were incorporated into financial models in the planning stages and post-implementation to monitor progress toward financial self-sufficiency. To bring down operational costs, the day-to-day water supply operations were transferred to a private company, which was also made responsible for billing and collecting payments for both water and sanitation services. To encourage provider effort, remuneration was directly linked to performance indicators such as the amount of reduction achieved in unaccounted-for water and improvements in billing and collection efficiency. In 2006, the tariff collection rate stood at 98 percent, up from 80 percent in 1996, and water losses declined from 32 percent to less than 20 percent—a saving roughly equivalent to the water needs of nearly a million users—over the same period. Furthermore, since 2006 the Senegalese urban water sector has been able to cover its operational and maintenance costs without direct government subsidies.

In the late 1990s, reform in Cambodia's water sector transformed access to water in Phnom Penh, where approximately 20 percent of the country's population lives. In 1997, only half of the city's population had access to piped water for an average of 12 hours a day. Between 1997 and 2003, water production doubled, distribution networks were expanded by nearly 150 percent, and subsidized connections for low-income groups mostly living in periurban areas were introduced. By 2010, over 90 percent of the population, including 3,800 poor households, had access to water 24 hours a day.

Similar to the Senegalese experience, reducing water losses and uncollected revenue and providing a tariff structure that was affordable for the poor but that did not threaten long-run sustainability were critical to turning around the capital city's ailing water sector. Cambodia chose a different avenue to achieve efficiency gains, however; instead of focusing on public sector participation, it combined increased investment in the public sector with adoption of new technology. Acquisition of a fully computerized monitoring system enabled Phnom Penh's water utility to reduce losses from unaccounted-for water from 57 percent in 1998—one of the highest rates in Asia—to 17 percent by 2003. The tariff structure provided subsidies to the poorest users ranging between 30 to 100 percent of fees. The remaining tariffs were set to ensure long-run financial viability and were reviewed annually to determine the necessary increases (although the significant reductions in water losses meant these tariff increases were modest). Information technology was also employed to improve the management of accounting data, which pushed the bill collection rate to 100 percent in 2003, up from 89 percent in 1997. As in Senegal, Phnom Penh's water supply authority has reached financial autonomy, and, in 2010, it was awarded the Stockholm Industry Water Award for excellence in water management.

Improving the structure of contracts and designing and enforcing appropriate regulations for service providers is critical in improving the "long route" of accountability by separating providers from policy makers. In some cases, the optimal approach may involve private participation. For example, private providers played an important role in expanding coverage of water supply in Manila from 67 percent in 1997 to 99 percent in 2009 and in realizing efficiency gains through lower water losses and operating costs.

Buttressing the short route of accountability, by increasing the influence of users over providers, can be achieved by benchmarking, ensuring that standards of service are clear, and by charging for services. Cambodia enhanced this form of accountability by working through both large utilities and small providers (in smaller cities) to set up clear mechanisms for charging—installing meters at each connection, computerizing billing systems, and shutting down water supply to those who do not pay—as well as instituting complaint mechanisms for clients.

It is important to charge for water services, but at the same time the services must remain affordable, particularly for the poor. So, subsidies to some users may be needed to ensure that the cost of the service is covered. But two issues arise with providing subsidies. The first is how to target these subsidies so that they reach the poor and do not encourage excessive water use. Several options exist, with attendant pros and cons. The most commonly used structure is a subsidy based on volume (where the subsidy is applied up to a certain volume). However, given that the rich and poor do not consume vastly different quantities of water, this subsidy usually ends up being regressive—benefiting the welloff more than the poor. Geographic targeting (as in Colombia) and means-based targeting (as in Chile) may provide better ways of targeting the poor, but they require additional data and administrative capacity to work effectively. As a result, in Chile the targeting is done by an agency other than the water utility. Finally, targeting can take the form of providing subsidies for inferior levels of service—for example, providing subsidies for standpipes but not for households that have a house or yard connection. The most appropriate targeting mechanism will generally depend on the context, including the population that is not currently served, their socioeconomic

profile, and the structure of the customer base of the utility.

The second issue is how to pay for the subsidy. Cross-subsidization (for example, from nonresidential to residential customers) is one option. Using general government revenues is another option. Ultimately, the best financing mechanism will depend on the local context.

In rural areas, network provision of water is feasible where population densities are high, as in parts of East and South Asia and where community-managed systems are common. Elsewhere, including in much of rural Asia and Sub-Saharan Africa, households provide for themselves through groundwater and surface sources. For community systems, local governments can make improvements. Uganda uses its extensive local networks for income tax collection to collect an additional small tax—placing it in a fund administered by the district council to pay only for major water repairs.

Even where rural supply systems provide access, supply is often spread quite thinly. Poor households are typically excluded, and many households continue to use other unprotected sources. Many villages in Bolivia, Ghana, and Peru have access, but the use of alternative unprotected sources remains high—at 21 percent, 23 percent, and 38 percent, respectively. Access to funding is often limited, and problems of financial sustainability remain pervasive, so even when systems are put in place, maintenance is problematic.

Sanitation differs from water in that individuals and households are affected not only by their own choices but also by the actions of others in their community. These "externalities" need to be taken into account in improving sanitation in both rural and urban settings. That is particularly true for the treatment and safe disposal of waste, where individuals' willingness to pay for proper service is usually below its cost. Thus, government has a clear role in setting standards, regulating provision, and possibly providing subsidies. In urban areas, strengthening property rights including the recognition of informal settlements can help stimulate demand and thus individuals' willingness to pay for sanitation services. On the supply side, ensuring that communities have access to independent providers can help improve services.

The priority in rural areas and less dense urban settings is to raise awareness of sanitation

issues, change behavior, and boost demand. In Cambodia, Indonesia, and Vietnam, appeals to people's sense of collective community responsibility contribute to sustainable sanitary behaviors. Some rural communities in Vietnam agreed on targets for better sanitary practices (building facilities, disposing waste), with local governments monitoring compliance and publicizing the results over community radio. Some communities in Indonesia initiated competitions by schools and found that the subsequent pressure from children to adopt "winning" behaviors were the main drivers of changes in hygiene practices.

Reducing maternal mortality

While significant progress has been made in reducing maternal mortality in the past twenty years, global progress is happening at a pace far short of that needed to reach the Millennium Development Goal of reducing maternal mortality by three-quarters. Certain regions lag behind. In Sub-Saharan Africa, a woman faces a 1 in 31 chance of dying from complications from pregnancy or childbirth; in rich countries, this risk is 1 in 4,300.⁷ Significant disparities exist within countries as well. In Afghanistan, the overall maternal mortality rate of 1,400 per 100,000 live births masks large variations—the rate is around 400 in Kabul but over 6,500 per 100,000 live births in some remote rural areas.⁸

The key to lowering maternal mortality is to provide prompt and adequate attention to expectant mothers. As chapter 3 noted, that is easier said than done because of the number of links in the chain—for mortality to come down, the whole system needs to work. Women need attention before, during, and after childbirth so that the risk of potentially life-threatening conditions can be mitigated or addressed in a functioning hospital if necessary. Better institutions are critical because they mean that pregnant women and their families do not need to make a series of difficult decisions about what medical attention to seek, when, and where. Improving the institutions charged with providing maternal health care means acting on many fronts.

First, more resources are required to expand access to the chain of services—especially to front-line service providers—that can reduce maternal mortality. Recognizing that need, the global community in 2009 committed an additional \$5.3 billion to improve health care for

mothers and young children. And early in 2011, a group of bilateral and multilateral aid agencies and private foundations launched a grant facility—the Grand Challenge for Development—to reduce maternal and neonatal mortality.

But as Malaysia and Sri Lanka illustrate, more money is not always the critical factor—both countries dramatically reduced maternal mortality with fairly modest increases in spending. In both countries, spending on maternal and child health since the 1950s has never exceeded 0.4 percent of GDP annually. Instead, they upgraded the quality of the people delivering the chain of services.

While there will be a continuing need for additional health workers, especially skilled birth attendants, coverage can also be increased especially in underserved areas by drawing in community-level providers and the private sector. One way of doing this is to delegate many clinical tasks from higher-level health providers to mid- or lower-level providers. In rural India, the management of sepsis, typically done by physicians, is instead done by trained communitybased health workers using preassembled antibiotic packages.9 Locating skilled health workers closer to those who lack access also helps. An example is Indonesia's Bidam Di Desa (village midwife) program, which trained more than 50,000 midwives and placed them in rural areas throughout the country. The proportion of attended births increased significantly, especially among the poorest rural residents. 10 Technology can help provide these front-line service providers with assistance when they need it. Uganda's Rural Extended Services and Care for Ultimate Emergency Relief program uses radios and walkie-talkies to connect health facilities, ambulances, and midwives and to provide birth attendants with a way to receive immediate advice from more senior medical staff.¹¹

Purchasing services from private providers can also be a cost-effective alternative to the public provision of maternal health services. In Cambodia, districts in which nongovernment organizations received government funding to

We need a clinic nearby and it should be open every day.

Rural woman, South Africa

provide maternal health services showed greater improvements in antenatal care and facility-based deliveries than those with services provided directly by the government. 12

Second, maternal health service providers have to be more responsive to expectant mothers. One way is by making service providers more accountable to them. For accountability to work, users need not only information on service standards, service quality, and policies to improve them but also some way to act on that information. In Uganda, community-based monitoring improved both the quality and the quantity of primary health care services. ¹³ Communities became more involved in monitoring service providers, who then provided more maternal health services of higher quality. Waiting times fell, more professional care was given, and facility-based deliveries increased.

For maternal health services, ensuring that the long route of accountability works better is even more important: citizens need to be able to hold their political representatives to account for failures in service delivery, and the politicians, in turn, need to exercise more effective control over the service providers. Take Peru, where improving maternal health required not only the extension of coverage but also the right incentives for service providers and a citizens' voice demanding effective services loud enough to be heard by policy makers.¹⁴ Professional attention at deliveries rose from 58 percent of births in 2000 to 71 percent in 2004. A new health insurance program for the poor made direct payments to front-line providers for services actually provided rather than allot additional budgetary resources to the health ministry to distribute. And greater participation of citizens in influencing policy design increased the responsiveness to client needs.

Third, the financial constraints that poor women face in accessing maternal health services need special attention. One way is to provide poor women with cash transfers conditional on their seeking health-care services known to reduce maternal mortality. An example is India's Janani Suraksha Yojana program, which increased the proportion of women delivering in the presence of a skilled attendant by around 36 percent. Schemes that provided vouchers for antenatal and postnatal care and institutional deliveries, like those in Bangladesh and Cambodia, also increased the proportion of assisted deliveries and antenatal and postnatal visits. 16

Fourth, improving these institutions requires political will, because maternal health services are often low on the political agenda (in contrast to, say, education). Honduras and Turkey show what is possible. Honduras' maternal mortality rate in 1990 was stubbornly high—182 per 100,000 live births—despite two decades of donor-supported reforms to reduce it. When the public was made aware of this high mortality rate, the government (and the health minister) made its reduction a national priority. A new program emphasized health system reforms, trained traditional and formal health workers, established maternity facilities for high-risk mothers, and formed private-public partnerships. Donors financed the training and health infrastructure. By 1997, the maternal mortality rate had fallen to 108.17

Similarly, Turkey's maternal mortality rate in 2000 was 70 per 100,000 live births. A new government capitalized on the political support that brought it to power and, in 2003, started a Health Transformation Program, emphasizing institutional reform, client responsiveness, and a focus on underserved areas. The budget for primary health care and prevention in underserved areas rose by 58 percent, air ambulances were put in service for remote populations, and the health workforce was redistributed for better coverage in poor areas. Conditional cash transfers encouraged attendance at prebirth hostels for pregnant mothers and deliveries in public hospitals. By 2009, the maternal mortality rate was down to 19.8.18

Fifth, efforts to reduce maternal mortality must work across sectors, going beyond a focus on only improving health systems and services. The successes of Malaysia and Sri Lanka in addressing maternal mortality relatively early in their development support this point (box 7.2). Investments in infrastructure (such as rural roads), attention to women's education, efforts to increase training of maternal health providers, and investments in hospitals all combined to reduce maternal mortality dramatically and consistently.¹⁹

Reaching the excluded—Providing education to severely disadvantaged populations

The institutions that deliver educational services matter for gender equality as well. As chapter 3 showed, the greater access to education accom-

panying economic growth and better service delivery has gone a long way to reducing differences between boys and girls in enrollments at all levels. And while poor learning outcomes persist in many countries and will require improvements in how educational systems are managed, there are few gender gaps in them. But many groups in many low- and middle-income countries still remain underserved by education. Because these disadvantaged populations show the largest and most persistent gender gaps in enrollments, reaching them is a clear priority for educational policy.

These severely disadvantaged populations can be sizable, sometimes making up entire subregions or populous parts of countries (as with a broad swath of West Africa and rural Afghanistan) or communities within countries (as with the Roma in Eastern Europe). What marks them all is some combination of extreme poverty, remoteness, and social exclusion on the basis of ethnicity, race, or some other characteristic. And because gender gaps in educational access among these groups persist and worsen over time, failure to address them will lead to their perpetuation over time with poor and excluded girls and women consigned to "gender inequality traps."

Needed are solutions to address the specific disadvantages that compound gender inequality. At one extreme would be local supply-side solutions that go to the source of the compounding disadvantage in specific contexts. For instance, where distance is the key problem, especially for girls to get to school (as in rural Afghanistan), building more schools in remote areas can reduce gender gaps.²⁰ Or if ethnicity is the key problem, recruiting teachers who speak the local language could be cost-effective. In other instances, there will need to be attention to specific factors such as sexual abuse directed toward girls in schools. Such customized supply-side measures have the advantage of directly targeting the underlying problem, but designing them is likely to be costly and time-consuming. Recent work from Pakistan tells a complicated story—for highstatus girls, having to cross settlement boundaries is a constraint on enrollment. But for girls from lower social groups, the main barrier is attending school with children from higher groups.²¹ So distance is the constraint that needs to be addressed by policy for the higher-status girls, while exclusion needs to be addressed

BOX 7.2 Reducing maternal mortality: What Malaysia and Sri Lanka have done

Improving the delivery of maternal care is hard, but it can be done—even at relatively low income levels, as the experience of Sri Lanka and Malaysia show. From more than 2,000 deaths (per 100,000 births) in the 1930s, the maternal mortality ratio in Sri Lanka fell to about 1,000 by 1947, and then halved to less than 500 in the next three years. By 1996, it had fallen to 24. In Malaysia, it halved from 534 over the seven years from 1950 to 1957. Then, with a halving every decade or so, it came down to 19 by 1997.

To overcome the range of institutional obstacles that hamper the effective workings of health systems, Sri Lanka and Malaysia adopted integrated and phased approaches. And they did so with modest total public expenditures on health—1.8 percent on average—or less than 4 percent of GDP since the 1950s. Health programs in both countries exploited synergistic interactions of health care with basic education, water and sanitation, malaria control, and integrated rural development—including building rural roads, which helped deal with obstetric emergencies. Financial, geographic, and cultural barriers to maternal care were addressed by making a front line of competent, professional midwives widely available in rural areas, providing them with a reliable supply of drugs and equipment, linking them to backup services, and improving communication and transportation. Simultaneously, facilities were strengthened to provide obstetric care and deal with complications. Better organizational management improved the supervision and accountability of providers. Area-specific mortality data were provided through monitoring systems so that empowered communities could hold political leaders accountable, and national and subnational actors were forced to recognize the unacceptability of every maternal death. Finally, both countries were strongly committed to improving the status of women—women gained voting rights before or soon after national independence, and female education received special attention.

Source: Pathmanathan and others 2003.

for those of lower status. Designing solutions crafted to the specifics of each problem can be demanding and complex.

Where adequate schools exist, simpler measures work to increase demand by providing parents cash transfers conditioned on sending their daughters to school. While these transfers may not be targeted precisely at the underlying issues, programs in Pakistan and Turkey show that they can be effective, as discussed in chapter 3. And they are easier to design in the short term. The Pakistan program also shows how such cash transfers can work to reduce disadvantages other than income poverty that compound gender inequality: they reduced educational attainment gaps for girls with mobility constraints. How groups are targeted is critical to the efficiency of programs in closing the gaps, and using different targeting mechanisms within a country, such as household poverty

BOX 7.3 Protecting men and women and boys and girls from income shocks

Shocks have gender-differentiated impacts. Whether they hurt men or women or girls or boys more depends on the nature of the shocks and, at the same time, the underlying structure of the local economy, as we saw in chapters 2, 3, and 5. The policy response to these shocks thus has been to draw on solid diagnostics that identify the relevant gender dimensions and then to design effective safety net measures that target those gender differences. Interventions can take many forms, including cash transfers, food stamps, temporary subsidies for basic needs (food, basic utilities, health, and education), and temporary employment (possibly combined with the active labor market programs discussed below). Moreover, given that shocks can have long-lasting and irreversible effects on the very young (0–3 years), particularly in low-income countries, interventions should be targeted at this group, including, for example, feeding programs and cash transfers to parents.

Source: WDR 2012 team.

