

IMF STAFF DISCUSSION NOTE

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## EXECUTIVE SUMMARY

This Staff Discussion Note examines the effect of gender-based legal restrictions and other policy choices and demographic characteristics on female labor force participation. Drawing on a large and novel panel data set of gender-related legal restrictions, the study finds that restrictions on women's rights to inheritance and property, as well as legal impediments to undertaking economic activities such as opening a bank account or freely pursuing a profession, are strongly associated with larger gender gaps in labor force participation. These factors have a significant additional impact on female labor force participation over and above the effects of demographic characteristics and policies. In many cases, the gender gaps caused by these restrictions also have macro-critical effects in terms of an impact on GDP.

The results from this study suggest that it would be beneficial to level the playing field by removing obstacles that prevent women from becoming economically active if they choose to do so. In recommending equal opportunities, however, this study does not intend to render a judgment of countries' broadly accepted cultural and religious norms.

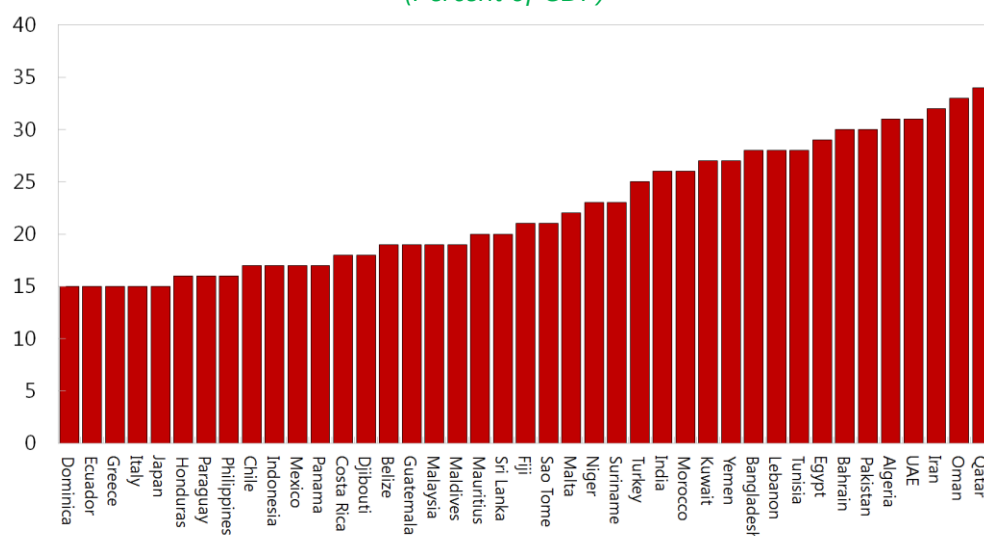
## INTRODUCTION

### 1. The participation of women in the labor force is in itself an important social and development goal, but it is also crucial from an economic growth and stability perspective.

The World Bank's *2012 World Development Report* argues that gender equality matters in its own right, but that it is also "smart economics" because it can enhance economic efficiency. The World Economic Forum's *2014 Global Gender Gap Report* finds a positive correlation between gender equality and per capita GDP, the level of competitiveness, and human development indicators.

2. **A growing body of literature points to the relationship between female participation in the labor force and economic growth (IMF 2013).** Various studies highlight that gender gaps in labor force participation, entrepreneurial activity, and education impede economic growth (Cuberes and Teignier 2014; Esteve-Volart 2004; Klasen and Lamanna 2009). Cuberes and Teigner (2012) simulate an occupational choice model that imposes several frictions on economic participation and wages of women, and show that gender gaps in entrepreneurship and labor force participation significantly reduce per capita income. Figure 1 shows countries for which the gain in GDP from closing gender gaps is at least 15 percent. In rapidly aging economies, higher female labor force participation can directly yield growth and stability gains by mitigating the impact of a decline in the labor force on growth potential (Steinberg and Nakane 2012). The opportunity for women to earn and control income has been associated with broader economic development (Heintz 2006), and total factor productivity gains (Loko and Diouf 2009).

**Figure 1. GDP Losses due to Economic Gender Gaps in Selected Countries**  
(Percent of GDP)<sup>1</sup>



Source: Estimates by Cuberes and Teignier (2014).

<sup>1</sup>Losses are estimated for a particular year for each country and can thus be interpreted as a one-off increase in GDP if gender gaps were to be removed.



**3. Previous empirical work has identified demographic characteristics and government policies as the key drivers of female labor force participation.** In terms of demographic drivers, studies have highlighted the role of fertility and educational attainment. Government expenditure policies, including maternity leave and child benefits as well as tax policies, have also been shown to significantly affect women's economic participation. The effect of legal gender-based restrictions on women's labor force participation, however, has been less explored in a systematic way.

**4. A novel and rich dataset on legal restrictions allows us to examine their effect on women's labor force participation for a large set of countries over a long time horizon.** The World Bank's Women, Business and the Law Database (WBL) presents a number of indicators on legal restrictions and regulations relating to women's economic participation and entrepreneurship, including limitations related to accessing institutions, owning and managing property, getting a job (such as restrictions on women's work, including working at night or in certain industries), building credit, and going to court. The database provides detailed information on the manner in which laws and regulations have been used to establish differences on the basis of gender, generally to the disadvantage of women. For selected indicators, the database allows for tracking legal changes back to 1960, providing ample information to assess the economic effects of such restrictions.

**5. The main contribution of this study is to analyze the effect of different legal restrictions on gender gaps in labor force participation for a large panel of countries.** In addition to including legal restrictions in the analysis, this note expands empirical coverage used in recent papers by (1) updating major parts of the comparative family policy database of Gauthier (2011) to include more recent years, and (2) substantially expanding the number of countries compared with previous empirical studies (Steinberg and Nakane 2012).

**6. The main finding of this study is that less legal discrimination against women is strongly associated with higher female labor force participation.** The empirical results highlight that legal equality in economic rights significantly contributes to explaining the variation of labor force participation gaps across countries and time. In particular, the following factors are all related to a statistically significant decrease in the gender gap in labor force participation: legally guaranteed equality between men and women; equal property rights; equal inheritance rights for sons and daughters; joint titling for married couples; women's liberty to pursue a profession, obtain a job, or open a bank account; a woman's right to initiate legal proceedings without her husband's permission; right to sign a contract; and a woman's right to be the head of a household. These effects come in addition to other factors, such as demographics, education, and family policies that have the expected sign and are statistically significant in the regression analysis.

**7. The policy implication of these findings is clear: countries that want to increase female labor force participation would do well to review and reform legal rules and institutions with a view to creating a level playing field.** That said, this study does not take a position on a woman's family-work choices. Many studies rightly note the significance of the

value added to the economy by women from family-related activities, which are not measured in GDP. The objective of this note is simply to identify policies that would create equal economic opportunities for men and women. To this end, the results suggest that, in addition to adopting family-friendly policies such as child care and maternity benefits, countries should strive to reform legal institutions, regulations, and laws to remove discrimination against women. Having said that, legal changes often closely interact with changes in social attitudes, which are difficult to capture empirically. Changes in the law may follow from changes in social attitudes that themselves can lead to changes in women's economic behavior. At the same time, legal changes enable women to enter into economic activity, which may change social attitudes. It should also be emphasized that the policy recommendations in this note with respect to creating equal opportunity should be considered against the backdrop of countries' broadly accepted cultural and religious norms.

**8. This note starts with a short summary of the literature on the drivers of female labor force participation.** It is followed by an overview of the data and the key stylized facts that emerge from those data. The empirical results are then presented and policy conclusions drawn.

## RELATED LITERATURE

**9. The theoretical and empirical literature on female labor force participation is vast (Box 1).** This overview does not aim to be exhaustive, but rather to provide a short summary of the main areas of work related to the current study. Specifically, it touches upon demographic factors, policy choices, institutions, legal variables, and signaling effects that have been associated with changes in women's economic activity.

### A. Demographics

**10. Fertility has been shown to significantly affect female labor force participation.** For individual countries, there is evidence of a negative relationship between fertility and women's participation in the labor force (Figure 2). For instance, Bloom and others (2009) find that the number of births is significantly negatively related to women's labor supply, with each birth on average decreasing women's labor supply by almost two years during a women's reproductive life. Mishra and Smyth (2010) find that a 1 percent increase in the fertility rate results in a 0.4 percent decrease in female labor force participation rates in G7 countries. While there is a negative relationship between the variables at the individual country level, there is a positive relationship between fertility and female labor force participation at the cross-country level. Using data from the Organization for Economic Cooperation and Development (OECD) countries, De Laat and Sevilla-Sanz (2011) explain this puzzle—namely a negative relationship at the individual country level but a positive one across countries—by including men's contribution to home production. They find that women living in countries where men participate more in home production are better able to combine having children with working, leading to greater participation in the labor force at relatively high fertility levels. The trade-off between family and