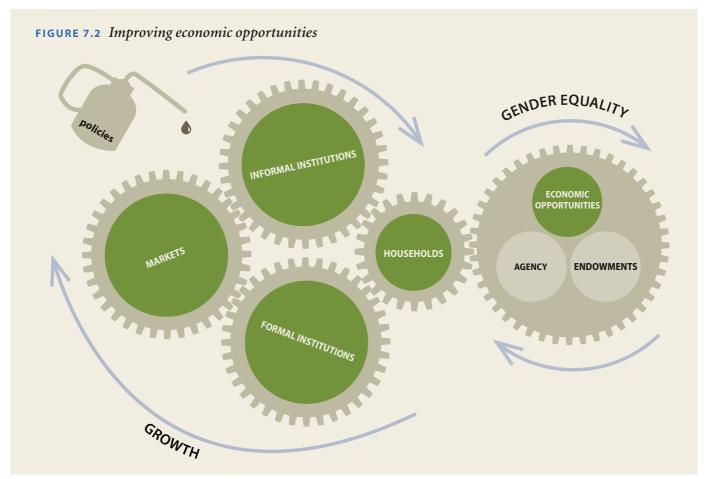
indicators or community-based mechanisms, may help. Similar principles also apply to the design of safety nets to address gender differentiated impacts of shocks (box 7.3).

POLICIES TO IMPROVE ECONOMIC OPPORTUNITIES

As chapter 5 showed, persistent gender gaps in earnings and productivity result from the fundamentally different experiences of women and men in accessing economic opportunities—whether in wage employment, agriculture, or entrepreneurship.

The different patterns of economic activity for women and men emerge from the ways markets and formal and informal institutions work and how households respond. So, policies need to target the underlying determinants of access to economic opportunity. Chapter 5 highlighted time constraints, access to inputs, and market and institutional failures as priorities for intervention. And because more than one factor may be at play, a package of interventions is typically needed (colored in green in figure 7.2).

This section looks at determinants of gender gaps in wage employment, agriculture, and entrepreneurship to illustrate the range of policy



Source: WDR 2012 team.

options and what is known about their efficacy from the experience of different countries across income levels. Following our framework, the discussion of policies works successively through constraints that come from informal institutions, the workings of markets, and formal institutions.

Informal institutions: Lifting the constraints on women's time

Constraints on women's time are a major cause of their lower earnings and productivity (chapter 5). These constraints come mainly from informal institutions—norms and beliefs about who does housework and provides care within the home. Policies to address these constraints primarily work around these norms rather than try to change them. There are four main approaches: providing increased access to child care, improving parental leave policies, freeing up women's time through infrastructure investments, and easing women's access to markets through technology and transport.

Increasing access to child care

Women spend more time on child care than men—ranging from twice as much in Sweden to 4.6 times more in Ghana to 6 times as much in Pakistan.²² This greater demand on women's time constrains their economic opportunities—both because of the sheer quantity of time they have to devote to this activity and because it restricts the continuity of their participation in market work. Child care provides a way to relax this constraint on women's time. This service can either be provided directly by the state (including local governments) or by the private sector or nongovernmental organizations (NGOs), possibly with public subsidies and regulation.

Evidence on the effects of these various forms of child-care policies comes mainly from the high-income economies of Europe and North America, and middle-income countries in Latin America. It is mixed on the impacts on the number of hours worked by women and on their labor force participation rates. In Colom-

bia, the Hogares Comunitarios program, which provides subsidies to designated homes turned into community child-care centers, significantly increased mothers' participation in the labor market as well as their hours worked.²³ In Argentina, the expansion of universal public school facilities increased both labor force participation and hours worked, although the magnitudes differed across studies.²⁴ In lowincome neighborhoods in urban Brazil, access to publicly provided child care significantly increased the maternal employment rate but did not affect the number of working hours for those already employed before the program's introduction.²⁵ In other settings, the effects of increased access to or reductions in price of child care on female employment rates were minimal. In Norway, subsidized and universally accessible child care had only negligible effects on child care use and female participation.²⁶ In Chile, the expansion of public day care centers had no impact on female labor force participation.²⁷ And in the United States, the responsiveness of maternal employment to the availability of free public day care varied across groups with, for instance, no impact for married mothers of five-year-olds with no younger children but large impacts for single mothers of fiveyear-olds with no younger children.²⁸

This diversity of experiences highlights the need for policy design to identify those groups of women who face barriers to labor market participation because they lack child care and to understand better the nature of these constraints.²⁹ Mothers who choose not to participate in the labor market do so for diverse reasons, and their labor responses to preschool programs will vary accordingly. The availability and affordability of alternative child-care options also matter. If, for example, fairly cheap alternatives already exist, subsidies to new childcare programs may crowd them out, and labor supply will be unaffected. That was the case in Norway, where the program mostly crowded out informal arrangements, thus imposing significant costs while failing to bring meaning-

Young woman, Indonesia

What will stop us from getting a job is having plenty of children and having nobody to mind them.

ful increases in overall child care or women's participation in the labor force.³⁰ The evidence from Brazil also suggests a similar crowding out of existing informal arrangements.

Less is known about ways to address the child-care needs of women who work in the informal sector (especially important in low-income countries) and in rural areas more generally. Some programs, including those run by NGOs, provide guidance on how child care could be expanded for these groups. As chapter 9 highlights, this is an important area for further innovation and learning.

In India, the NGO Mobile Creches is experimenting with different models for providing child-care services for women employed in the rural informal sector and on public works programs. 31 Day-care facilities were set up around New Delhi on public construction sites in partnership with contractors, who provide childcare facilities in addition to sharing other costs. These centers responded to the expectation that women would represent a large proportion of those taking up public work programs—for example, this figure reached 80 percent at some sites. The day-care programs include a nutritional component by providing meals during the day and tracking nutritional status of children over time, as well as integrated health services (for example, immunizations, regular doctor visits). To provide access to child care to women working in the informal sector in resettlement colonies in Delhi, Mobile Creches also helped in the creation of both home-based centers and community-based programs by identifying and training local women to provide these services. Together with Pradan, another Indian NGO, Mobile Creches also built a group of centers in remote rural areas in the states of Jharkhand and Bihar following discussions with local women about the child-care constraints they faced in accessing income-generating activities (specifically, yarn production) in their communities. These centers follow a community-based model, relying on employers as well as the broader community for their management, contribution of food materials, and training and selection of teachers.

Similar efforts have been undertaken in the Indian state of Gujarat by the Self Employed Women's Association (SEWA), a trade union for poor self-employed informal sector workers. SEWA has set up day-care centers for its mem-

bers' children (up to age six). This service not only provides education and nutrition for the children but also reduces the work days women have to miss to take care of their children—especially important because few of them are salaried workers.³²

Employers can also provide day care. In rural areas, employer-provided day care is likely to work best where a large number of employees are clustered in one location, as in the case of plantation agriculture. In Kenya, a large export coffee producer provides crèches and nurseries at each of its plantations to serve both regular and seasonal workers—a practice that dates back to the 1950s.³³

An option for publicly provided day care to informal women workers is to either lengthen the school day (particularly at grades where attendance is only for half of a day) or to lower the age at which children enter the school system. Vietnam implemented the former, while the latter approach has been tried in a number of contexts. In Israel, the government offered free public preschool for children ages three and four. This resulted in a significant increase in the labor supply of Arab mothers, whose children were previously less likely to be in any day care.³⁴ In Kenya, the government is expanding its early childhood and preschool education programs with the goal of providing access to all four-tofive-year-olds throughout the country.³⁵

Improving parental leave policies

Three main factors determine the effectiveness of parental leave in opening additional labor market options for women. First is the question of who pays. In countries that offer only maternity leave and the costs are borne by employers, maternity leave reduces the incentive to hire more women. That implies a role for public subsidies or, alternatively, a requirement that firms grant equal amounts of maternity and paternity leave. The second question is what proportion of regular wages to cover during the leave period. The more pay that is covered, the more leave individuals are likely to take. And because men appear to be more responsive than women to the coverage of earnings during leave, one way to encourage men's uptake of paternity leave is to cover a greater proportion of earnings. Finally, the length of parental leave matters. If it is too short, women are more likely to leave the labor force instead of taking leave. And if it is too long,

employees risk losing skills and experience. One solution to the latter is to allow some parttime work during the leave period, as is done in Germany.

Apart from its impact on improving women's labor force opportunities, alternative parental leave policies will also differ in whether they reinforce social norms around child care or try to shift them. Providing maternity, but not paternity, leave can enhance the prospects for women to participate in economic activity opportunities, but it risks reinforcing the norm that women are the primary household care providers. Such a policy is "incremental" in that it takes social norms as given and works around them. In contrast, providing both maternity and paternity leave and making paternity leave mandatory likely will be "transformative"—by giving men incentives to take on more care duties, it attempts to change the norms around care. This latter approach has been tried in some Northern European countries. In Norway and Sweden, offering nontransferable paternity leave has increased its uptake. Iceland's approach has been to offer a package of nine months of parental leave (with 80 percent of wage replacement); the mother and father must each take three months and decide how to allocate the remaining three months. Women take most of this additional leave, but overall this policy has resulted in high paternity leave uptake among men with some promising changes in gender relations at home and in the workplace.36

Freeing up women's time through infrastructure investments

Women also spend more time than men fetching water and gathering firewood. For example, in rural Guinea they spend over three and a half times more fetching water, while in rural Ghana, women spend at least three times more collecting firewood.³⁷ These tasks, as well as other household chores, represent a significant demand on women's time, reducing the time they have available for market work or leisure.

Electrification is often cited as one way to ease the demands on women's time.³⁸ In rural South Africa, it increased female labor participation by around 9 percent, mainly by reducing the time spent on domestic tasks while in Nicaragua, it resulted in a significant increase in the likelihood that young rural women worked outside the home.³⁹ Electrification also reduced

We know about the labor laws. About the protection of pregnancy. About firing.
Women are better today because of such laws.

Woman, Dominican Republic

Women are faced with discrimination in case of pregnancy. Private company owners always rather employ men because they will have no maternity leave.

Woman, Serbia

the time spent gathering firewood in Bhutan and increased free time in the evenings in Bangladesh. The increase in women's time was, in some cases, at least partly matched by an increase in male labor devoted to domestic tasks. For example, in Sri Lanka men engaged more in household chores, including ironing, after the introduction of electricity. In the introduction of electricity.

Improved access to water closer to households also releases demands on women's time. A study from Pakistan, for example, showed that water sources closer to the home were associated with increased time allocated to market work.⁴² Other evidence, however, suggests that the time saved is not necessarily used for market work; it sometimes increases leisure, thereby improving women's welfare. A broad, cross-country study, for instance, did not find an association between proximity of water source and increases in market work but did find a negative association with nonmarket work in some countries—thus indicating increased time for leisure.⁴³ Similar results emerged from a recent randomized study of in-home versus standpipe water provision in urban Morocco—the gains in time were spent on leisure.44 More research is required to understand the effects of improved water supply for women's work outside their households, particularly in remote rural areas where water sources are more distant.

Bringing women closer to markets and markets closer to women

Given the multiple demands on women's time, making it easier for them to access markets will also help increase their economic opportunities. Improving roads and transport can help achieve this. Men and women use transport differently, however, with women more likely to walk, for instance. Mindful of this difference, a project in Peru prioritized the repair and improvement of over 3,000 kilometers of rural pedestrian tracks. A survey of female beneficiaries found that 77 percent of women were able to travel farther, 67 percent said they traveled more safely, and 43 percent reported that they were able to increase their incomes.⁴⁵ In Bangladesh, the upgrading and expansion of rural roads led to increased labor supply for both men and women and raised household incomes.⁴⁶

Markets can also be brought closer to women through the use of technology. Access to the Internet and the use of mobile phones can help women get information about prices and connect them with buyers. In India, a program run by an NGO, the Foundation of Occupational Development, organized groups of women to market their products directly and increase their profit margins by providing them with access to cell phones and the Internet. 47 Also in India, the SEWA trade facilitation center created an online outlet for women to sell textile and handicraft products to supplement efforts along the supply chain to improve quality and reduce delivery times. Of course, as highlighted in chapter 6, gaps in women's access to these technologies persist, and looking for ways to close them, as noted in chapter 9, should be a priority so that women can reap the gains from technological progress.

Improving the working of markets

As discussed in chapter 5, markets can work differently for women and men ("gender-differentiated market failures") because of information problems. These can work against women in two ways. First, prospective employers may believe that women workers are not as productive in some jobs or sectors precisely because so few women work in them. These beliefs reinforce their reluctance to hire women, perpetuating low female participation in those jobs, which may also be strengthened by actual discrimination by employers. Women farmers and entrepreneurs can face similar information problems in credit markets. Because women in most countries use credit less than men do, lenders have little or no information about women's potential repayment capacity and are unwilling to extend them credit even if they are creditworthy. And women's lower ownership of assets in most parts of the world limits their ability to offer collateral.

Second, information about jobs and the prospects for advancement within professions typically exists within *networks* that are gendered. This situation can limit women's participation and progress in occupations and sectors where they are underrepresented while encouraging them to concentrate further in jobs, such as nursing, where they are already overrepresented (men follow similar patterns, seeking work in jobs in which they are already concentrated, such as engineering). So, where few women work, their numbers will increase only once a critical mass is reached. Similarly, gendered networks also may limit the opportunities for womenowned businesses to expand and diversify.

Overcoming information problems in labor markets

Active labor market policies can address information problems, especially with skills training and wage subsidies. 48 Several measures of this sort provide training; some also place individuals in new jobs, usually temporarily, to allow participants to overcome information problems by communicating their abilities to employers. Wage subsidies work by making it cheaper for employers to experiment with hiring women workers.

Many of these policies were put in place in response to economic downturns rather than with the explicit goal of improving women's economic opportunities, but they nonetheless produced significant gains consistent with addressing the information problems facing women seeking to enter (or reenter) the labor market.

Some of the early evidence comes from Argentina's Proempleo program of wage subsidy vouchers, which had a significant impact on employment but not income. Women benefited more than men. ⁴⁹ In Mexico, the PROBECAT program provided short-term vocational training. Female trainees with work experience were more likely to be employed within a year of completing the training, but the program increased monthly earnings only for men. ⁵⁰

More credible evidence is needed on the impacts of alternative active labor market policies in diverse low- and middle-income settings. An ongoing effort in Jordan systematically evaluates the efficacy of wage subsidies and skills training in increasing the employment of women col-

lege graduates (box 7.4), and the early results are promising.

A second set of policies uses affirmative action programs, either voluntary or compulsory, to increase the entry of women into wage employment and their advancement on the job once they are employed. The public sector can take the lead in affirmative action—both in its human resource practices and in its contracting. As the public sector hires more women, and women advance in public sector institutions (and enterprises), the information that public sector managers use in hiring decisions starts to change. It also demonstrates to potential private sector employers that women can succeed in particular sectors and jobs. The public sector can also use the power of the purse to demand affirmative action from its contractors, by making a certain level of female employment and management a condition of eligibility for a government contract.

A clear lesson about affirmative action is that voluntary programs have limited effects, if any. To be effective, programs need to be mandatory, to track progress, and to sanction noncompliance.51 Where mandatory programs have been implemented, as in the United States, the effect has clearly been to redistribute wage employment from men to women. But debate continues on the economic efficiency impacts of such policies. In theory this trade-off is clear. Gender-based quotas in labor markets can enhance efficiency by reducing discrimination and correcting beliefs about women's potential as employees. And they can promote female employment over time by providing role models, overcoming negative stereotypes, and enhancing incentives for educational and other investments by women. But such measures can also reduce efficiency if, in their application, less able women are selected and promoted. Over time, quotas could reduce the incentives of women to invest in education and training if they think they will be employed even with fewer qualifications. Finally, over time, quotas can also generate the belief that female employees are underqualified and that they succeed only because of affirmative action.

Although some evidence exists for each of these impacts, the most comprehensive evidence comes from the United States.⁵² Overall, it indicates that affirmative action in the labor market has had little or no adverse efficiency effects. The

BOX 7.4 Catalyzing female employment in Jordan

Despite rising educational attainment, labor force participation rates for women in the Middle East and North Africa remain very low. In Jordan, only 17 percent of women ages 20–45 work, compared with 77 percent of men. This gap also holds among the more educated; and with community college graduates, it starts immediately on graduation and widens thereafter.

These low rates make it difficult for new graduates seeking to enter the labor market. Because relatively few women hold jobs, young women lack both role models to follow into employment and the networks to help them find jobs. Employers, lacking experience with working women, may be reluctant to hire women if they believe women are less committed to staying employed.

The Jordan New Opportunities for Women (Jordan NOW) pilot program rigorously evaluates the effectiveness of two potential policies: short-term wage subsidies, and employability skills training.

Short-term wage subsidies give firms an incentive to take a chance on hiring young female graduates and an opportunity to overcome stereotypes through directly observing young women working for them. They can also give young women more confidence to search for work and to approach employers. In the pilot, each voucher has a value equal to the minimum wage for six months.

Employability skills training augments the technical skills graduates learn in community college with the practical skills for finding and succeeding in employment. Employers often say recent graduates lack interpersonal and other basic job skills. So, students in the pilot program received 45 hours of instruction in team building, communications, presentations, business writing, customer service, resume writing, interviewing, and positive thinking.

Demand for these kinds of policies appears to be strong. Despite low employment rates, the majority of recent female graduates want to work: 93 percent say they plan to work and 91 percent say they would like to work outside the house after they are married. Of those invited to attend the training courses, 62 percent completed them, with unmarried women more likely to attend. Those who began the courses gave them positive reviews, claiming the courses had given them much more confidence to begin searching for jobs. Four months into the wage subsidy program, about a third of those using vouchers had found a job.

Early results from a midline evaluation suggest that job vouchers have significant employment effects: employment rates among graduates who received vouchers alone or vouchers plus training are between 55 to 57 percent compared with 17 to 19 percent among those who received training alone or received neither training nor vouchers. In all groups, employment effects are higher for unmarried women. Financial empowerment (measured as the proportion of women who have their own money and can decide how to use it) also increased significantly for all who received either vouchers or training or both. Follow-up surveys will determine whether these employment effects of job vouchers are sustained in the longer term and also will focus on other measures of empowerment and changes in attitudes. It will also allow further investigation of the link between marriage and work, given the early findings that married women are less likely to attend the training, less likely to use the vouchers, and less likely to be employed.