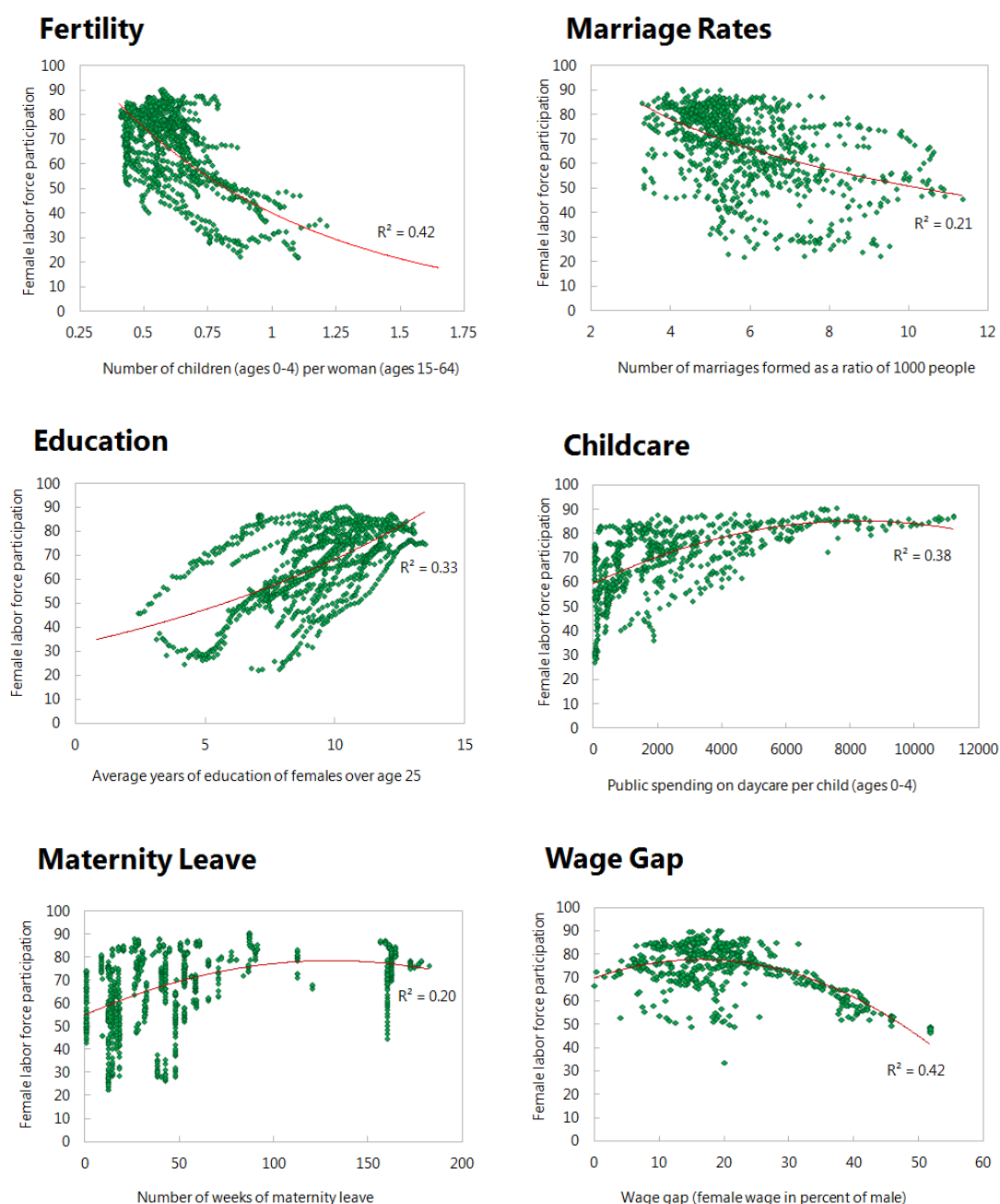
work is also reflected in a negative correlation between female labor force participation and marriage rates.

**11. Educational attainment for women is positively correlated with female economic participation.** Calibrating a dynamic model of labor supply, Eckstein and Lifshitz (2011) find that one-third of the increase in female employment during the last century in the United States can be attributed to education. In an empirical exercise, Steinberg and Nakane (2012), show that a one standard deviation increase in the education level in OECD countries is associated with a 3 percentage point increase in female labor force participation.

## B. Fiscal Policy

**12. The scope for increasing female labor force participation through tailored and country-specific fiscal policies is significant** (Aguirre and others 2012; Duflo 2012; Revenga and Shetty 2012; Sen 2001; Thévenon 2013; Kalb 2009). On the revenue side, tax credits or benefits for low-wage earners can stimulate labor force participation, including among women. By reducing the net tax liability or even turning it negative, tax credits increase the net income gain from accepting a job. Such credits are usually phased out as income rises. Policies can also build on the fact that female labor supply is more responsive to taxes than male labor supply (IMF 2012). For example, a switch from family income taxation to individual income taxation that reduces the tax burden for (predominantly female) secondary earners can increase female labor force participation, while it would affect the less-tax-elastic male labor supply to a smaller extent.

**13. As for expenditure policy, better access to comprehensive, affordable, and high-quality child care frees up women's time for formal employment** (Gong, Breunig, and King 2010). The elasticity of female labor supply with respect to the price of child care has been shown to range from  $-0.13$  to  $-0.2$ . Thus, reducing the price of childcare by 50 percent could be associated with an increase of 6.5 to 10 percent in the labor supply of young mothers. Other studies (Ghani, Kerr, and O'Connell 2013; Norando 2010) document the importance of public infrastructure to boost the participation of women in the labor force. Norando (2010) finds that a large part of the difference in female labor force participation rates in 1990 between the United States, on the one hand, and Brazil and Mexico, on the other, can be explained by the availability of basic infrastructure (electricity and running water). Ghani, Kerr, and O'Connell (2013) note that inadequate infrastructure affects women's participation more than that of men because women are more often responsible for household activities.