Source: WDR 2012 team.

U.S. experience and that in other countries also indicates that some of the negative impacts can be addressed in two ways. First, affirmative action policies should be temporary so that they do not come to be seen as entitlements. Second,

Life will be very different if there is marketing assistance and credit for the products women can make at home Urban woman, India

employers need to be encouraged to improve their recruitment and screening processes in tandem with the use of the quotas as well as to invest in on-the-job training.

Where these labor market policies focus on specific sectors or occupations, they can address the information problems that arise from gendered networks. These measures could include providing information about the wages and qualifications for a given job or occupation or for advancement within a profession and engaging experienced female or male workers as mentors for younger workers of the same (underrepresented) sex.

Dealing with information problems for farmers and entrepreneurs

Microcredit schemes, in a variety of forms, are the most common way of addressing information problems for farmers and entrepreneurs. The programs originated with group lending, such as Grameen Bank and others in its wake, where individuals (who typically lack collateral) band together to obtain a loan. The loans go to individuals, but the liability for repayment falls on the entire group. The size of the group can differ (Grameen typically has groups of 5 borrowers in Bangladesh, while FINCA (Foundation for International Community Assistance) in Peru has groups of 10 to 50). The common characteristic is the joint liability of group members coupled with regular group meetings, which allow lenders to overcome the information problem.

Microcredit schemes have since evolved beyond group lending, finding new ways to deal with information problems. Banco Sol in Bolivia and Bank Rakyat Indonesia offer larger individual loans to established (typically better-off) clients who begin within group lending. Such individual lending relies not on peer monitoring and social sanctions (as group lending does) but on incentives for repayment that threaten to exclude borrowers who default from future loans.

The next stage in policy evolution is helping borrowers to exit (or even skip) microfinance and go to larger formal sources of credit. The International Finance Corporation's (IFC) Women in Business programs shows how this step might be done. Recognizing that women are less likely to have credit records than men, and lower asset bases to draw on for collateral, the IFC works with large commercial banks in Africa to extend credit to female-owned businesses. Interventions include developing new products such as loans that are collateralized with equipment or based on cash flow-as well as training and strategic assistance for the staff of financial institutions to help banks increase their numbers of woman clients. Initial experience shows an increase in women entrepreneurs using financial services and taking out larger loans, with betterthan-average repayment (box 7.5).

Where gendered networks hinder women business owners and farmers, a broader set of policies is needed. For business owners, both finance and training for business development are critical. One example of the value of training comes from Peru, where credit was coupled with business training on overall business strategy and managing the firm. The women trained were more likely to separate business and household accounts, increasing revenues with less variability over time.⁵³ Other studies show more limited effects of training, but in at least one context the combination of finance and enterprise training had a larger effect than each alone.⁵⁴ In agriculture, the analogous policy would include extension services in addition to support in accessing product markets, inputs, and finance.

Making formal institutions more evenhanded

Formal institutions—laws, regulations, service delivery institutions, and the like—can work in ways that hinder women's access to economic opportunities. Consider two sets of policy measures to address these obstacles: correcting discriminatory laws and regulations, and redressing gender biases in the delivery of services—where either of these affects women as employees, entrepreneurs, or farmers.

Correcting discriminatory laws

The main biases in laws blocking economic opportunities for women come from labor regula-

BOX 7.5 Innovative approaches to expanding access to finance for women and entrepreneurs

Financial institutions are recognizing that women, who account for half of all entrepreneurs, represent a large and underserved market opportunity. Three examples here show how innovative thinking and flexible business models can help overcome existing barriers to women's access to credit and help financial institutions develop a larger female clientele. All three examples emphasize training, financial literacy, and new products and processes that directly address women's needs.

Leveraging the power of training and financial innovation to promote access to the formal financial sector—Access Bank's and DFCU's Women in Business programs.

Access Bank in Nigeria and Development Finance Company of Uganda (DFCU) are among the largest banks in their countries. In 2006–07, both banks were looking at ways to improve their market share by expanding to attractive and growing market segments. Nigeria and Uganda have very dynamic and growing womenowned small and medium enterprises, and both banks were eager to capture this market but had no previous experience in how to do it.

Access Bank and DFCU partnered with the International Finance Corporation (IFC) to design and launch Women in Business programs in the two countries. IFC provided an initial credit line for lending to women entrepreneurs and advisory services for implementation. The programs enabled Access Bank and DFCU staff to offer better business advice to women entrepreneurs. The banks also trained women clients on business skills. And they boosted their confidence to approach the bank for credit services.

In Nigeria, Access Bank staff designed alternative collateral systems, including the pledging of jewelry and equipment and cashflow-based lending using assets, debentures, or bills of sales.

In Uganda, DFCU also developed new products better aligned with the needs of women entrepreneurs, such as the Savings and Credit Cooperative Societies Loan. It targets registered associations and groups whose members have overcome the start-up phase of

business but lack the conventional securities needed to secure individual business loans and prefer to borrow through a group approach.

During 2006–09, Access Bank disbursed \$35.5 million and DFCU \$16.1 million in loans to women entrepreneurs, while maintaining a nonperforming loan ratio of less than 1.5 percent. Both banks' portfolios also increased significantly (Access Bank opened more than 1,300 new deposit accounts and 1,700 checking accounts, and DFCU created more than 1,800 new deposit accounts). Access Bank trained 650 women in business and management skills and DFCU 368.

Access Bank replicated its model in The Gambia and Rwanda in 2011, and other commercial banks in Nigeria and Uganda adopted a similar model. The Access Bank, the first West African bank to be admitted to the Global Banking Alliance for Women, received the African Banker's 2007 Most Innovative Bank award and the Alliance's 2008 Most Innovative Bank of the Year award. DFCU followed suit, winning the Alliance's 2009 award.

Using leasing to overcome existing barriers to access and promote graduation into the formal financial sector— Sero Lease and Finance in Tanzania.

Customary law largely excludes women from owning land in Tanzania (and many other countries). With a predominantly collateral-based banking system, women are effectively excluded from loans. Sero Lease and Finance Ltd. (Selfina), a women's leasing and finance company, went into microleasing in 1997 to enable women to acquire equipment for immediate use with a down payment and a financial lease. Targeting 3,000 small and medium enterprises, it has a zero default rate and a 99 percent pay-back rate, with average loan sizes of \$500.

The IFC brokered a \$1 million loan from Tanzania's Exim Bank to Selfina and supported financial literacy and business planning and management training for female clients. As of October 2007, 150 Selfina clients had opened savings accounts.

Source: International Finance Corporation.

tions and legislation and from laws that confer property rights, especially over land.

Labor Laws

Beyond the fundamental step of legislating nondiscrimination on the basis of gender in employment practices, the policy priority in many countries should be to revisit the limits (including outright bans) on part-time work. Such restrictions discriminate against women workers who cannot consider full-time work because they bear a disproportionate share of household and care work. Relaxing these prohibitions would give women more opportunities for paid employment. In Argentina, for example, removing the ban on part-time contracts in the formal sector led to a significant shift of women with children from part-time work in the informal sector to part-time contracts in the formal sector.⁵⁵ So, the higher informality of female employment was a consequence not of discrimination in the formal labor market but of the ban on part-time contracts in the formal sector.

Rather than restrict part-time work, some countries have legislated greater flexibility in work arrangements. Sweden guarantees parents of children under age eight the right to work reduced hours in the same job with the same pay, increasing women's labor force participation.⁵⁶ It also reduces the risk of reinforcing

occupational segregation. High levels of parttime work by women in developed countries points to the demand for such arrangements.

Property Laws

Laws that determine property rights and control over resources within marriage—including many aspects of family law (governing marriage, divorce, and inheritance) as well as land laws—are particularly important for women entrepreneurs and farmers. Reforms in family law in many developing countries aim at eliminating differences in how they treat women and men. In the past 15 years, Lesotho, Namibia, and South Africa abolished provisions that recognized the husband as head of household in civil marriages, enhancing the wife's ability to enter contracts, register property in her name, and administer the joint property.⁵⁷ Ethiopia reformed its family law in 2000—raising the minimum age of marriage for girls, eliminating a spouse's ability to deny permission for the other spouse to work outside the home,⁵⁸ and requiring both spouses to agree when administering marital property.

The impacts of such reforms can be significant. The first phase of Ethiopia's family law reform shifted women's economic activities toward occupations that involve higher skills, full-time work, and work outside the home. ⁵⁹ Changes in inheritance laws that gave equal rights to daughters in some South Indian states increased the likelihood that women inherited land. ⁶⁰

Providing for joint ownership of land in marriage increases women's ability to use land in accessing economic opportunities. But since it may be costly for women to get their share of the land in the case of divorce, even with joint ownership under marriage, a better way to ensure women's land rights is mandatory joint land titling (which would have the added benefit of protecting a wife's rights in the event of her husband's death). In two regions in Ethiopia where land certification involved the issuance of joint titles to both spouses, women's names appeared on more than 80 percent of all titles, four times the 20 percent in the region where the certificate was issued only in the name of the household head.⁶¹ (The discussion of agency, below, looks at how changes in property rights can also increase women's voice within households.)

Addressing biased service delivery

The main service delivery biases against women's access to economic opportunity in many countries come from the way government land distribution and registration schemes and agricultural extension agencies work. These biases can be addressed in a variety of ways.

First, service providers could be required to target women explicitly and additionally. The Agricultural Technology Management Agency in India targeted women in Orissa to set up selfhelp groups in conjunction with community organizations to provide agricultural extension. These groups led women to diversify their agricultural income sources.⁶² The principle of focusing on women also applies when the state is (re)distributing resources such as land. Redistribution programs that target the head of the household will not serve women well, because most heads of household are men (see chapter 4). Instead, the government could issue joint titles to land distributed by the state, either at the time of distribution (as is the law in Bolivia, Mexico, Nicaragua, and Paraguay), or later when property rights are registered and titles issued (as has been the experience in Bolivia, for example).63 Alternatively, such programs could give men and women, individually, equal shares of the distributed land. The law alone might not be enough, however, and governments may have to actively engage to ensure that women receive their land, as was the case in South Africa where 47 percent of the beneficiaries under one phase of land redistribution were women.⁶⁴ To increase women's access to land markets-where they are underrepresented—a number of NGOs have been organizing groups of women to lease or purchase tracts of land. Such is the case for BRAC (Bangladesh Rural Advancement Committee) in Bangladesh and the Deccan Development Society in India.65

Second, the power of women can be enhanced within the service delivery organization, including in setting priorities. For agricultural extension, women could be put in decision-making positions at the Ministry of Agriculture. In Ethiopia, local land committees were required to have at least one female member, resulting in their participation in land registration.⁶⁶

Third, technology can be used to expand the reach of services to women. An example is the Kenya Farmer Helpline, which was introduced in 2009 by Kencall, Kenya's largest call center, to provide free advice to small-scale farmers. Call center operators provide expert advice in various local languages on a range of agricultural practices such as controlling pests, raising live-

stock and poultry, harvesting and marketing of products, connecting to local markets, and raising capital. The project follows a demand-driven model, in which call content and caller profiles are stored and the database then used to ensure operators develop expertise on the most frequent or pressing issues encountered. Although the impact on yields has not yet been evaluated, nearly half of the 30,000 Kenyan farmers reached by the program are women—a much higher fraction than those reached through standard agricultural extension services.

Fourth, improved monitoring can inform policy. Numbers can help tell the story: for instance, the number of female clients served by agricultural extension agents as a percent of overall female farmers.

Finally, female users of the service can be given information about the level of service they are due. This step can be aided by building the collective element of demand—for example, supporting women's farmer organizations or women's business organizations.

Because solid evidence on the effectiveness of each of these and the best way to implement them is patchy, further work is needed to develop a wider repertoire of programs proven to work in a variety of contexts. ⁶⁷

POLICIES TO IMPROVE WOMEN'S AGENCY

Chapter 4 showed that women's agency remains constrained both in society and in the household even as countries get richer. And the most significant shortfalls relate to women's voice. Women are underrepresented in decision-making bodies both in politics and in social and economic spheres such as the judiciary, the corporate world, and trade unions. And women's voice in the household remains limited in many settings and is evident particularly in their lack of control over household resources and family formation and in the high incidence of domestic violence.

At the societal level, constraints on women's voice stem from a combination of factors. Social norms that associate leadership with being a masculine activity may contribute to widely held beliefs that women are unable to lead effectively or that they should not lead at all. Lack of information about women's abilities as leaders and the absence of women leaders may bias beliefs about their performance. The gendered

networks in politics and other professional settings also limit women's leadership prospects. And, as is the case for economic opportunities, norms around care and housework limit the time available to women to invest in seeking these positions.

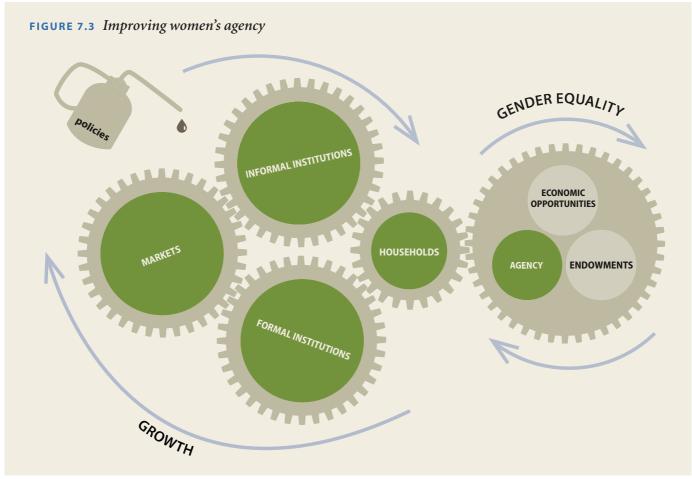
The muted voice of women within their households reflects the combined influence of their access to economic opportunities, the nature of social norms, the legal framework, and the enforcement of laws. For control over household resources, key determinants are access to economic opportunities and the legal framework—particularly rights over property within the household as reflected in family, land, and inheritance laws. For domestic violence, social norms and the content and enforcement of laws play important roles. And for fertility, norms and bargaining power plus service delivery are critical factors.

These limits on the societal and domestic voice of women, therefore, reflect the ways in which formal and informal institutions are structured and how they interact with each other. So, policies need to target these determinants. As with economic activities, a combination of interventions may be needed in any specific context (colored in green in figure 7.3).

In the following, we look at how policies that directly address several of these constraints can increase women's voice in society and in the household. These policies supplement some of those discussed earlier in this chapter in two respects. First, policies that improve female education can be important in exercising agency—ranging from literacy, which helps people understand their rights, to higher education, which increases their ability to participate in political life. Second, policies that expand women's economic opportunities, including by addressing the impacts of norms around care and housework, can also foster agency, particularly by increasing women's control over household resources.

Increasing women's societal voice

Policies aimed at increasing women's participation in societal institutions can do so by addressing the information problems or the underlying beliefs that women make worse leaders than men. Forcing a departure from norms and improving information (to voters and shareholders, for instance) are likely to be the most feasible options. In practice, imposing quotas in politics and on corporate boards has proved helpful.



Source: WDR 2012 team.

Political representation

Quotas, the most common way of increasing the representation of women in formal politics, take different forms. Political parties can voluntarily commit to including a given number of women candidates on electoral lists (voluntary party quotas); a certain fraction of candidate positions can be reserved for women, often with conditions on the position of women on the lists themselves (candidate quotas); or a share of legislative slots can be reserved for women, for which only female candidates can compete (reserved seats). Among countries with gender quotas, 61 percent have voluntary party quotas (predominantly in Western Europe), 38 percent

Women have the right to become town chiefs.

Adult man, Liberia

have candidate quotas (largely in Latin America and in part of Africa), and 20 percent have reserved seats (mostly in South Asia and part of Africa).⁶⁸

The form that is best for a country depends on the political system. For example, reserving individual seats for women is not feasible in proportional representation systems, and voluntary party quotas may work when parties have strong leadership and internal discipline. Moreover, the detailed design of quotas and their enforcement is key. In Spain, where positions on the ballot are in alphabetical order for elections to the Senate, parties tended to choose women with last names that put them lower on the ballot and thus were less likely to win a seat—demonstrating the need for more careful design on where women's names were to appear on the ballot.⁶⁹ In France, some political parties preferred to pay fines rather than comply with quotas in national elections, highlighting the importance of enforcement mechanisms that

provide strong sanctions for noncompliance—both through significant financial sanctions and through mechanisms to reject lists that do not comply with the quotas, as in the case of Costa Rica or municipal elections in France.

In addition, the broader picture has to be kept in mind when designing quotas for political representation. Mandatory quotas circumscribe part of the democratic process, and this interference has to be balanced against the need to redress a persistent inequality. One option, used for local governments in India, is to implement quotas on a rolling basis—with a different set of seats chosen for reservation in different elections over time. And as with all affirmative action policies, it can help to specify a clear goal or time period up front. A final consideration is to think carefully about the structure of the reservation. Designating particular seats for women (perhaps even without assignment to a particular constituency) runs the risk of creating "token" women's seats, which will be significantly less effective.

Quotas can increase women's representation significantly. Following the imposition of candidate quotas, the representation of women in parliament jumped from 16 to 22.6 percent in Mexico and from 6.7 to 17.5 percent in Macedonia. With the implementation of reserved seats, the proportion of women in parliament jumped from 0.6 to 10.8 percent in Morocco and from 1.3 percent to 5.5 percent in Jordan.

Quotas can have effects in other dimensions as well, but because countries pursuing other policies to increase gender equality are probably more likely to also put in place quotas for women's political participation, assessing the impact of the quotas alone can be difficult. Local government in India is an exception because reservations were assigned randomly-with several clearly measurable effects on women's voice in politics. First, given that this quota required women to hold the office, more women were elected. Second, after the reservations were removed as a result of rotations, women were still elected in higher percentages than they were in communities with no reservation.⁷⁰ And men favorably changed their opinion of the potential of females as leaders.⁷¹ So, an initial push of forced female representation caused voters, particularly men, to update their information, overcoming the information problem that appears to be one of the root causes of female underrepresentation. However, in Pakistan, quotas that violated strong social norms have led to increased discrimination or even persecution of women.⁷²

In many places, these political reservations also have had broader positive effects. Where seats were reserved for women, female citizens were more likely to participate in village meetings and to receive a constructive response from those in power.⁷³ When women were elected to head local governments, their public investment decisions were more in line with female preferences.⁷⁴ And other dimensions of women's agency saw improvements as well. For example, areas with reserved seats for women saw a substantial increase in the number of reports of crimes against women, with a concomitant increase in arrests.⁷⁵ Quotas and other similar mechanisms can also be effective in enhancing women's voices in peace and postconflict reconstruction processes with attendant benefits (box 7.6).

More generally, sustained change will happen only when female representation increases at all levels—through quotas and otherwise. And a critical ingredient in sustaining this representation includes providing capacity building and mentoring for female party members, emerging candidates, and newly elected women, as well as building networks among female politicians—both within and across countries.

Chapter 4 also highlighted that women have been more successful in achieving greater representation in less organized institutions such as women's producer organizations and informal labor unions. Policies to promote greater freedom of association and facilitate participation of such groups in decision making can spur this form of voice (as discussed more in chapter 8). Increasing women's participation at other levels of government, including in administrative agencies in charge of implementing laws or in the judiciary, is also critical, as discussed elsewhere in this chapter. One example of this type of policy comes from Colombia, which requires that 30 percent of all political appointees be female, including in the cabinet.

Economic representation

In the private sector, some governments have imposed corporate board quotas.⁷⁶ Similar to political quotas, the corporate quotas are designed to increase female representation, which

BOX 7.6 Including women's voice in peace and postconflict reconstruction processes

Women's representation in peace and reconstruction processes is extremely low. A review of 24 peace processes that took place between 1992 and 2010 reported female representation to be as low as 2.5 percent of signatories and 7.6 percent of the negotiating parties. Another review of peace negotiation processes showed that only about 7 percent of government delegates were women.

Although systematic evidence of the impacts of women's participation in peace and reconstruction is limited, recent experience from a number of postconflict situations, documented by UNIFEM (United Nations Development Fund for Women), points to the likely gains from giving women more voice in the process. In Burundi, Guatemala, Sudan (Darfur), and Uganda, when more women participated in the process and their inputs were channeled into decision making, gender-related issues such as support to victims of sexual violence during the conflict, services for widows and displaced households, and health and education services were more likely to make it onto the policy agenda. In postapartheid South Africa and some Latin American countries (such as Guatemala and Colombia), women's active participation shifted public spending toward social and economic programs. Women's experiences (and typically greater vulnerability) during conflict are also likely to shape their priorities for the reconstruction agenda. Involving civil society and increasing the links between them and political leaders, as was done in Liberia and Rwanda in the postconflict transition and in postapartheid South Africa, helped align policy priorities with the needs and concerns of women.

While more work is needed to look at the efficacy of different ways of enhancing women's voice in peace and postconflict processes, experience suggests that two mechanisms may be worth considering. First, as with political representation, using quotas for women can help increase representation, especially at the outset of the process. Second, creating thematic units to deal with gender issues, as was done in Colombia's National Commission for Reparation and Reconciliation, can ensure that these concerns receive due attention.

Sources: Anderlini 2007, 2010; Fisas 2008; UNIFEM 2010; World Bank 2011.

in turn can change perceptions of women's performance as leaders and shift attitudes and social norms by breaking down gender stereotypes of women in positions of power.

In Norway, the only country where legislated corporate quotas are now fully effective, female representation on boards has increased.⁷⁷ Some studies from the United States provide suggestive analysis that this type of increase translates into a greater proportion of women in other high-level positions within companies. In one study, a greater share of female board members in the previous year was associated with an increase in the share of women in other top positions in the following year, suggesting that the impact runs from boards to managers and not the reverse.⁷⁸ A similar study finds a strong

positive association between the share of female board members and women's presence among top executives and top earners.⁷⁹

Increasing the share of female board members could also improve firms' performance. Greater gender diversity on boards is associated with better indicators of organizational excellence.80 And there is a positive association between board diversity and firms' financial returns.81 But none of these studies employs methods that can accurately identify the impact of board diversity on firm outcomes. Moreover, the two studies that present the most rigorous evidence find the opposite result: corporate board quotas led to poorer financial performance in the short run in Norway.82 Nevertheless, one of the Norwegian studies also finds that these losses resulted from the younger age and lack of highlevel experience of new board members rather than from their gender.83 Taken together, these results suggest that further work is needed to fully understand the links between greater representation of women on corporate boards and firms' performance.

Enhancing women's voice within households

The muted voice of women within their households reflects the combined influence of their access to economic opportunities, the nature of social norms, the legal framework, and the enforcement of laws. Some of the policies aimed at increasing women's economic opportunities have been discussed earlier, and this section focuses more on the laws that affect households (including their enforcement) as well as on the societal norms that impinge on households. Of the two, the laws and their enforcement are more directly amenable to public action, and that is the main focus here. Although such legislative change will not by itself shift social norms, experience shows that removing or amending discriminatory laws is an essential part of that process over time. And changes in law have to be accompanied by other interventions to make them effective.

Reconciling multiple legal systems

Before discussing specific laws, it is important that the overall system function well even where, as in many countries, multiple legal systems exist. Customary law and religious law are sometimes part of the formal state-sanctioned legal framework, and, even where these are not officially recognized, they continue to matter in determining women's capacity to access and control assets. So, where there is a constitutional nondiscrimination clause (as in the majority of constitutions in the world), the first step is to make sure that all sources of law are governed by it. Nondiscrimination needs to be the benchmark for the validity for all laws, particularly those determining the control of resources within households and families. For example, Kenya recently removed the exemption from nondiscrimination that the constitution had previously granted to customary family and inheritance law.

Ensuring that all laws conform to the nondiscrimination clause will also enhance the ability of citizens to challenge laws as unconstitutional. Such challenges, initiated by alliances of women's groups and other stakeholders, have overturned statutory laws favoring male heirs in Nepal and Tanzania. A key is ensuring that the legal system provides for constitutional challenges and also increases women's access to the justice system.

In reconciling multiple legal systems, customary law should not be ignored. It is the everyday reality for many men and women, so recognizing its impact and potential for change is both pragmatic and constructive. Customary law is more familiar and accessible. It uses mediation rather than an adversarial model. And it offers greater legitimacy particularly in fragile, postconflict countries where the formal system is nonexistent or decimated. In Botswana, where customary law and customary courts are formally recognized, women have become tribal chiefs, making decisions and breaking centuries of tradition. Removing gender biases in the customary system through sensitization, encouraging greater participation by women, and promoting the system's values, such as the protection of women, should thus be encouraged. And forging links between the informal and formal systems can help bring about greater parity throughout the legal system.

Control over household resources

While greater economic opportunities can provide a vehicle for increasing women's resources and their control over these resources, laws are a direct way to ensure more control. Modifying aspects of family law that govern marriage, divorce, and provisions of land laws that are discriminatory should be a priority.

Laws over property within marriage

The main inequities in this arena are those that concern the rights of husbands and wives to decide on the use and disposition of matrimonial property. Despite recent reforms, many such laws remain on the books of countries, particularly in Sub-Saharan Africa and the Middle East and North Africa. Fifteen of the 47 countries in Sub-Saharan Africa, for example, still have laws that give husbands greater control over marital assets. Laws that vest control over marital property in the hands of the husband also remain in force in Chile.

But progress is possible. Ethiopia reformed its family law in 2000, eliminating the husband's ability to deny his wife permission to work outside the home and requiring both spouses to agree in administering family property. The first phase of these changes contributed to a shift in women's economic activities toward work outside the home, full-time work, and jobs requiring higher skills.⁸⁴ Morocco reformed such laws in the 1990s, and in 2004, the new Moroccan Family Code completely eliminated references to the husband as the head of the household.

Registering marriages

What about the many women who do not have a registered and legally recognized marriage? To bring more women into the protection of beneficial statutory regimes, civil registration procedures should be kept simple and locally accessible with low costs, as in Rwanda. An alternative is to legally recognize customary marriages or consensual unions and confer rights on women in these relationships, as in South Africa, where women in monogamous customary mar-

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This law has assisted us.... When you leave the man's home, you divide the property and go with something to begin your new life.

riages are regulated by the same default community of property regimes as civil marriages. The key is to keep evidentiary requirements to a minimum to take into account the wide range of circumstances in establishing a relationship. The starting point could be a presumption that couples are in a customary marriage if they are living together, a presumption that could be left up to the contesting spouse to refute. This registration provides a key step in women's access to legal systems (see below).

Laws for divorce

The laws that apply to the disposition of marital property with divorce and those that determine the ability of men and women to seek divorce help shape women's control over resources while they are still married (through her bargaining power) as well as their welfare if their marriages end. For the division of marital property, the default property regime that prevails during marriage matters for women's ability to accumulate assets—as does having a choice over it. As chapter 4 showed, community of property regimes generally offer greater protection to women, because marital property is divided equally on divorce.85 Many countries, particularly civil law countries, already have default community of property regimes. In Morocco and Tunisia, recent family law reforms allow women to opt for a community of property regime for the first time. And making the community of property regime the default, as Turkey did in 2001, will result in higher uptake than if couples have to choose to opt in.

Where separate property regimes remain the default, recognizing a spouse's nonmonetary contribution to household wealth in divorce legislation is crucial. If the baseline for division of matrimonial property on divorce is an equal split, women who have spent time caring for children, performing unpaid housework, and contributing to the welfare of the family in other ways can be compensated upon divorce. If recognition of nonmonetary contributions is enforced, a separate property regime can be as effective as community of property in protecting women's property. One key element in this enforcement is clear legislation that specifies what this compensation should be-it should not be left to the courts to interpret an equitable starting point. As Kenya's experience shows, contradictory case law can lead to many different outcomes.86 And because the family home is often the most valuable marital asset, laws that mandate or presume its joint titling can protect women from loss of assets in divorce.

Inheritance laws and widows

In many countries, inadequate or discriminatory inheritance legislation places widows in a particularly vulnerable situation with regard to asset ownership. For example, 22 Sub-Saharan African countries do not give widows a right to half the estate. And because the writing of wills is not common in low-income countries, intestacy laws (which govern property distribution on death in the absence of a will) determine the division of the estate. So, widows' access to property is often reduced, leaving them dependent on the goodwill of male relatives or in-laws with little guarantee of support. Another problem is that plural legal systems often apply to widows' inheritance, particularly land. In Botswana, Nigeria, Swaziland, Tanzania, and Togo, customary law prevails over statutory law. And in Zambia, about 90 percent of the total land is held under customary law, which excludes the land from the estate and conveys it only to male heirs.

If possible, discriminatory intestacy laws should therefore be changed, and where individuals elect to write a will the law should ensure that widows' interests are protected. But discretion in deciding to whom to bequeath property does not always work in favor of widows or daughters. This pitfall can be avoided by designating widows and daughters as necessary heirs under the law even when a will exists, as in Brazil, where widows and both sons and daughters are legally entitled to equal shares of half the deceased husband's estate. In Argentina, Bolivia, and República Bolivariana de Venezuela, widows cannot be legally excluded from a will.87 Laws that protect widows' assets by prosecuting those who evict widows from land can also help and are in place in Ghana, Malawi, Uganda, and Zambia. But their enforcement remains a stumbling block. Another way to help protect women's assets when the spouse dies is to have a default community of property marital regime, which automatically entitles the widow to half of the joint marital property, leaving only the other half for the husband's estate. Overall, progress in reforming marital laws has been faster than progress in reforming inheritance laws in many countries, suggesting that the former can be an important entry point for establishing widows' rights early in the reform process.

Reducing domestic violence

Domestic violence results largely from a combination of strong social norms surrounding power within households as well as from women's limited bargaining power in their households. These determinants need to be addressed in addition to strengthening the legal framework and improving services to victims of violence.

Shifting norms and behavior through information and bargaining power

Although rigorous evaluations are scant, some programs to shift norms and behavior around domestic violence show promise. These fall into two main types. The first are education and awareness campaigns aimed at men, women, and youth. An example is the Soul City program in South Africa, a multimedia program aimed at changing norms and beliefs of individuals and communities. Some norms, such as the view that intimate partner violence was a private issue, changed after the campaign.88 Another example, also in South Africa, is the Stepping Stones program, which promotes communication and relationship skills in separate training for men and women. A rigorous impact evaluation found that it significantly reduced the perpetration of intimate partner violence by men.89 Evaluations of other programs, however, show limited or no effects from providing information, indicating that further work is needed on how to make these programs effective.90

Education and information should also target adolescents—for instance, at school—through education on gender norms, rights, legal recourse, and available resources. School-based programs, especially those with several components, can strengthen knowledge and protective behaviors against abuse, but evidence of their effect on the incidence of abuse is not available. ⁹¹ Rigorous evaluations of programs reducing date violence in the United States and Canada show that they can have positive effects in preventing or reducing violence, with the effects mostly attributable to changes in norms, roles, and greater awareness of community services. ⁹²

Second, increasing women's bargaining power in the household can reduce domestic violence, but experience shows that a cautious approach is warranted. Increased economic opportunities or larger transfers (through conditional cash transfers, for instance) to women are likely to increase their bargaining power but can also increase domestic violence (at least in the

short run). Complementary programs directly targeting this cause of violence may help reduce it. Improving women's fallback positions may also provide more durable ways to improve bargaining power and thus reduce domestic violence. One option is to increase women's asset base, particularly the ownership of a dwelling (which gives them somewhere to go) and land. Work in Kerala, India, has shown that women's property ownership is associated with significantly lower levels of domestic violence.93 A second option is to improve women's ability to leave their marriage. Unilateral divorce laws in the United States reduced domestic violence by around 30 percent.94 Attention also needs to be paid to the custody of children and the resources available to them after divorce.

Putting laws against domestic violence in place
Continuing efforts are needed in many countries in the Middle East and North Africa, South
Asia, and Sub-Saharan Africa to enact laws against domestic violence. Such laws serve many purposes including defining different types of violence against women, prescribing mandates and duties for various actors in enforcing laws and investigating charges, raising societal awareness, and signaling government commitment. Countries that already have laws on the books

Men used to beat us and everything would carry on as normal. But now we can report them to the police.

Adult woman, South Africa

should review them to ensure that they are specific and actionable. Additional reforms can include enacting legislation and implementing policies that regulate criminal procedures and responses to victims (restraining orders, forensic procedures, victim assistance, and medical protocols).

Providing an effective response to domestic violence

Support to victims should be quick and integrated—with telephone hotlines, emergency shelters, legal assistance, psychological care, support groups, income generation programs, and child welfare services.⁹⁵ Integrating these

They are bombarding us with stories about safe houses, but that is a smokescreen. What does it mean for us, the two safe houses [that] are in Belgrade, while all of us rural women can be killed?

Young woman, Serbia

services makes the response more effective because of the importance of a timely response both to establish the facts and to protect victims. For example, Malaysia has one-stop crisis centers at government hospitals. When a woman arrives at an emergency department with injuries from domestic violence, she is immediately examined and treated by medical personnel and referred to social workers and volunteers from women's organizations who then see that she receives counseling, if needed, and coordinate further assistance. A similar integrated response should also be in place elsewhere in the system, particularly in police stations, which may be the first point of contact for victims.

Even where services are not integrated, the police, hospital staff, and other providers need training in how to support victims, the services available, and the relevant laws. Spain required such training as part of its Law on Comprehensive Protection Measures against Gender-Based Violence. The law's implementation includes awareness and communications campaigns, hotlines for victims, advice services for men, and training for judges and other judicial personnel (on domestic violence awareness, treatment of victims, and features of the law). Police officers and medical staff were also trained, the latter in a specialized health protocol on how to treat victims of violence under the national health system.

But the systematic criminalization of violence can backfire. Not all women want their partners to be convicted (especially when he is the main source of the family's livelihood), and many reject systems that force them toward a punitive course of action. Many women perceive protective orders to be more helpful. For instance, data from the United States show that such orders reduce repeat violence and that women report feeling safer with them, even though the orders are often violated. Many countries, such as Bulgaria, offer temporary

protection orders and temporary custody of children. And some have eased procedures for issuing temporary restraining orders (at the local level) to respond faster to crisis situations. In the Philippines, Panang Barangay (village officials) have the power to grant protection orders that remain in place for 15 days, giving women and children time to travel to seek a court order. The police can also issue temporary restraining orders. 99

Making rights effective—Increasing women's access to justice

Besides improving the substance of the law, measures also need to be taken not only to empower women to demand that their rights are effective but also to make justice systems more responsive to women's needs. Actions in three areas are needed.