**Figure 2. Demographic and Policy Drivers of Female Labor Force Participation**

Sources: Barro and Lee (2014); OECD, Family Database, Social Expenditure Database (SOCX), Gender Portal, and Labor Force Statistics.

**14. The availability of maternity leave can encourage greater participation, but its effects can be nonlinear.** In other words, while properly designed family benefits can help support female labor force participation (Jaumotte 2003), long periods outside the labor market also risk reducing skills and earnings (Ruhm 1998; Edin and Gustavsson 2008). Independently of its duration, paid parental leave appears to have a negative effect on the gender gap in earnings

of full-time employees (Thevenon and Solaz 2013). As parental leave is mostly taken by women, it can indirectly encourage employer discrimination and discourage employers from hiring women for positions that require costly qualification and training periods (Mandel and Semyonov 2005). This implies that policies that encourage greater parity between paternity and maternity leave could support a more rapid return to work among mothers and help shift underlying gender norms (World Bank 2012).

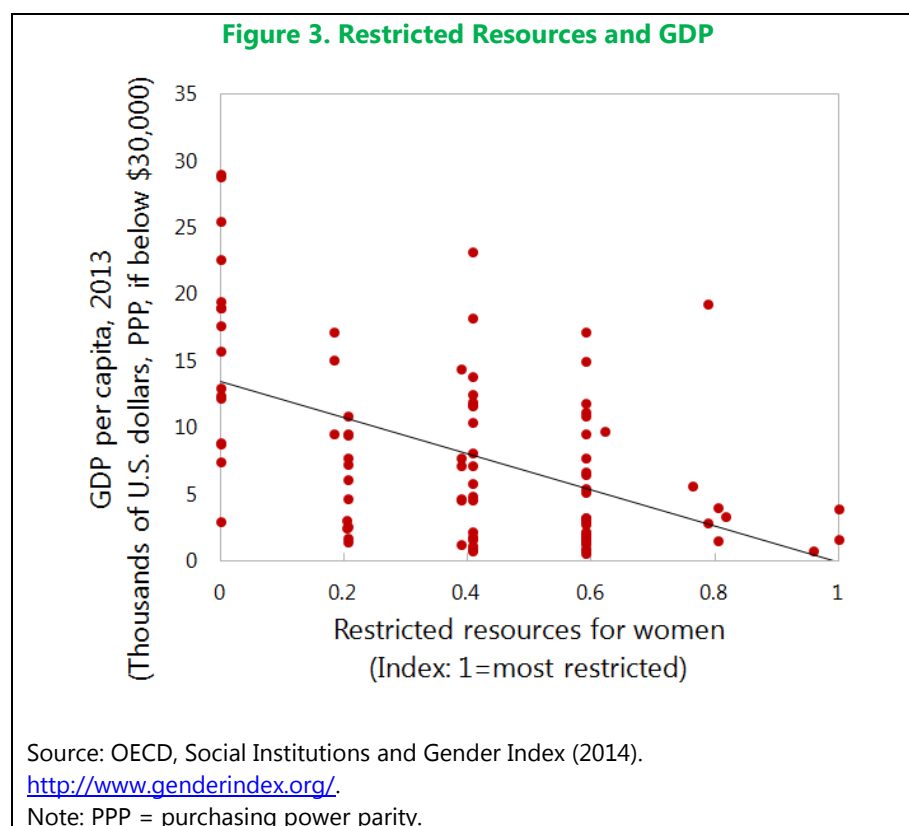
## C. Institutions

**15. Gender-based legal restrictions impede women’s empowerment and thus their economic participation.** In addition, weak or restrictive laws related to family, gender-based violence, and economic opportunities are most likely to impede women’s empowerment, with a lack of gender parity in business and institutional laws strongly associated with lower levels of economic participation by women (Klugman and Twigg 2012; World Bank and IFC 2013).

**16. Social institutions associated with more gender equality have been shown to be strongly positively related with better development outcomes and living standards** (Figure 3). More equal property rights for men and women stimulate investment by eliminating inefficiencies, are associated with higher GDP per capita, and can shift the composition of public spending related to health, education, and children (Doepke, Tertilt, and Voena 2012). Using information from the OECD’s Social Institutions and Gender Index (SIGI),<sup>1</sup> Branisa and Klasen (2013) show that the existence of institutions that perpetuate gender inequality is associated with lower female secondary education, higher fertility rates, higher child mortality, and a greater perception of corruption in the respective country. They propose, among other things, the passage of anti-discrimination laws or the introduction of programs in support of women and girls.

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<sup>1</sup> As a composite index, the SIGI scores countries on 14 indicators, grouped into five subindexes—discriminatory family code, restricted physical integrity, bias toward sons, restricted resources and assets, and restricted civil liberties—that measure different dimensions of social institutions related to gender inequality. The SIGI is an unweighted average of the five subindexes. The SIGI is available at <http://www.genderindex.org/>.



## D. Signaling Effects

**17. Women in leadership positions may also increase female labor force participation by providing role models for other women, and by combating stereotypes.** The introduction of quotas for women in political positions has been shown to increase women's political participation and votes for women. In Rwanda, the constitutionally guaranteed quota of 30 percent of women in Parliament has been filled and indeed exceeded (Klugman and Twigg 2012). By weakening stereotypes about gender roles, the use of quotas for women in leadership positions in Indian village councils has led to a greater likelihood of women standing for elected positions in these councils. Also, once women are in charge, they can significantly change public attitudes toward women and, importantly, raise the aspirations parents have for their daughters and the aspirations teenage girls have for themselves (Beaman and others 2009). The introduction of female quotas in Italy in the 1990s tripled the probability of voting for women (De Paola, Scoppa, and Lombardo 2010) and increased female representation in politics (Bonomi, Brosio, and Di Tommaso 2013). Kang (2013) found that the success of gender quota laws in Niger depended on the design of the law, the institutional context, and having female activists monitoring its application.

### Box 1. Theoretical Underpinnings of Female Labor Supply: A Selective Literature Survey

Female labor supply is often modeled using the framework of the time allocation model (Becker 1965), which posits that women make their labor supply decisions not only considering leisure and labor, but also home-based production of goods and services (including caring for children). As Jaumotte (2003) points out, working for a wage is chosen only if earnings at least make up for the lost home production (and the associated costs), implying a higher elasticity of female labor supply to wages.

Most studies have emphasized the importance of education in models of female labor supply. A number of studies have also included wages as a key in modeling female labor supply models (Heckman and MaCurdy 1980). Fernandez and Wong (2014) develop a dynamic life-cycle model with incomplete markets and risk-averse agents who differ in their educational endowments and make work, consumption, and savings decisions. They find that, in addition to the above factors, divorce risk has a large impact on married women's participation rates.

Eckstein and Lifshitz (2011) estimate a dynamic stochastic female labor supply model with discrete choice (contained in Eckstein and Wolpin 1989) and find that changes in education (accounting for a third of the increase in female employment) and wages (explaining about 20 percent) play a large role in explaining female employment. They also formulate a new framework that models intra-family dynamics (using dynamic stochastic games) and relate it to the household's labor supply decision.

## LEGAL RESTRICTIONS AND FEMALE LABOR FORCE PARTICIPATION

### A. Empirical Strategy

**18. This study empirically assesses the relationship between the presence of legal restrictions and female labor force participation.** The estimations include legal restrictions in addition to other standard determinants of female labor force participation. As noted earlier, previous empirical work has identified demographic characteristics such as fertility, educational attainment, and policies (including maternity leave and child benefits) as the key drivers of female labor force participation.

**19. For a set of OECD countries and a sample of emerging market and developing countries, panel regressions are estimated as follows:<sup>2</sup>**

$$Gap_{it} = \alpha + \beta \cdot Demographics_{it} + \gamma \cdot Education_{it} + \delta \cdot Policy_{it} + \varphi \cdot Legal_{it} + FE_i + \epsilon_{it},$$

where  $Gap_{it}$  refers to the male labor force participation rate minus the corresponding rate for females in country  $i$  at time  $t$ .  $Demographics_{it}$  includes the fertility rate, and  $Education_{it}$  refers to the years of schooling from the Barro-Lee database.  $Policy_{it}$  refers to the number of weeks of maternity leave provided (data available for OECD countries only).  $Legal_{it}$  includes the various legal restrictions contained in the WBL Database, as described below. Country fixed effects are included to capture other country specific factors.<sup>3</sup>

## B. Restrictions on Women's Rights: Data Description

**20. The World Bank's Women, Business and the Law Database focuses on how laws and regulations differentiate between men and women, and in turn alter incentives to join the labor force.<sup>4</sup>** When men and women are subject to different laws, women typically face institutions that are stacked against them. This study asks whether these differences can explain the gap between male and female labor force participation. The purpose here is to see if such legal differences in treatment have an impact on female labor force participation rates over and above the widely discussed determinants of women's participation, including unfavorable tax regimes, gender wage gaps, and educational gaps. The WBL database is based on existing laws (de-jure) and does not take into account how laws are put into practice (de-facto). As a result, in the absence of comprehensive data on the practical application of laws across countries, this study relates existing legal restrictions to gender gaps in participation.

**21. The WBL database provides detailed information on legal restrictions on women's economic participation.** It contains data on legal and regulatory barriers to women's economic participation and entrepreneurial activity in 143 countries, and focuses on seven indicators of gender-related differences in the legal and institutional framework:

- 1) *Accessing institutions*: Represents women's legal ability to interact with public authorities (for example, the acquisition of national identity cards);
- 2) *Using property*: Explores a woman's legal rights to own, control, and inherit property;

<sup>2</sup> See Annex 1 of a description of the dataset and definitions of variables and Annex 2 for details on the econometric methodology.

<sup>3</sup> We test for whether time dummy variables need to be included to control for the time trends. In the  $F$  test, we fail to reject the null that the coefficients for all years are jointly equal to zero, therefore no time fixed effects are required.