First, women need to be better represented within the organizations charged with formulating, implementing, and enforcing these laws, and the voices of female clients and stakeholders must be better reflected in the justice system. Greater representation has been achieved in some countries by setting quotas for female judges, police officers, and officials who implement laws and regulations for property, but evidence on the impact of these changes is limited. In Papua New Guinea, female local magistrates have helped raise awareness among their male counterparts of the need to adopt gendersensitive approaches to the cases that come before them. 100 In Ethiopia, local land committees must have at least one female member, increasing knowledge of land issues among women and their participation in the land registration process.¹⁰¹ Government-sponsored policy discussions in Rwanda on changes in land laws in Rwanda that engaged civil society, including women's groups, not only helped refine these policies but also made individuals aware of their rights. And, in Pakistan, female paralegals conduct consultations and synthesize women's concerns into policy reports, shaping the discourse and influencing policy makers. 102

In addition to helping women access the justice system, technology also can play a role in making sure that women's views are represented in the setting of legal policy. In Kosovo, following independence in 2008, the commission drafting the country's constitution decided to allow rural women to participate provided they could reach

the city where the drafting was taking place within 48 hours. Women for Women International used mobile phones to mobilize 250 rural women to come to the city within this tight time frame and address the commission. The result was a constitution with provisions for female participation in political institutions as well as other guarantees related to gender equality. 103

Second, women's rights can be made more effective when various parts of the justice system are made sensitive to the specific needs of women or target women clients explicitly. In some countries where judicial delays in cases of domestic violence can be long, governments have set up special courts, as Liberia did for rape cases, or fast-track courts, as Nepal did for cases involving women and children. Service providers can also be made more aware of the relevant laws. The PEKKA (Program for Women Headed Households) Women's Legal Empowerment program in Indonesia provided training for village paralegals that focused on domestic violence and family law. It also held district forums to bring together judges, prosecutors, police, NGOs, and government officials to raise awareness of gender issues.¹⁰⁴ In Spain, judges, magistrates, and others in law enforcement are required to attend specific sessions on gender equality, nondiscrimination, and violence against women. Judges who have taken the training report changing their perceptions on violence issues and providing foster training for their peers. Where women's limited literacy is a constraint, translating laws into simpler language or local languages, as has been done in Botswana, can be helpful.

Targeting women also requires bringing services closer to women to deal with time and mobility constraints—for example, through providing community paralegals and mobile legal aid clinics for women to access the justice system. In Tamil Nadu in India, the introduction of 188 all-women police units, covering both rural and urban areas and focusing on crimes against women, increased women's comfort in approaching the police, including reporting domestic abuse. 105 Female-run police stations and specialized services for women were first introduced in Brazil and Peru, and they have resulted in greater access for women. 106 Targeting may also include cost considerations because women may be less likely to have the funds needed to access the legal system—particularly where poverty compounds gender inequalities. In Indonesia, the waiving of court fees for poor and marginalized groups has increased the ability of women to come before the courts.¹⁰⁷

Third, data have to be collected and made public so that the problems of women's access to justice are made more visible. Many countries still lack comprehensive data on issues around the type and quality of justice services available to women and the barriers that women face in engaging with judicial institutions. More information in the public domain will add to the urgency to act and help identify bottlenecks and improve accountability within the justice system, establish priority areas for action, and design interventions.

Increasing voice in fertility decisions

The availability of family planning services remains a constraint in some parts of the world. In some cases, the underserved population covers entire countries, but more often the underserved live in specific geographic areas within countries—for example, availability is more likely to be a problem in rural than urban areas. In addition, certain subpopulations such as the poor may also face limited access. For these groups, improved delivery of family planning services is a priority.

Control over fertility decisions—the number and spacing of children—goes beyond the provision of reproductive health services, however. Thus, two additional areas of policy are critical to increase women's control over fertility. The first involves boosting women's ability to exert bargaining power within the household, allowing them to act on their preferences about the number of children the couple has, and over time to change the social norms that help determine these preferences. The second policy focus involves improving the quality of family planning services to excluded groups.

The relative bargaining power of a man and woman within a household plays an important role in determining their fertility outcomes. For example, when men inherit more land, the couple is likely to have the number of children that is closer to male rather than female preferences. ¹⁰⁸ Some policy options for increasing female bargaining power already have been discussed. These include building up women's assets and increasing their income; increasing women's exit options; and increasing women's education and access to maternal healthcare.

Education and awareness may be the right tools to make both men and women use more family planning services.

Young woman, Bhutan

Educating men on the benefits and use of contraception can help enhance women's voice in determining their own fertility. Contraception uptake is higher when husbands are included in family planning education, as was the case in Bangladesh and Ethiopia. 109 Fewer children are born as a result. For example, in China, pregnancy and abortion rates were lower when men were educated with their wives as part of a family planning program, in contrast to couples where only the woman was educated. 110 But context is important. Sometimes excluding the husband altogether can lead to significant impacts. Evidence from Zambia showed that targeting a voucher for free contraception services to women alone, rather than to couples, led to significantly higher contraception use and a large reduction in unwanted births. While targeted couples also increased their use of contraception, there was no reduction in unwanted births.¹¹¹

More generally, shifting role models regarding family size and the resulting change in preferences can lead to significant drops in fertility. For example, the spread of televised soap operas in Brazil, depicting smaller families, led to lower fertility, especially for women in lower socioeconomic groups. ¹¹² Evidence on which specific government policies could change norms in this way is limited, however. One example comes from an evaluation of a government-sponsored radio soap opera in Tanzania, which found that the program worked by raising the discussion of contraception within families and the community and increased contraceptive use. ¹¹³

Improvements in family planning services should focus on three areas. First, a sufficient range of contraceptive options needs to be provided, registered, and prequalified expeditiously, but policy makers must take into account service providers' ability to keep the relevant contraceptives in stock. Efficiency improvements in supply chains may also be required because holding a large amount of reserves can be expensive (if

the contraceptives are not sold or expire before they are sold, for example).

Second, to make informed decisions, clients need to have adequate information about the available options, their side effects, and the advantages and limitations of different methods. For example, only about half of the clients in the Arab Republic of Egypt, Honduras, Maldives, and Niger were informed about potential side effects or problems with contraceptive methods. 114 Third, services need to be provided in a manner that protects the individual's or the couple's privacy. That requires training health care providers in protocols designed specifically for family planning. As the earlier discussion of Zambia showed, very different outcomes can result depending on whether women are approached individually and in private or as part of a couple.

AVOIDING THE REPRODUCTION OF GENDER INEQUALITIES ACROSS GENERATIONS FOR ADOLESCENTS AND YOUNG ADULTS

The reproduction of specific gender inequalities across generations gives rise to gender inequality traps, which are likely to most affect the poor and excluded in society. Some of these have been dealt with in earlier sections—reaching pockets of remaining disadvantage in education; increasing women's voice and participation in societal institutions; and enhancing women's voice within households. Here we examine measures to address gender inequalities that emerge in adolescence and early adulthood, a particularly critical time when decisions and choices are made that determine outcomes regarding skills, health, economic opportunities, and voice. The effects of these policies illustrate not only the importance of intervening early but also the ways in which the realms of endowments, economic opportunities, and agency are interrelated. For example, job training programs can improve employment prospects, but they also may delay pregnancy—shaping the future human capital and voice of these women.

Improving education and health outcomes

Evidence from careful impact evaluations across a broad range of countries at different income levels suggests that conditional cash transfers can be effective in keeping adolescent girls in school. The positive impacts on secondary school enrollment for girls are well documented in Latin America in countries such as in Colombia, Ecuador, Mexico, and Nicaragua. ¹¹⁵ More recently, evidence from Africa is beginning to show similar results. In Malawi, fairly small cash transfers to girls increased their enrollment and reduced dropout rates. ¹¹⁶ Moreover, while these transfers were aimed at education, they had benefits in other realms: those who received the transfers had one-third the rate of HIV infection of those who did not receive transfers, ¹¹⁷ and they had better mental health. ¹¹⁸

Other measures also appear to work in helping adolescent girls stay in school. Providing them with information on the returns to schooling is an example: in Madagascar, information on earnings for primary school completers provided to boys and girls as well as to their parents increased attendance rates by 3.5 percentage points. ¹¹⁹ In the Dominican Republic, a similar effort to provide accurate information on returns to education to boys also had a positive impact. ¹²⁰ And incentives such as the prospect of winning a scholarship or direct payments for performance can affect self-efficacy and improve test scores. ¹²¹

Beyond providing encouragement for adolescent girls to stay in school, policies are needed to help them catch up when they have been deprived of the opportunity-whether through poor decision making on their part or that of others-to accumulate human capital earlier on and through more conventional routes. Such "second-chance" programs can mitigate the risk of other bad outcomes later in the life cycle (such as reduced earnings and lower health status) that may result from poor educational outcomes early in life.122 Moreover, since health and education outcomes for mothers are positively associated with those of children, these programs can also reduce the intergenerational transmission of gender inequality.

Second-chance opportunities in education include programs intended for those currently in school who are falling behind (for example, remedial language instruction), as well as those designed to facilitate transition or reentry into mainstream systems (for example, equivalency and literacy programs). In designing these programs to reach teenage girls, policy makers should target those most at risk of falling behind because of lack of money, domestic burdens, and early marriage and pregnancy, all of which are typically associated with low socioeconomic status.

Extensive analysis in the 2007 World Development Report on youth points to the need to ensure these programs are tailored specifically to these groups (and are well targeted, since they tend to be costly). 123 Getting the curricula right and building in flexibility emerge as being of particular importance, although none of the programs discussed here has been rigorously evaluated. Examples of promising interventions include an equivalency program in Mexico allowing choice within curricula (including vocational skills) to ensure that out-of-school teenagers receive training most relevant to their needs, and a similar program in Colombia allowing greater flexibility of schedule and pace of learning. Other interventions have attempted to integrate life-skills and vocational training into literacy or numeracy programs to increase relevance for out-of-school adolescents. For example, the Senegal Pilot Female Literacy Program combines literacy training with life-skills programs that vary according to local needs, such as instruction in health, small-scale trades, or fruit and vegetable processing. 124

Programs to increase school enrollment (although not typically conceived of as second-chance programs), such as cash transfers to girls, may be particularly effective in giving out-of-school girls incentives to resume their studies in addition to reducing dropout rates. In Malawi, the effects of a small cash transfer

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Going to school has great importance. We will learn reading and writing and they will have a key impact on our future. If we don't study at school, we will end up disappointed and we would not get a good job.

Young woman, Afghanistan

on reenrollment were large, with the reenrollment rate for girls who had dropped out before the program increasing two and a half times. 125 In addition, a year after the program's introduction, the probability of marriage for girls receiving transfers declined by more than 40 percent and the probability of pregnancy fell by 30 percent.¹²⁶ These results imply that small incentives can bring substantial improvements for girls most at risk. Nevertheless, evidence also indicates that the design of these transfer programs needs to take into account intrahousehold resource allocation to ensure they do not indirectly worsen schooling outcomes for adolescent girls. A conditional cash transfer program in Colombia that increased the likelihood of attendance and enrollment in secondary school for both boys and girls also decreased attendance and increased work hours for nonparticipating siblings—particularly sisters—of participants. 127

Enhancing access to economic opportunities

The transition of young women into employment is a key moment to address the reproduction of gender inequalities across generations, and there is some evidence on what works in this regard. Active labor market policies, discussed earlier, can help with this transition, and recent impact evaluations suggest two ways to make these programs more effective. First, additional subsidies to encourage the participation of young mothers can help them cover the costs of child care. One example comes from Programa Joven in Argentina, which targeted low-income men and women under the age of 35. Besides providing extra subsidies for mothers, the program covered training, books, material, work clothing, and transport expenses. The benefits were particularly strong for women ages 21–35, who saw a significant increase in earnings and a 9–12 percentage point increase in employment, as well as for men under age 21.128

Second, these programs can be targeted on underlying problems of information in the labor market that may hinder young women's participation. In Peru, the ProJoven program provided training for youth, including classroom training and internships plus a stipend. And, because it also explicitly targeted labor market segregation by training women in traditionally male occupations, it was also potentially "transformative" in changing gender roles. On a range of mea-

sures, women did better than men-indeed, after 18 months, women saw an increase in labor income of more than 92 percent, compared with less than 11 percent for men. And occupational segregation was lower among program beneficiaries.¹²⁹ In Colombia, the Jovenes in Accion program illustrates another way to overcome information problems: placing the trainees in an internship with additional-onthe job training at the end of classroom training (this program also included additional stipends for mothers). 130 This program, which targeted poor, unemployed 18-25-year-olds, increased women's earnings more than men's. It also increased the likelihood that women had a formal sector job. And analysis shows that the training was more effective as the intensity of the on-thejob training increased.¹³¹

While these examples show the potential of these programs in middle-income countries, more evidence is needed on programs appropriate for lower-income settings. Recent evidence from Kenya shows that providing information to young girls about the higher returns to vocational training in male- relative to femaledominated industries increased girls' enrollment in trade school courses that prepared them for these male-dominated trades. 132 Given the need for more robust evidence from a broader range of settings, the Adolescent Girls Initiative, a public-private partnership, is in the process of evaluating a number of interventions in several low- and middle-income and postconflict countries; these interventions include both "hard skills," such as vocational training, and "soft skills," such as life-skills training and mentoring (box 7 in the Overview).

Helping adolescents make smart reproductive decisions

Adolescence is also the time of sexual debut for many girls and boys. Girls tend to start their sexual life in relations with older boys or men. This age difference and partners who are (often) more experienced reduce the voice and bargaining position of these girls when deciding on contraception use. Girls are also underserved in many cases by reproductive health services or lack sufficient information regarding their rights. The unintended pregnancies that result can have a range of health and long-term economic effects, including lower educational qualifications and delayed entry into work.

Helping adolescents reduce these risks is not simple. The promotion of contraception, when done in isolation, has not been shown to be an effective tool for reducing unintended pregnancies among adolescents. Similarly, educational interventions alone have not yet been found to be broadly effective. However, interventions that combine these measures with other interventions such as skill building have been shown, in rigorous evaluations, to be effective in reducing unintended pregnancies among adolescents in a range of settings, although programs still need to be appropriately tailored to cultural and social settings. 133 For example, a program for adolescent girls in Uganda, which combined reproductive education, life-skills training, and livelihood training, resulted in a significant increase in condom use and a lower number of children among the adolescent girls who participated. 134 Sometimes, economic empowerment alone can have a marked impact. A recent evaluation of a youth job-training program in the Dominican Republic, which included life-skills training plus apprenticeship showed a significant reduction in pregnancies among participants. 135

Aspirations

Adolescence is also the age when lifelong aspirations are molded and when social norms and perceptions really start to bind for boys and girls. Across countries and cultures, adolescence is a period where horizons for boys often expand while those for girls may shrink, especially for poor girls or girls in rural areas where distance and norms around mobility can be a significant constraint. So, interventions in this area need to focus on building life skills, including social capital for adolescent girls, improving their aspirations and agency, and reducing risky behavior.

Exposure to female role models whose positions of leadership or power contradict stereotypes of women's roles can reduce the intergenerational transmission of gender norms. A study of political reservation for women in India showed that teenage girls who had repeated exposure to women leaders were more likely to express a desire to marry later, have fewer children, and obtain jobs requiring higher education—all aspirations that challenge traditional norms. ¹³⁶ Increased economic opportunities for young girls can also change their own perceptions of gender roles and those of their communities. A program in Delhi that linked communities

to recruiters for high-paying telephone work found that men and women in these communities were more likely to expect large dowries for their sons and to find it acceptable for women to live alone before marriage and to work before and after marriage or childbirth.¹³⁷

Protecting the inheritance of daughters can also enhance their agency. In Cambodia, Colombia, and Rwanda, intestate succession laws designate girls (as well as boys) to receive a share of their parents' land. Although the writing of wills can also help direct assets toward daughters, parental preferences shaped by prevailing norms may often discriminate against girls. In Mexico, although wives were selected nearly as often as sons to inherit property and women chose their daughters as sole heirs more often than men did, women still did not choose to leave equal shares to girls—both men and women preferred sons as sole heirs.¹³⁸

One policy response is to circumscribe a fraction of the property over which the will writer has control, reserving the remaining fraction to be inherited by the spouse and children. In Rwanda, this policy change, enforced through land title registration, led to a significant increase in inherited land designated for girls (as well as boys). ¹³⁹ In India, this legal reform led not only to increased land inherited by girls but also to an increase in age at marriage and higher education levels. ¹⁴⁰ While these reforms in India were not sufficient to completely eliminate the male bias in inheritance patterns, they provide a powerful push to efforts to address gender gaps for the next generation.

MAKING GENDER-SMART POLICIES: FOCUSING "GENDER MAINSTREAMING"

The preceding discussion has focused on targeted interventions to address various facets of gender inequality. This section broadens the discussion to more general policies and asks how and why their gender-differentiated impacts should be taken into account systematically. The reason for considering these impacts is twofold, mirroring the motivation of the Report. First, lack of attention to gender issues can undermine the effectiveness even of policies whose objective has nothing to do with gender equality. Second, these effects matter because many policies can be

implemented in a way that also improves gender equality. This discussion serves to focus "gender mainstreaming" in a more strategic way.

How can gender issues undermine policy effectiveness? Throughout, the Report has discussed areas where gender inequalities are persistent. Underlying this persistence are the workings and interactions of markets and formal and informal institutions and the responses of households. These factors, in turn, affect how men and women respond to different policies. Failing to take these factors into account can mean the policies will have unintended consequences—or simply not work—even when they have nothing to do with gender.