<sup>4</sup> The WBL database is available at <http://wbl.worldbank.org/data>.

- 3) *Getting a job*: Analyzes restrictions on women's work (for example, restrictions on night shifts for women);
- 4) *Providing incentives to work*: Assesses tax considerations (such as tax credits and deductions available to women relative to men);
- 5) *Building credit*: Assesses access to finance;
- 6) *Going to court*: Examines access to small claims court and the weight provided to a woman's testimony; and
- 7) *Protecting women from violence*: Assesses the strength of laws to prevent violence against women.

For two WBL indicators—accessing institutions and using property—the dataset provides detailed information for 100 economies spanning the period from 1960 to 2010 (Box 2).

**22. Gender-based legal restrictions are significant in a number of countries.** Despite progress over time, the WBL data suggest that almost 90 percent of the economies have at least one such restriction. Some countries have numerous legal restrictions, with some 28 countries having in place 10 or more restrictions on women's participation.

**23. The nature of the restrictions varies across countries.** In some countries, husbands can prevent their wives from working altogether, while in others (79 countries), there are laws that restrict women's participation in specific professions. Other restrictions impede women's property rights and thereby their access to finance. Specifically, the WBL report shows that in countries with property rights more favorable to women, there is greater financial inclusion of women (10 percentage points more bank accounts owned by women). Gender-based differences in property rights also make it more difficult for women to deploy immovable property as collateral in order access credit.



### Box 2. Fifty Years of Legal Rights

The 50 Years of Legal Rights Database tracks changes in women's right to access legal institutions and use property for 100 economies over a period of 50 years.<sup>1</sup>

**Accessing legal institutions.** Information compiled in this category of the database examines the degree to which the legal ability of women to interact with public authorities and the private sector is different from that of men. The information addresses questions in the following areas:

Women's status and capacity	Access to the Judicial System	Constitutional Rights
<ul style="list-style-type: none"> <li>• Can adult married women become a head of household or head of a family?</li> <li>• Can married women get a job/pursue profession?</li> <li>• Can married woman open a bank account?</li> <li>• Can married woman sign a contract?</li> </ul>	<ul style="list-style-type: none"> <li>• Can married women initiate legal proceedings without their husband's permission?</li> </ul>	<ul style="list-style-type: none"> <li>• Guaranteed equality</li> <li>• Nondiscrimination clause covering gender/sex</li> <li>• Is customary law valid under the Constitution?</li> <li>• Customary law invalid if it violates nondiscrimination clause</li> <li>• Is religious law valid under the Constitution?</li> <li>• Religious law invalid if it violates nondiscrimination clause</li> </ul>

**Using property.** Questions addressed in this category relate to women's ability to own, manage, control, and inherit property:

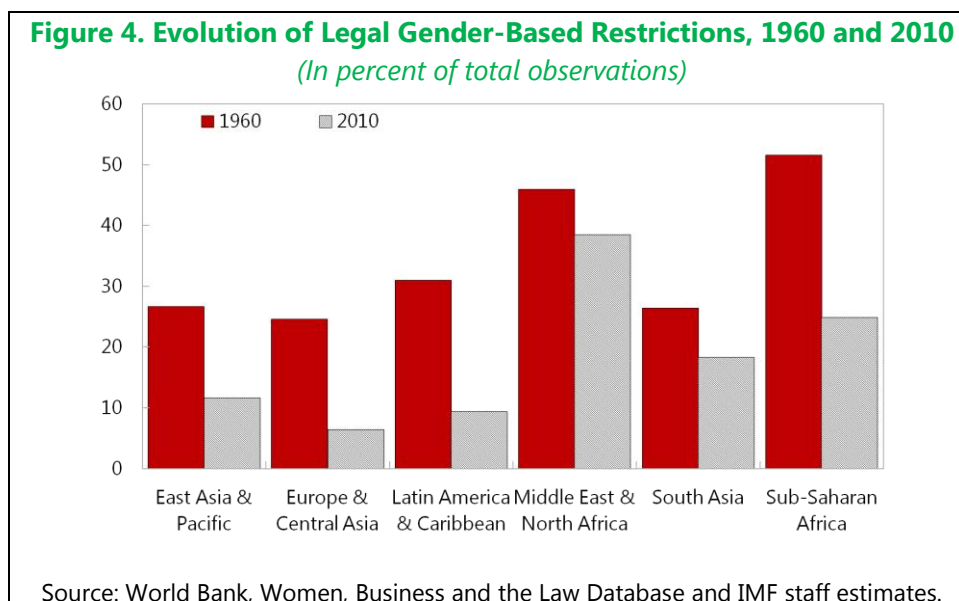
Property Ownership	Marital Regimes	Inheritance
<ul style="list-style-type: none"> <li>• Do unmarried women have equal property rights concerning immovable property?</li> <li>• Do married women have equal property rights concerning immovable property?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the default marital property regime?<sup>2</sup></li> <li>• Is joint titling of property the default case for married couples?</li> </ul>	<ul style="list-style-type: none"> <li>• Do sons and daughters have equal inheritance regarding immovable property?</li> <li>• Do surviving spouses have equal inheritance regarding immovable property?</li> </ul>

<sup>1</sup> The database is available at <http://wbl.worldbank.org/methodology/historical-data-methodology>

<sup>2</sup> Each of the examined property regimes confers a different degree of financial independence on women. In the full community property regime, all assets and income brought into a marriage as well as acquired during the marriage are treated as jointly owned. At the other end of the spectrum, there is the separation of marital property, in which property acquired during or before marriage is not jointly owned. Community property regimes recognize the nonmonetary contributions of women. They allow women to acquire wealth and provide for greater financial security, and they determine how women can buy, sell, or use property as collateral.