Take relations within the household. The relative bargaining power of men and women affects how the household responds to policy—and this bargaining process extends not only to what their options are outside of the household (for example, divorce laws, labor market opportunities) but also to how much information is shared with each of them. An experiment with married couples in the Philippines illustrates. When men were given an amount equal to one day's wage, their response differed simply according to what their spouses knew—when she did not know, men chose to save the money, and when she did know, they chose to spend the money. And when spouses were able to discuss what to do, the men put the money into their wives' accounts. 141

Another example of how household relations matters comes from Papua New Guinea. Gender roles in harvesting oil palm call for men to climb the trees and harvest fruits, while women collect the fruit that has fallen on the ground. When the oil palm industry realized that 60-70 percent of the fruit on the ground was not being collected, it tried to deal with constraints women faced, such as giving them special nets and timing collection to coordinate with their care duties. Nothing worked—until, in the Mama Lus Frut scheme, women got their own harvest record cards and were paid directly into their personal bank accounts. Yields increased significantly, as did female participation in oil palm harvesting.¹⁴²

These examples show why *all* policy makers need to consider the underlying causes of persistence of gender equality, understand which ones matter for the policy at hand, and then figure out how to make the policy more effective. This kind of analysis can also help policy makers

figure out what they might do to improve gender equality at the same time, an issue to which we turn below.

Dealing with gender-differentiated market failures

What you don't know can hurt others: Problems of information

As chapter 5 showed, the lack of good information on the part of employers and creditors makes it hard for women to break into new sectors and get the financing they need. While the policies discussed earlier in this chapter can provide some ways to facilitate this flow of information, interventions in other areas also can be brought to bear. Take the case of banking supervision, where one of the central goals of policy interventions is to improve banks' management of risk. One risk management tool is credit bureaus, which collect information about the creditworthiness of individuals for use by banks in making their lending decisions. Women, more likely to be concentrated in informal borrowing and microfinance, are underrepresented in these databases, so a prospective formal sector lender faces an information problem. But if women's credit history from their microfinance activity were in these databases, this information problem could be alleviated. Improving bank supervision policies in this way is also more likely to improve gender equality.

For Proyecto Servir in Ecuador, a range of government actors, international agencies, microfinance institutions, and private credit bureaus came together to include microfinance data in the credit bureaus' databases. The initial target was the data for two geographic areas and 27 microfinance institutions, but demand was so great that data for more than 180 institutions across the country were eventually put into the databases. Not only will this intervention help microfinance institutions make better lending decisions, it will also help microfinance clients—mostly women—get formal sector credit.

It's not only who you know, it's how many you know: Building women's networks

Networks that form with a critical number of individuals of one sex can help new members decide to enter a sector or profession and provide information about how to succeed and the like. In this way, they can also exclude members of the other sex, which can perpetuate gender inequalities. A rural road project in Peru sought to overcome this problem. The project's main policy objective was to improve rural transport for economic integration, but in pursuing this objective, gender equality was also considered, with a focus on increasing women's representation in road maintenance. The project explicitly recruited women among the entrepreneurs who ran the microenterprises responsible for road maintenance. A quota of 10 percent female participation initially helped boost female engagement from a baseline of 4 percent, and eventually 24 percent of the microentrepreneurs were female. Women engaged more in group activities, and road maintenance work became a more socially acceptable occupation for women.

Leveling the playing field

Addressing discrimination in laws and regulations

Looking for and fixing discrimination when revising regulations for other reasons can improve gender equality. Take the case of tax policy. Taxes can explicitly discriminate against women when they face different tax rates for the same income or earnings as men. In Morocco, the tax allowance for children is allocated to men unless women can prove that their husband and children depend on them financially. 143 So men face a lower tax burden than women. Tax reforms aimed at efficiency would try to equalize this tax rate so that women are not penalized for market work. These reforms would also enhance gender equality. In Uganda, inherited property not used for business, property, or employment income is exempt from taxation. Efficiency-enhancing tax reforms would reduce or eliminate this tax exemption. And because men inherit much more than women, such a reform would also promote gender equality.144

Making existing laws and regulations work better for women: Improving enforcement

Women often face more limited access to mechanisms of redress—whether complaint mechanisms within a firm or access to police and legal services. Improving women's access to enforcement mechanisms can thus improve gender equality in a range of interventions involving firms, state-owned enterprises, and governments. In the Democratic Republic of Congo,

as part of a larger effort to restructure the transport sector, the National Railway Company, in collaboration with the unions, has set aside earmarked funding to compensate surviving widows and orphans of employees who are due retiree benefits. The funds will go directly to the beneficiaries and, where they cannot be immediately found, be kept in a dedicated fund for future claims. This approach was taken expressly because widows and orphans tend to be less likely to either know about or assert their claim when their employed spouse or parent dies.

Better access to services

Women use services in ways different from men, for reasons that range from the constrained mobility of women to the attitude of service providers toward female clients. Policy responses require both changes in client orientation and more fundamental structural changes. One example of these kinds of issues comes from the prices charged for electricity. One recent study found that 14 of 15 electricity utilities in Latin America charged more to residential electricity users than to commercial users. Because women are much more likely than men to run their business out of their home, this pricing policy increased costs for women who own small businesses.

Paying attention to norms

Recognizing women's care duties

Women bear a disproportionate amount of the care duties within households and families. As we have seen, a wide range of policies have the potential to affect this-ranging from infrastructure improvements to labor regulations. Other policies can make a difference as well, in ways that may not be as obvious. One example is the approach taken in Vietnam to calculating severance packages as part of restructuring public enterprises. The benefits provided by the public sector (better maternity leave and flexible work arrangements) relative to the private sector meant that the average woman would lose more from retrenchment than her male colleagues. So, compensation based entirely on seniority would effectively penalize women.¹⁴⁶ The government took this into account by combining a payment based on seniority with a significant lump-sum payment. The policy explicitly took into account women's care duties, making them part of the calculation in compensating workers for their lost jobs. 147 One year after separation, women were more likely than men to rate their well-being as better or the same. 148

Taking account of the allocation of resources within the household

As seen earlier in the Report, couples do not always (or even often) act as a single unit. They might have different preferences and might not completely share their income—and, in the end, their different bargaining power will drive the outcome of household decisions. Changing the bargaining power within households can result from a range of policies from direct transfers to changes in income-earning opportunities. How will bargaining power change, and how will that affect program design? A female-targeted village savings and loan program of the International Rescue Committee in Burundi aimed to increase women's control over the resources that the program would bring into households. It piloted a six-session course for participants and their spouses analyzing household decision making. Women who participated in this course reported greater autonomy in decision making and less violence at home than those in the microfinance program who did not get this additional course.

Thinking on this type of policy can evolve. Initially, many conditional cash transfer programs targeted women, in part because women were likely to spend more of the transfer on children's endowments. However, these transfers themselves changed bargaining power within the household and, in some cases, such as Mexico, resulted in short-term increases in domestic violence.149 While this effect can disappear or change in the longer term, a number of these transfer programs took proactive action to tackle domestic violence and broader issues within household relations by including conditions to discourage domestic violence (Brazil), training and awareness of these issues for mothers and families (Colombia, Peru), and even dedicated social workers (Chile).¹⁵⁰

WANTED: BETTER EVIDENCE

To better understand whether policies to address gender inequalities are working, two actions are needed. First, programs and projects need to put in place effective monitoring systems to capture the gender dimensions of the problems they are addressing and the effects of their activities. This step requires, among other things, not only clear sex-disaggregated data from baseline surveys but also attention in those surveys to the causes of gender inequality that may matter for project design (for example, barriers in accessing services the project provides). As the project progresses, sex-disaggregated data on beneficiaries can help monitor progress and identify the need for mid-course corrections.

Second, there needs to be a focus on understanding whether specific interventions work. Evaluations are the only way this question can be answered. Different types of evaluations will provide answers to different questions. Welldesigned impact evaluations can be especially helpful because they use a well-defined comparison group to measure the effects on program beneficiaries. In this regard, much remains to be done. For example, in the realm of economic opportunity, the effects of active labor market policies have been subject to impact evaluations. But very little is known about policies to improve women's networks. And while a lot is known from impact evaluations about the effects of conditional cash transfers on a host of outcomes, less rigorous evidence is available on the effects of such programs that address maternal mortality. Finally, while the effects of political reservations in local governments in India have been well studied, there is less evidence about the effects of reservations for parliamentary seats or on the impacts of improving women's access to

The good news is that more evidence of this type is available today than existed even 10 years ago. But more needs to be done. Evaluations need to be built into projects as they are designed, which means planning for them. And additional resources will be needed. While knowledge gaps in individual areas are evident, two overarching themes deserve particular attention. First, efforts should focus on contrasting the impact of incremental interventions (those that work within existing gender norms) and transformative interventions (those that seek to transform gender roles), particularly when they focus on the same policy area, as in vocational education. Second, given that multiple constraints underlie many "sticky" gender gaps, emphasis should be placed on evaluating combinations of interventions (such as the provision of credit and training for entrepreneurs) against individual interventions to understand which constraints bind in different situations and which package is the most effective. This evidence will focus policy makers' attention on interventions that are proven to work and demonstrate the returns to investing in efforts to reduce gender inequality.

NOTES

- 1. World Bank 2003b.
- 2. Waddington and others 2009.
- 3. Tadesse and others 2010.
- 4. Galiani, Gertler, and Schargrodsky 2005.
- 5. Foster and Briceño-Garmendia 2010.
- 6. Foster and Briceño-Garmendia 2010.
- 7. United Nations 2011.
- 8. Bartlett and others 2005.
- 9. Bang and others 1999.
- 10. Ensor and others 2008.
- 11. World Bank 2005a.
- 12. Bhushan, Keller, and Schwartz 2002.
- 13. Björkman and Svensson 2009.
- 14. Cotlear 2006.
- 15. Lim and others 2010. JSY also had significant impacts on perinatal and neonatal deaths, which declined by 3.7 deaths per 1,000 pregnancies and by 2.5 deaths per 1,000 live births, respectively. The study was unable to detect an effect on maternal mortality; however, perhaps because maternal death is a relatively rare event, the study only had a sufficient sample size to detect very large effects.
- 16. Witter 2011. As with the study of JSY, these analyses were not able to find an impact on maternal mortality.
- 17. Prata and others 2010.
- 18. Prata and others 2010.
- 19. Ibid.; WHO and others 2010.
- 20. Burde and Linden 2010.
- 21. Jacoby and Mansuri 2011.
- 22. This compares all married individuals aged 18–65 with children under 17 years old using time use surveys from different countries.
- 23. Attanasio and Vera-Hernandez 2004.
- 24. Berlinski and Galiani 2007; Berlinski, Galiani, and McEwan 2009.
- 25. Paes de Barros and others, forthcoming.
- 26. Havnes and Mogstad 2009.
- 27. Medrano 2009.
- 28. Cascio 2006.
- 29. Ibid
- 30. Havnes and Mogstad, forthcoming.
- 31. http://www.mobilecreches.org.

- 32. SEWA Academy 2007.
- 33. Cassirer and Addati 2007.
- 34. Schlosser 2007.
- 35. Cassirer and Addati 2007.
- 36. Gornick and Hegewisch 2010.
- 37. Time use surveys, various countries and years.
- 38. This section draws on a background paper prepared by Clancy and others (2011), and a paper prepared by Köhlin and others (2011) for the World Bank environment strategy. The initial discussion of the evidence relies heavily on Köhlin and others (2011).
- 39. Dinkelman 2010; Grogan and Sadanand 2011.
- 40. Asian Development Bank 2010; Barkat and others 2002.
- 41. Massé 2003.
- 42. Ilahi and Grimard 2000.
- 43. Koolwal and van de Walle 2010.
- 44. Zwane and others 2011.
- 45. World Bank 2005b.
- 46. Khandker, Bakht, and Koolwal 2006.
- 47. FAO 2003.
- 48. This review draws on Todd (2010).
- 49. Galasso, Ravallion, and Salvia 2001.
- 50. Revenga, Riboud, and Tan 1994.
- 51. Holzer and Neumark 2000; Leonard 1989.
- 52. Holzer and Neumark 2000.
- 53. Frisancho, Karlan, and Valdivia 2008.
- 54. de Mel, McKenzie, and Woodruff 2011.
- 55. Bosch and Maloney 2010.
- 56. Bardasi and Gornick 2008.
- 57. For details and analysis of these and other legal reforms that affect women's economic opportunities in countries in Sub-Saharan Africa, see Hallward-Driemeier (2011).
- 58. This reform also removed the ability of the wife to deny the husband permission to work outside of the home.
- 59. Gajigo and Hallward-Driemeier 2011.
- 60. Deininger, Goyal, and Nagarajan 2010.
- 61. Deininger, Ali, and Zevenbergen 2008.
- 62. Swanson and Rajalahti 2010.
- 63. Cotula 2002.
- 64. Ibid.
- 65. Agarwal 2003.
- 66. Kumar and Quisumbing 2010.
- 67. See, for example, the discussion of the lack of evidence in Meinzen-Dick and others (2010).
- 68. Data from the Quota Project, http://www.quota project.org.
- 69. Esteve-Volart and Bagues 2010.
- 70. Beaman and others, forthcoming; Bhavnani
- 71. Beaman and others, forthcoming.
- 72. Krook 2009, 78-79; Rudman and Fairchild 2004.
- 73. Ban and Rao 2009; Beaman and others, forthcoming.

- 74. Chattopadhyay and Duflo 2004.
- 75. Iyer and others 2010.
- 76. Type of entities covered (for example, public limited, state-owned, local governments) by these quota laws vary across countries. For instance, Denmark, Finland, Iceland, Ireland, Israel, South Africa, and Switzerland have introduced quotas for state-owned enterprises, while Norway has imposed a mandatory 40 percent quota on public limited, state-owned and inter-municipal companies. See Pande and Ford (2011) for a list of countries with corporate quotas by type and quota targets and dates.
- 77. Pande and Ford 2011.
- 78. Matsa and Miller, forthcoming.
- 79. Bilimoria 2006.
- 80. McKinsey & Company Inc. 2007.
- 81. See Pande and Ford (2011) for a review of these correlational studies.
- 82. Ahern and Dittmar 2011; Matsa and Miller 2011. Slightly less rigorous evidence from the United States shows also that on average, firms with more gender-diverse boards have worse financial performance.
- 83. Ahern and Dittmar 2011.
- 84. Gajigo and Hallward-Driemeier 2011.
- 85. Here we refer to partial community of property regimes where the assets accumulated *during marriage* are equally divided and those accumulated before marriage revert to the person who owned them at the time of marriage.
- 86. See case of *Echaria v Echaria* (2007) KECA 1 and earlier cases of *Kivuitu v Kivuitu* (1991), and *Karanja v Karanja* (1976) 1 KLR 389.
- 87. Deere and León 2005.
- 88. Usdin and others 2005.
- 89. Jewkes and others 2008.
- 90. See, for example, Rodríguez and others (2006).
- 91. Adi and others 2007; Finkelhor 2009; Mikton and Butchart 2009.
- 92. Programs are "Safe dates," "The Fourth R: skills for youth relationships," and "Youth Relationship Project." Foshee and others 1998; Foshee and others 2000; Foshee and others 2004; Foshee and others 2005; Wolfe and others 2003; Wolfe and others 2009.
- 93. Agarwal and Panda 2007.
- 94. Stevenson and Wolfers 2006.
- 95. Morrison, Ellsberg, and Bott 2007.
- 96. See, for instance, Guedes, Bott, and Cuca 2002; Larraín 1999; and Parenzee 2001, in Bott, Morrison, and Ellsberg 2005.
- 97. Carlson, Harris, and Holden 1999; Holt and others 2003; Logan and Walker 2010; McFarlane and others 2004; Spitzberg 2002.
- 98. Protection Against Domestic Violence Act, State Gazette, No. 27, §1 2005.

- Lawyers Collective Women's Rights Initiative 2009.
- Unpublished studies on Papua New Guinea local magistrates.
- 101. Kumar and Quisumbing 2010.
- 102. Warraich 2010; UNIFEM 2010.
- 103. GSMA Development Fund 2010.
- 104. Sumner, Zurstrassen, and Lister 2011.
- 105. Natarajan 2005.
- 106. Jubb and Pasinato Izumino 2003.
- 107. Sumner, Zurstrassen, and Lister 2011.
- 108. Rasul 2008.
- 109. Becker 1996; Green and others 1972; Terefe and Larson 1993.
- 110. Wang, Vittinghoff, and Rong 1996.
- 111. Ashraf, Field, and Lee 2010.
- 112. La Ferrara, Chong, and Duryea 2008.
- 113. Rogers and others 1999.
- 114. Demographic and Health Survey Data, various years.
- 115. See Rawlings and Rubio (2003) for Mexico and Nicaragua, Barrera-Osorio and others (2008) for Colombia, and Schady and Araujo (2006) for Ecuador.
- 116. Baird and others 2009.
- 117. Baird, McIntosh, and Özler 2010.
- 118. Baird, de Hoop, and Özler 2011.
- 119. Nguyen 2008.
- 120. Jensen 2010b.
- 121. Angrist and Lavy 2009; Kremer, Miguel, and Thornton 2009.
- 122. World Bank 2006.
- 123. Ibid.
- 124. World Bank 2004.
- 125. Baird, McIntosh, and Özler 2011.
- 126. Baird and others 2009.
- 127. Barrera-Osorio and others 2008.
- 128. Aedo and Nuñez 2004.
- 129. Ñopo, Robles, and Saavedra 2007.
- 130. This feature can be found in a number of other programs as well.
- 131. Attanasio, Kugler, and Meghir 2008.
- 132. Hjort and others 2010.
- 133. Bearinger and others 2007; Gilliam 2010.
- 134. Bandiera and others 2011.
- 135. Martinez and others 2011.
- 136. Beaman and others 2009.
- 137. Jensen 2010a.
- 138. Deere and León 2003.
- 139. Ali, Deininger, and Goldstein 2011.
- 140. Deininger, Goyal, and Nagarajan 2010; Roy 2011.
- 141. Ashraf, Field, and Lee 2009.
- 142. This example comes from FAO 2011, 47.
- 143. Grown and Valodia 2010. This book provides a comprehensive discussion of both explicit and

- implicit tax discrimination and analysis for eight countries.
- 144. Ssewanyana and others 2010.
- 145. Komives and others 2005.
- 146. Rama 2002.
- 147. While this was used for a period of significant retrenchment, the lump sum component of this payment was eventually eliminated by the government.
- 148. World Bank 2003a, page 90.
- 149. Bobonis and Castro 2010.
- 150. Lindert and others 2007.

REFERENCES

The word *processed* describes informally reproduced works that may not be commonly available through libraries.

- Adi, Yaser, Amanda Killoran, Kulsum Janmohamed, and Sarah Stewart-Brown. 2007. "Systematic Review of the Effectiveness of Interventions to Promote Mental Wellbeing in Children in Primary Education. Report 1: Universal Approaches Which Do Not Focus on Violence or Bullying." National Institute of Health and Clinical Excellence, London.
- Aedo, Cristián, and Sergio Nuñez. 2004. "The Impact of Training Policies in Latin America and the Caribbean: The Case of Programa Joven." Working Paper 483, Inter-American Development Bank, Washington, DC.
- Agarwal, Bina. 2003. "Gender and Land Rights Revisited: Exploring New Prospects via the State, Family and Market." *Journal of Agrarian Change* 3 (1–2): 184–224.
- Agarwal, Bina, and Pradeep Panda. 2007. "Toward Freedom from Domestic Violence: The Neglected Obvious." *Journal of Human Development and Capabilities* 8 (3): 359–88.
- Ahern, Kenneth R., and Amy K. Dittmar. 2011. "The Changing of the Boards: The Impact on Firm Valuation of Mandated Female Board Representation." University of Michigan, Ross School of Business, Anne Harbor, MI. Processed.
- Ali, Daniel Ayalew, Klaus Deininger, and Markus Goldstein. 2011. "The Impacts of Land Title Registration: Evidence from a Pilot Program in Rwanda." World Bank, Washington, DC. Processed.
- Anderlini, Sanam Naraghi. 2007. Women Building Peace. What They Do, Why It Matters. Boulder, CO: Lynne Rienner Publishers.
- ——. 2010. "WDR Gender Background Paper." Background Paper for the 2011 World Development Report.

- Angrist, Joshua, and Victor Lavy. 2009. "The Effects of High Stakes High School Achievements Awards: Evidence from a Randomized Trial." *American Economic Review* 99 (4): 1384–414.
- Ashraf, Nava. 2009. "Spousal Control and Intra-Household Decision Making: An Experimental Study in the Philippines." *American Economic Review* 99 (4): 1245–77.
- Ashraf, Nava, Erica Field, and Jean Lee. 2010. "Household Bargaining and Excess Fertility: An Experimental Study in Zambia." Harvard University, Cambridge, MA. Processed.
- Asian Development Bank. 2010. "Asian Development Bank's Assistance for Rual Electrification in Bhutan: Does Electrification Improve the Quality of Rural Life?" Asian Development Bank, Manila.
- Attanasio, Orazio, Adriana. Kugler, and Costas Meghir. 2008. "Training Disadvantaged Youth in Latin America: Evidence from a Randomized Trial." Working Paper Series 13931, National Bureau of Economic Research, Cambridge, MA.
- Attanasio, Orazio, and Marcos Vera-Hernandez. 2004. "Medium- and Long-Run Effects of Nutrition and Child Care: Evaluation of a Community Nursery Programme in Rural Colombia." Working Paper Series, Institute for Fiscal Studies, London.
- Baird, Sarah, Ephraim Chirwa, Craig McIntosh, and Berk Özler. 2009. "The Short-term Impacts of a Schooling Conditional Cash Transfer Program on the Sexual Behavior of Young Women." Policy Research Working Paper Series, World Bank, Washington, DC.
- Baird, Sarah, Jacobus de Hoop, and Berk Özler. 2011. "Income Shocks and Adolescent Mental Health." Policy Research Working Paper Series 5644, World Bank, Washington, DC.
- Baird, Sarah, Craig McIntosh, and Berk Özler. 2010. "Cash or Condition? Evidence from a Cash Transfer Program." Policy Research Working Paper Series, World Bank, Washington, DC.
- Ban, Radu, and Vijayendra Rao. 2009. "Is Deliberation Equitable? Evidence from Transcripts of Village Meetings in South India." Working Paper Series 4928, World Bank, Washington, DC.
- Bandiera, Oriana, Niklas Buehren, Robin Burguess, Markus Goldstein, Selim Gulesci, Imran Rasul, and Munshi Sulaiman. 2011. "Economic Empowerment of Female Adolescents: Evidence from Uganda." Powerpoint presentation. American Agricultural Economics Associates, Pittsburgh.
- Bang, Abhay T., Rani A. Bang, Sanjay B. Baitule, M.
 Hanimi Reddy, and Mahesh D. Deshmukh. 1999.
 "Effect of Home-Based Neonatal Care and Management of Sepsis on Neonatal Mortality: Field Trial in Rural India." *Lancet* 354 (9194): 1955–61.
- Bardasi, Elena, and Janet C. Gornick. 2008. "Working for Less? Women's Part-Time Wage Penalties

- across Countries." Feminist Economics 14 (1): 37–72.
- Barkat, Abul, S. H. Khan, M. Rahman, S. Zaman, A. Poddar, S. Halim, N. H. Ratna, M. Majid, A. K. M. Maksud, A. Karim, and S. Islam. 2002. "Economic and Social Impact Evaluation Study of the Rural Electrification Program in Bangladesh." Human Development Research Centre, Dhaka.
- Barrera-Osorio, Felipe, Marianne Bertrand, Leight Linden, and Francisco Perez-Calle. 2008. "Conditional Cash Transfers in Education: Design Features, Peer and Sibling Effects. Evidence from a Randomized Experiment in Colombia." Working Paper Series 13890, National Bureau of Economic Research, Cambridge, MA.
- Bartlett, Linda A., Shairose Mawji, Sara Whitehead, Chadd Crouse, Suraya Dalil, Denisa Ionete, Peter Salama, and Afghan Maternal Study Team. 2005. "Where Giving Birth Is a Forecast of Death: Maternal Mortality in Four Districts of Afghanistan, 1999–2002." *Lancet* 365 (9462): 864–70.
- Beaman, Lori, Raghabendra Chattopadhyay, Esther Duflo, Rohini Pande, and Petia Topalova. 2009. "Powerful Women: Does Exposure Reduce Bias?" Quarterly Journal of Economics 124 (4): 1497–540.
- Beaman, Lori, Esther Duflo, Rohini Pande, and Petia Topalova. Forthcoming. "Political Reservation and Substantive Representation: Evidence from Indian Village Councils." In *India Policy Forum 2010*. Washington, DC, and New Delhi: Brookings Institution Press and National Council of Applied Economic Research.
- Bearinger, Linda H., Renee E. Sieving, Jane Ferguson, and Vinit Sharma. 2007. "Global Perspectives on the Sexual and Reproductive Health of Adolescents: Patterns, Prevention, and Potential." *Lancet* 369 (9568): 1220–31.
- Becker, Gary S. 1996. "Couples and Reproductive Health: A Review of Couple Studies." *Studies in Family Planning* 27 (6): 291–306.
- Berlinski, Samuel, and Sebastian Galiani. 2007. "The Effect of a Large Expansion of Pre-Primary School Facilities on Preschool Attendance and Maternal Employment." *Labour Economics* 14 (3): 665–80.
- Berlinski, Samuel, Sebastian Galiani, and Patrick J. McEwan. 2009. "Preschool and Maternal Labor Market Outcomes: Evidence from a Regression Discontinuity Design." *Economic Development and Cultural Change* 59 (2): 313–44.
- Bhavnani, Rikhil R. 2009. "Do Electoral Quotas Work after They Are Withdrawn? Evidence from a Natural Experiment in India." *American Political Science Review* 103 (1): 23–35.
- Bhushan, Indu, Sheryl Keller, and Brad Schwartz. 2002. "Achieving the Twin Objectives of Efficiency and Equity: Contracting Health Services in Cambodia." ERC Policy Brief Series, Asian Development Bank, Manila.

- Bilimoria, Diana. 2006. "The Relationship between Women Corporate Directors and Women Corporate Officers." *Journal of Managerial Issues* 18 (1): 47–61.
- Björkman, Martina, and Jacob Svensson. 2009. "Power to the People: Evidence from a Randomized Field Experiment on Community-Based Monitoring in Uganda." *Quarterly Journal of Economics* 124 (2): 735–69.
- Bobonis, Gustavo J., and Roberto Castro. 2010. "The Role of Conditional Cash Transfers in Reducing Spousal Abuse in Mexico: Short-Term vs. Long-Term Effects." University of Toronto, Toronto. Processed.
- Bosch, Mariano, and William F. Maloney. 2010. "Comparative Analysis of Labor Market Dynamics Using Markov Processes: An Application to Informality." *Labour Economics* 17 (4): 621–31.
- Bott, Sarah, Andrew Morrison, and Mary Ellsberg. 2005. "Preventing and Responding to Gender-Based Violence in Middle and Low-Income Countries: A Global Review and Analysis." Policy Research Working Paper Series 3618, World Bank, Washington, DC.
- Burde, Dana, and Leigh L. Linden. 2010. "The Effect of Village-Based Schools: Evidence from a Randomized Control Trial in Afghanistan." New York University and Columbia University, New York. Processed.
- Carlson, Matthew J., Susan D. Harris, and George W. Holden. 1999. "Protective Orders and Domestic Violence: Risk Factors for Re-Abuse." *Journal of Family Violence* 14 (2): 205–26.
- Cascio, Elizabeth. 2006. "Public Preschool and Maternal Labor Supply: Evidence from the Introduction of Kindergartens into American Public Schools." Working Paper Series 12179, National Bureau of Economic Research, Cambridge, MA.
- Cassirer, Naomi, and Laura Addati. 2007. "Expanding Women's Employment Opportunities: Informal Economy Workers and the Need for Childcare." International Labor Organization, Geneva.
- Chattopadhyay, Raghabendra, and Esther Duflo. 2004. "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India." *Econometrica* 72 (5): 1409–43.
- Clancy, Joy, Tanja Winther, Margaret N. Matinga, and Sheila Oparaocha. 2011. "Gender Equity in Access to and Benefits from Modern Energy and Improved Energy Technologies." Background paper for the WDR 2012.
- Cotlear, Daniel, ed. 2006. A New Social Contract for Peru: An Agenda for Improving Education, Health Care, and the Social Safety Net. Country Study. Washington, DC: World Bank.
- Cotula, Lorenzo. 2002. "Gender and Law; Women's Rights in Agriculture." Legislative Study 76, Rev. 1, Food and Agriculture Organization, Rome.

- de Mel, Suresh, David McKenzie, and Christopher Woodruff. 2011. "Business Training and Female Enterprise Start-up and Growth in Sri Lanka." World Bank, Washington, DC. Processed.
- Deere, Carmen Diana, and Magdalena León. 2001. "Who Owns the Land? Gender and Land-Titling Programmes in Latin America." *Journal of Agrarian Change* 1 (3): 440–67.
- 2005. "Liberalism and Married Women's Property Rights in Nineteenth-Century Latin America." *Hispanic American Historical Review* 85 (4): 627–78.
- Deininger, Klaus, Daniel Ayalew Ali, Holden Stein, and Jaap Zevenbergen. 2008. "Rural Land Certification in Ethiopia: Process, Initial Impact, and Implications for other African Countries." World Development 36 (10): 1786–812.
- Deininger, Klaus, and Hari Nagarajan. 2010. "Law Reform and Women's Access to Capital: Evidence from India's Hindu Succession Act." Policy Research Working Paper Series 5338, World Bank, Washington, DC.
- Dinkelman, Taryn. 2010. "The Effects of Rural Electrification on Employment: New Evidence from South Africa." Working Paper 272, Woodrow Wilson School of Public and International Affairs, Research Program in Development Studies, Princeton University, Princeton, NJ.
- Ensor, Tim, Mardiati Nadjib, Zahid Quayyum, and Amila Megraini. 2008. "Public Funding for Community-Based Skilled Delivery Care in Indonesia: To What Extent Are the Poor Benefiting?" European Journal of Health Economics 9 (4): 385–92.
- Esteve-Volart, Berta, and Manuel F. Bagues. 2010. "Are Women Pawns in the Political Game? Evidence from Elections to the Spanish Senate." Working Paper Series 200–30, Fundación de Estudios de Economía Aplicada, Madrid.
- Finkelhor, David. 2009. "The Prevention of Childhood Sexual Abuse." *Future of Children* 19 (2): 169–94.
- Fisas, Vincenc. 2008. "Annuario 2008 de Procesos de Paz." Icaria Editorial, Barcelona.
- FAO (Food and Agriculture Organization). 2003. "Revisiting the 'Magic Box'." Case Studies in Local Appropriation of Information and Communication Technologies, FAO, Rome.
- ——. 2011. "The State of Food and Agriculture 2010–11. Women in Agriculture: Closing the Gender Gap for Development." FAO, Rome.
- Foshee, Vangie, A., Karl E. Bauman, Ximena B. Arriaga, Russell W. Helms, Gary G. Koch, and George F. Linder. 1998. "An Evaluation of Safe Dates, an Adolescent Dating Violence Prevention Program." American Journal of Public Health 88 (1): 45–50.
- Foshee, Vangie A., Karl E. Bauman, Susan T. Ennett, George F. Linder, Thas Benefield, and Chirayath Suchindran. 2004. "Assessing the Long-Term Ef-

- fects of the Safe Dates Program and a Booster in Preventing and Reducing Adolescent Dating Violence Victimization and Perpetration." *American Journal of Public Health* 94 (4): 619–24.
- Foshee, Vangie A., Karl E. Bauman, Susan T. Ennett, Chirayath Suchindran, Thas Benefield, and George F. Linder. 2005. "Assessing the Effect of the Dating Violence Program 'Safe Dates' using Random Coefficient Regression Modeling." *Prevention Science* 6: 245–58.
- Foshee, Vangie A., Karl E. Bauman, W. F. Greene, Gary G. Koch, George F. Linder, and James E. MacDougall. 2000. "The Safe Dates Program: 1-Year Follow Up Results." *American Journal of Public Health* 90 (10): 1619–22.
- Foster, Vivien, and Cecilia Briceño-Garmendia, eds. 2011. *Africa's Infrastructure: A Time for Transformation*. Washington, DC: Agence Francaise de Développement and World Bank.
- Frisancho, Verónica, Dean S. Karlan, and Martín Valdivia. 2008. "Business Training for Microfinance Clients: How It Matters and for Whom?" Working Paper 2008–11, Poverty and Economic Policy (PEP), Research Network, Lima, Peru.
- Gajigo, Ousman, and Mary Hallward-Driemeier. 2011. "Constraints and Opportunities for New Entrepreneurs in Africa." World Bank, Washington, DC. Processed.
- Galasso, Emanuela, Martin Ravallion, and Agustin Salvia. 2001. "Assisting the Transition from Workfare to Work: A Randomized Experiment." Policy Research Working Paper Series 2738, World Bank, Washington, DC.
- Galiani, Sebastian, Paul Gertler, and Ernesto Schargrodsky. 2005. "Water for Life: The Impact of the Privatization of Water Services on Child Mortality." *Journal of Political Economy* 113 (1): 83–120.
- Gilliam, Melissa L. 2010. "Interventions for Preventing Unintended Pregnancies among Adolescents." *Obstetrics and Gynecology* 115 (1): 171–2.
- Gornick, Janet C., and Ariane Hegewisch. 2010. "The Impact of 'Family Friendly Policies' on Women's Employment Outcomes and on the Costs and Benefits of Doing Business." World Bank, Washington, DC. Processed.
- Green, Lawrence, Harold C. Gustafson, William Griffiths, and David Y. Raukey. 1972. "The Dacca Family Planning Experiment: A Comparative Evaluation of Programs Directed at Males and at Females." University of California, Berkeley, CA.
- Grogan, Louise, and Asha Sadanand. 2011. "Electrification and Labour Supply in Poor Households." University of Guelph, Economics Department, Guelph, Ontario. Processed.
- Grown, Caren, and Imraan Valodia, eds. 2010. Taxation and Gender Equity: A Comparative Analysis of Direct and Indirect Taxes in Developing and Developed Countries. London: Routledge.