**24. There has been a steady easing of legal restrictions against women and thereby a gradual leveling of the playing field in most countries** (Figure 4). Between 1960 and 2010, 280 changes took place in the gender-based legal framework, mostly in the areas of introducing a nondiscrimination clause based on gender, female property rights, and the legal ability of married woman to get a job and pursue a profession. The data show that more than half of the restrictions in accessing institutions and using property in place in 1960 had been removed by

2010. The restriction on married women working (for example, needing their husband's permission) was removed in 23 countries, most recently by Turkey in 2001, and in South Africa and Guatemala in 1998. Restrictions on married women opening a bank account were relaxed in 20 countries in the sample, most recently by Mozambique in 2004 and Lesotho in 2006.



**25. Despite this progress, gender-related restrictions are still in place** (Figure 5). The number of gender-based restrictions remains high in particular in the Middle East and North Africa, sub-Saharan Africa, and South Asia. This continued prevalence of gender bias in jurisdictions is confirmed by rankings from related databases as well. For example, the OECD's Social Institutions and Gender Index (SIGI index) which is highly correlated with a number of subcomponents of the WBL, including equal inheritance rights and the rights of women to get a job or pursue a profession. Similarly, country rankings in the World Economic Forum's Global Gender Gap Index are highly correlated with those in the WBL and SIGI databases (WEF 2014).

### C. Legal Restrictions and Female Labor Force Participation: Stylized Facts

**26. The data suggest that there is a strong relationship between legal restrictions and labor market participation rates for women across countries.** Figure 6 shows that, for a sample of almost 100 countries, more equitable property rights and more equal rights to obtain a job or pursue a profession are associated with lower gender gaps in labor force participation, without significantly affecting male participation rates. Similar results hold for the relationship with labor force participation gaps with other economic rights. The right-side panels in Figure 6 indicate that smaller participation gaps in countries with no gender-based legal restrictions are driven by higher female labor force participation compared with countries with legal restrictions. There is considerable variation in female participation across countries, but averages are higher

and the range is narrower in countries where there are no legal differences for men and women. For instance, in countries with unequal inheritance rights for girls and boys (upper right-side panel in Figure 6) female participation rates vary from 23 percent to almost 60 percent, as opposed to countries with equal property rights, where female participation is in the narrower range of 40 to 60 percent (the midpoint is higher in the latter case). This suggests that other important cross-country characteristics, such as demographics, preferences, and other policies, are additional explanatory factors that also play an important role.

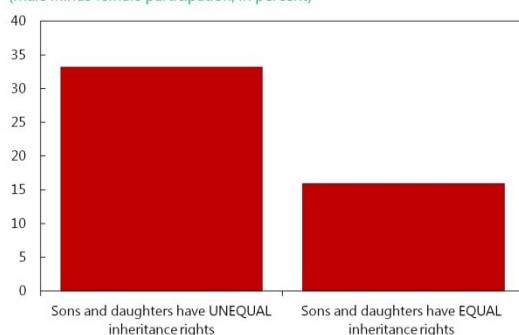


**Figure 6. Gender Gaps in Economic Participation and Legal Restrictions, 2010**

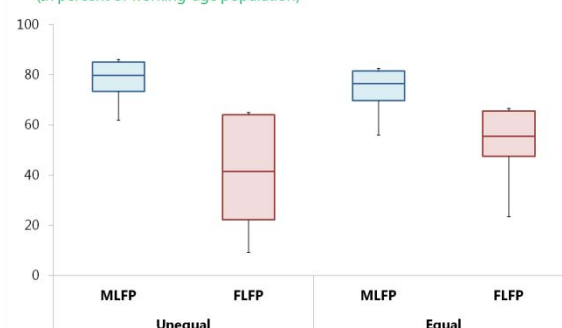
*Gender gaps in labor force participation are only half the size in countries without gender-based differences in inheritance rights....*

*... and deviations around the mean labor force participation rates in these countries are smaller.*

**Labor Force Participation Gap**  
(Male minus female participation, in percent)



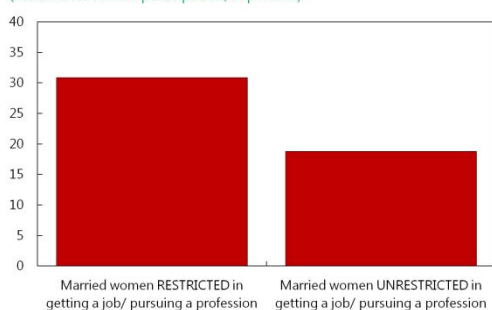
**Male and Female Labor Force Participation under Unequal and Equal Property Rights for Sons and Daughters**  
(In percent of working-age population)