- GSMA Development Fund. 2010. Women and Mobile: A Global Opportunity: A Study on the Mobile Phone Gender Gap in Low and Middle Income Countries. London: GSMA and the Cherie Blair Foundation for Women.
- Guedes, Alessandra, Sarah Bott, and Yvette Cuca. 2002. "Integrating Systematic Screening for Gender-based Violence into Sexual and Reproductive Health Services: Results of a Baseline Study by the International Planned Parenthood Federation, Western Hemisphere Region." *International Journal of Gynecology and Obstetrics* 78: S57–63.
- Hallward-Driemeier, Mary. 2011. "Improving the Legal Investment Climate for Women in Sub-Saharan Africa." World Bank, Washington, DC.
- Havnes, Tarjei, and Magne Mogstad. Forthcoming. "Money for Nothing? Universal Child Care and Maternal Employment." *Journal of Public Economics*.
- Hjort, Jonas, Michael Kremer, Isaac Mbiti, and Edward Miguel. 2010. "Vocational Education Vouchers and Labor Market Returns: A Randomized Evaluation among Kenyan Youth." Harvard University and Southern Methodist University, Berkeley, CA. Processed.
- Holt, Victoria, Mary A. Kernic, Marsha E. Wolf, and Frederick P. Rivara. 2003. "Do Protection Orders Affect the Likelihood of Future Partner Violence and Injury?" *American Journal of Preventive Medicine* 24 (1): 16–21.
- Holzer, Harry J., and David Neumark. 2000. "Assessing Affirmative Action." *Journal of Economic Literature* 38 (3): 483–568.
- Ilahi, Nadeem, and Franque Grimard. 2000. "Public Infrastructure and Private Costs: Water Supply and Time Allocation of Women in Rural Pakistan." *Economic Development and Cultural Change* 49 (1): 45–75.
- Iyer, Lakshmi, Anandi Mani, Prachi Mishra, and Petia Topalova. 2010. "Political Representation and Crime: Evidence from India's Panchayati Raj." International Monetary Fund, Washington, DC. Processed.
- Jacoby, Hanan G., and Ghazala Mansuri. 2011. "Crossing Boundaries: Gender, Caste, and Schooling in Rural Pakistan." Policy Research Working Paper Series 5710, World Bank, Washington, DC.
- Jensen, Robert. 2010a. "Economic Opportunities and Gender Differences in Human Capital: Experimental Evidence for India." Working Paper Series 16021, National Bureau of Economic Research, Cambridge, MA.
- ——. 2010b. "The (Perceived) Returns to Education and the Demand for Schooling." *Quarterly Journal of Economics* 125 (2): 515–48.
- Jewkes, Rachel, Mzikazi Nduna, Jonathan Levin, Nwabisa Jama, Kristin Dunkle, Adrian Puren, and Nata Duwury. 2008. "Impact of Stepping Stones

- on Incidence of HIV and HSV-2 and Sexual Behaviour in Rural South Africa: A Cluster Randomized Controlled Trial." *British Medical Journal* 337: 383–98.
- Jubb, Nadine, and Wânia Pasinato Izumino. 2003. "Women and Policing in Latin America: A Revised Background Paper." Paper presented at the Meeting of the Latin American Studies Association. Dallas, March 27.
- Khandker, Shahidur R., Zaid Bakht, and Gayatri Koolwal. 2006. "The Poverty Impact of Rural Roads: Evidence from Bangladesh." Policy Research Working Paper Series 3875, World Bank, Washington, DC.
- Köhlin, Gunnar, Subhrendu K. Pattanayak, Erin O. Sills, and Christopher Wilfong. 2011. "Energy, Gender and Development: Welfare Implications of Interventions and Future Options." Background paper for the WDR 2012.
- Komives, Kristin, Vivien Foster, Jonathan Halpern, Quentin Wodon, and Roohi Abdullah. 2005. "Water, Electricity and the Poor: Who Benefits from Utility Subsidies?" World Bank, Washington, DC.
- Koolwal, Gayatri, and Dominique van de Walle. 2010. "Access to Water, Women's Work and Child Outcomes." Policy Research Working Paper Series 5302, World Bank, Washington, DC.
- Kremer, Michael, Edward Miguel, and Rebecca Thornton. 2009. "Incentives to Learn." *Review of Economics and Statistics* 91 (3): 437–56.
- Krook, Mona Lena. 2009. "The Diffusion of Electoral Reform: Gender Quotas in Global Perspective." Paper presented at the European Consortium for Political Research, Lisbon, April 14.
- Kumar, Neha, and Agnes R. Quisumbing. 2010. "Policy Reform towards Gender Equality in Ethiopia: Little by Little the Egg Begins to Walk." Institute for Food Policy Research, Washington, DC.
- La Ferrara, Eliana, Alberto Chong, and Suzanne Duryea. 2008. "Soap Operas and Fertility: Evidence from Brazil." Working Paper Series 633, Inter-American Development Bank, Washington, DC.
- Larraín, Soledad. 1999. "Curbing Domestic Violence: Two Decades of Actions." In *Too Close to Home: Domestic Violence in the Americas*, ed. Andrew R. Morrison and María Loreto Biehl. Washington, DC: Inter-American Development Bank.
- Leonard, Jonathan S. 1989. "Women and Affirmative Action." *Journal of Economic Perspectives* 3 (1): 61–75.
- Lim, Stephen S., Lalit Dandona, Joseph A. Hoisington, Spencer L. James, Margaret C. Hogan, and Emmanuela Gakidou. 2010. "India's Janani Suraksha Yojana, A Conditional Cash Transfer Programme to Increase Births in Health Facilities: An Impact Evaluation." *Lancet* 375 (9730): 2009–23.

- Lindert, Kathy, Anja Linder, Jason Hobbs, and Bénédicte de la Brière. 2007. "The Nuts and Bolts of Brazil's Bolsa Família Program: Implementing Conditional Cash Transfers in a Decentralized Context." Social Protection Discussion Paper Series 0709, World Bank, Washington, DC.
- Logan, T. K., and Robert T. Walker. 2010. "Civil Protective Order Effectiveness: Justice or Just a Piece of Paper?" Violence and Victims 25 (3): 332–48.
- Martinez, Sebastian, and others. 2011. "Hard Skills or Soft Skills." Powerpoint presentation. World Bank, Washington, DC.
- Massé, René. 2003. Energy, Poverty, and Gender: Impacts of Rural Electrification on Poverty and Gender in Sri Lanka. Washington, DC: World Bank.
- Matsa, David A., and Amalia R. Miller. 2011. "A Female Style in Corporate Leadership? Evidence from Quotas." Northwestern University, Evanston, IL; and University of Virginia, Charlottesville, VA. Processed.
- ——. Forthcoming. "Chipping Away at the Glass Ceiling: Gender Spillovers in Corporate Leadership." *American Economic Review: Papers & Proceedings.*
- McFarlane, Judith, Ann Malecha, Julia Gist, Kathy Watson, Elizabeth Batten, Iva Hall, and Sheila Smith. 2004. "Protection Orders and Intimate Partner Violence: An 18 Month Study of Black, Hispanic, and White Women." *American Journal of Public Health* 94 (4): 613–8.
- McKinsey & Company Inc. 2007. "Women Matter. Gender Diversity, A Corporate Performance Driver." McKinsey & Company Inc., London.
- Medrano, Patricia. 2009. "Public Day Care and Female Labor Force Participation: Evidence from Chile." Department of Economics, Working Paper Series 306, Universidad de Chile, Santiago de Chile.
- Meinzen-Dick, Ruth, Agnes Quisumbing, Julia Behrman, Patricia Biermayr-Jenzano, Vicki Wilde, Marco Noordeloos, Catherine Ragasa, and Nienke Beintema. 2010. "Engendering Agricultural Research." Discussion Paper Series 00973, International Food Policy Research Institute, Washington, DC.
- Mikton, Christopher, and Alexander Butchart. 2009. "Child Maltreatment Prevention: A Systematic Review of Reviews." *Bulletin of the World Health* Organization 87 (5): 353–56
- Morrison, Andrew, Mary Ellsberg, and Sarah Bott. 2007. "Addressing Gender-Based Violence: A Critical Review of Interventions." World Bank Research Observer 22 (1): 25–51.
- Natarajan, Mangai. 2005. "Status of Women Police in Asia: An Agenda for Future Research." *Journal for Women and Policing* 17: 45–47.
- Nguyen, Trang. 2008. "Information, Role Models and Perceived Returns to Education: Experimental Ev-

- idence from Madagascar." Working Paper, Massachusetts Institute of Technology, Cambridge, MA.
- Nopo, Hugo, Miguel Robles, and Jaime Saavedra. 2007. "Occupational Training to Reduce Gender Segretation: The Impacts of ProJoven." Research Department Working Paper Series 623, Inter-American Development Bank, Washington, DC.
- Paes de Barros, Ricardo, Pedro Olinto, Mirela De Carvalho, Trine Lunde, Norbert Schady, Samuel Santos, and Andrezza Rosalem. 2010. "Impact of Free Childcare on Women's Labor Market Behavior: Evidence from Low-Income Neighborhoods in Rio de Janeiro." Paper presented at the World Bank's Gender Action Plan (GAP) Workshop, Regional Study on Gender Issues in LAC, Washington, DC, June 14.
- Pande, Rohini, and Deanna Ford. 2011. "Gender Quota and Female Leadership." Background paper for the WDR 2012.
- Parenzee, Penny. 2001. "While Women Wait . . . Monitoring the Domestic Violence Act." *Nedbank ISS Crime Index* 5 (3): 10–13.
- Pathmanathan, Indra, Jerker Liljestrand, Jo M. Martins, Lalini C. Rajapaksa, Craig Lissner, Amalia de Silva, Swarna Selvaraju, and Prabha Joginder Singh. 2003. "Investing in Maternal Health Learning from Malaysia and Sri Lanka." World Bank, Washington, DC.
- Prata, Ndola, Paige Passano, Amita Sreenivas, and Caitlin Elisabeth Gerdts. 2010. "Maternal Mortality in Developing Countries: Challenges in Scaling-up Priority Interventions." *Women's Health* 6 (2): 311–27.
- Rama, Martin. 2002. "The Gender Implications of Public Sector Downsizing: The Reform Program of Vietnam." World Bank Research Observer 17 (2): 167–89.
- Rasul, Imran. 2008. "Household Bargaining over Fertility: Theory and Evidence from Malaysia." *Journal of Development Economics* 86 (2): 215–41.
- Rawlings, Laura B., and Gloria M. Rubio. 2003. "Evaluating the Impact of Conditional Cash Transfer Programs: Lessons from Latin America." Policy Research Working Paper Series 3119, World Bank, Washington, DC.
- Revenga, Ana, Michelle Riboud, and Hong Tan. 1994. "The Impact of Mexico's Retraining Program on Employment and Wages." *World Bank Economic Review* 8 (2): 247–77.
- Rodríguez, Jorge M., Edgar Muñoz, Andres Fandiño-Losada, and María I. Gutiérrez. 2006. "Evaluación de la Estrategia de Comunicación 'Mejor Hablemos' para Promover la Convivencia Pacifica en Cali, 1996-2000." *Revista de Salud Pública* 8 (3): 168–84.
- Rogers, Everett M., Peter W. Vaughan, Ramadhan M. A. Swalehe, Nagesh Rao, Peer Svenkerud, and

- Suruchi Sood. 1999. "Effects of an Entertainment-Education Radio Soap Opera on Family Planning Behavior in Tanzania." *Studies in Family Planning* 30 (3): 193–211.
- Roy, Sanchari. 2011. "Empowering Women: Inheritance Rights and Female Education in India." University of Warwick, Warwick, U.K. Processed.
- Rudman, Laurie A., and Kimberly Fairchild. 2004. "Reactions to Counterstereotypic Behavior: The Role of Backlash in Cultural Stereotype Maintenance." *Journal of Personality and Social Psychology* 87 (2): 157–76.
- Schady, Norbert, and Maria Caridad Araujo. 2006. "Cash Transfers, Conditions, School Enrollment, and Child Work: Evidence from a Randomized Experiment in Ecuador." Policy Research Working Paper Series 3930, World Bank, Washington, DC.
- Schlosser, Analía. 2007. "Public Preschool and the Labor Supply of Arab Mothers: Evidence from a Natural Experiment." Department of Economics, Hebrew University of Jerusalem, Jerusalem. Processed.
- SEWA (Self-Employed Women's Association) Academy. 2007. "Taking Care of Our Children: Ensuring Long Term Impact (Balwadi Study)." SEWA Academy Research Unit, Ahmedabad, India.
- Spitzberg, Brian H. 2002. "The Tactical Topography of Stalking Victimization and Management." Trauma, Violence and Abuse 3 (4): 261–88.
- Ssewanyana, Sarah, Lawrence Bategeka, Madina Guloba, and Julius Kiiza. 2010. "Gender Equality and Taxation in Uganda." In *Taxation and Gender Equality: A Comparative Analysis of Direct and Indirect Taxes in Developing and Developed Countries*, ed. Caren Grown and Imraan Valodia. London and New York: Routledge.
- Stevenson, Betsey, and Justin Wolfers. 2006. "Bargaining in the Shadow of the Law: Divorce Laws and Family Distress." *Quarterly Journal of Economics* 121 (1): 267–88.
- Sumner, Cate, Matthew Zurstrassen, and Leisha Lister. 2011. "Increasing Access to Justice for Women, the Poor and Those Living in Remote Areas: An Indonesian Case Study." Justice for the Poor Briefing Note 6(2), World Bank, Washington, DC.
- Swanson, Burton E., and Riikka Rajalahti. 2010. "Strengthening Agricultural Extension and Advisory Systems: Procedures for Assessing, Transforming and Evaluating Extension Systems." Agriculture and Rural Development Discussion Paper Series 45, World Bank, Washington, DC.
- Tadesse, Dagnew, Assefa Desta, Aberra Geyid, Woldemariam Girma, Solomon Fisseha, and Oliver Schmoll. 2010. "Rapid Assessment of Drinking-Water Quality in the Federal Democratic Republic of Ethiopia: Country Report of the Pilot Project Implementation 2004–2005." World Health Or-

- ganization and United Nations Children's Fund, Geneva.
- Terefe, Almas, and Charles P. Larson. 1993. "Modern Contraception Use in Ethiopia: Does Involving Husbands Make a Difference?" *American Journal of Public Health* 83 (11): 1567–71.
- Todd, Petra E. 2010. "Effectiveness of Interventions Aimed at Improving Women's Employability and Quality of Work: A Critical Review." University of Pennsylvania, Philadelphia, PA. Processed.
- UN (United Nations). 2011. The Millennium Development Goal Report, Addendum 2, Goal 5: Improve Maternal Health. New York: UN.
- UNIFEM (United Nations Development Fund for Women). 2010. "Women's Participation in Peace Negotiations: Connections Between Presence and Influence." UNIFEM, Washington, DC.
- Usdin, Shereen, Esla Scheepers, Susan Goldstein, and Garth Japhet. 2005. "Achieving Social Change on Gender-Based Violence: A Report on the Impact Evaluation of Soul City's Fourth Series." *Social Science & Medicine* 61 (11): 2434–45.
- Waddington, Hugh, Birte Snilstveit, Howard White, and Lorna Fewtrell. 2009. "Water, Sanitation and Hygiene Interventions to Combat Childhood Diarrhoea in Developing Countries." International Initiative for Impact Evaluation 31E, Synthetic Review, New Delhi, London, and Washington, DC.
- Wang, C. E., L. S. Vittinghoff, and Z. M. Rong. 1996. "Effects of Family Planning with Husband Participation on Pregnancy and Induced Abortion." Paper presented at the Annual Meeting of the American Public Health Association. New York, NY,
- Warraich, Sohail. 2010. "Shirkat Gah Women's Resource Centre, Lahore (Pakistan). Legal Consciousness Training and Experience of Trainings of Marriage Registrars." Background note for Progress of the World's Women 2011–2012, New York.
- WHO (World Health Organization), UNICEF (United Nations Children's Fund), UNFPA (United Nations Population Fund), and World Bank. 2010. *Trends in Maternal Mortality: 1990 to 2008.* Washington, DC, and New York: WHO, UNICEF, UNFPA, and World Bank.
- Witter, Sophie. 2011. "Demand-Side Financing for Strengthening Delivery of Sexual and Reproductive Health Services: An Evidence Synthesis Paper." World Bank, Washington, DC. Processed.
- Wolfe, David A., Claire Crooks, Peter Jaffe, Debbie Chiodo, Ray Hughes, Wendy Ellis, Larry Stitt, and Allan Donner. 2009. "A School-Based Program to Prevent Adolescent Dating Violence: A Cluster Randomized Trial." *Archives of Pediatrics & Adolescent Medicine* 163 (8): 692–99.
- Wolfe, David A., Christine Wekerle, Katreena Scott, Anna-Lee Straatman, Carolyn Grasley, and Deborah Reitzel-Jaffe. 2003. "Dating Violence Preven-

- tion with At-risk Youth: A Controlled Outcome Evaluation." *Journal of Consulting and Clinical Psychology* 71 (2): 279–91.
- World Bank. 2003a. *Vietnam Development Report* 2004: Poverty. Washington, DC: World Bank.
- ——. 2003b. World Development Report 2004: Making Services Work for Poor People. Washington, DC: World Bank.
- ——. 2004. Senegal Pilot Female Literacy Project. ICRR 27399. Vol 1. Washington, DC: World Bank.
- ——. 2005a. Engendering Information and Communication Technologies: Ensuring Gender Equality in ICT for Development. Washington, DC: World Bank.
- ——. 2005b. Making Rural Roads Work for Both Men and Women: Promising Approaches to Engendering Development. Washington, DC: World Bank.

- ——. 2006. World Development Report 2007: Development and the Next Generation. Washington, DC: World Bank.
- ——. 2011. World Development Report 2011: Conflict, Security and Development. Washington, DC: World Bank.
- Zwane, Alix Peterson, Jonathan Zinman, Eric Van Dusen, William Pariente, Clair Null, Edward Miguel, Michael Kremer, Dean S. Karlan, Richard Hornbeck, Xavier Giné, Esther Duflo, Florencia Devoto, Bruno Crepon, and Abhijit Vinayak Banerjee. 2011. "Being Surveyed Can Change Later Behavior and Related Parameter Estimates." Proceedings of the National Academies of Sciences of the United States (PNAS) 108 (5): 1821–26.