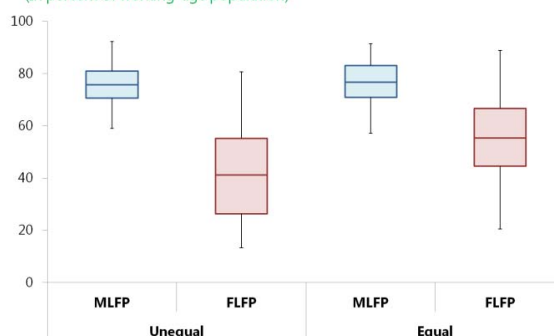
*Women are also more likely to join the labor market in which their pursuit of a profession is not restricted...*

*... and female labor force participation does not appear to substitute for male participation in these countries.*

**Labor Force Participation Gap**  
(Male minus female participation, in percent)



**Male and Female Labor Force Participation under Unequal and Equal Property Rights to Get a Job/Pursue a Profession**  
(In percent of working-age population)



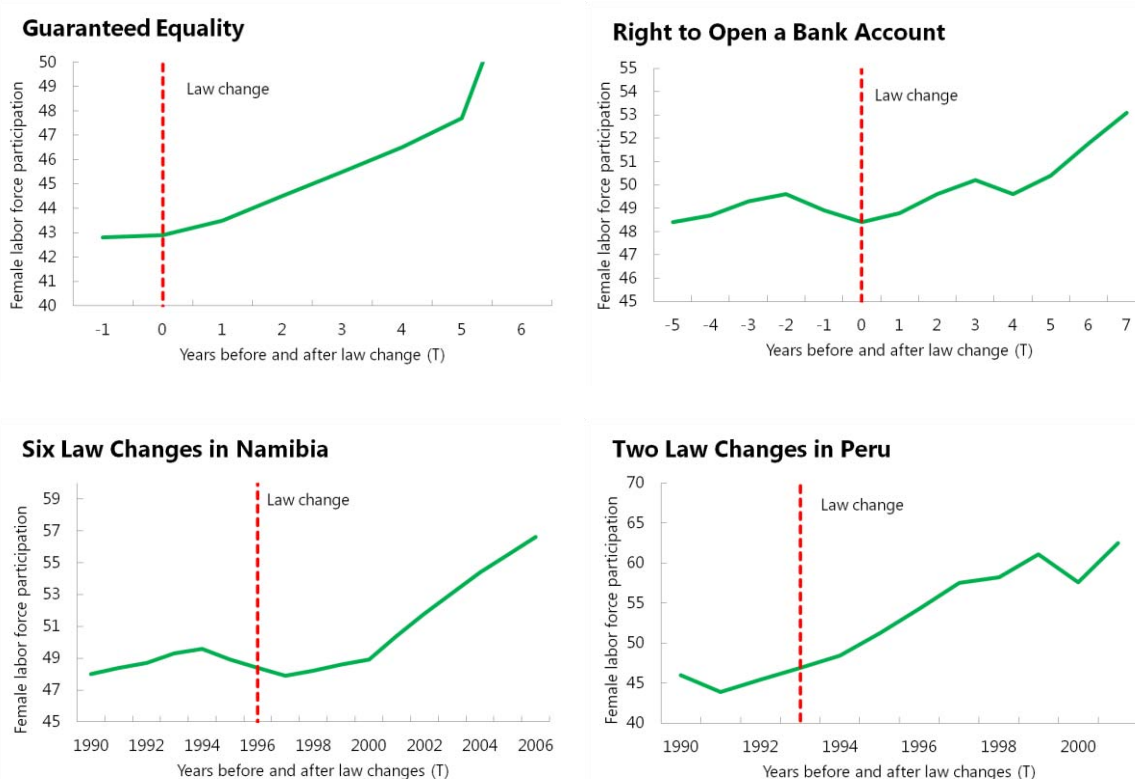
Sources: World Bank/International Finance Corporation (2013); World Bank, World Development Indicators and IMF staff estimates.

Note: FLFP = female labor force participation; MLFP = male labor force participation.

**27. Legal changes have also on average been associated with marked increases in female labor force participation over time.** The top left panel of Figure 7 plots the median female labor force participation rates for countries in which equality of men and women was constitutionally granted. The year of the change is shown in the figure as  $T = 0$ . It shows that, in 50 percent of the countries where equity was legally granted, female participation increased by some 5 percentage points in the following five years. Such large increases in female labor force participation are likely to have a significant effect on economic growth. Similar results hold for other rights, such as the right to open a bank account (top right panel of Figure 7).

**28. In some countries, several favorable changes in laws made during the course of a year have been found to have had strong effects on female labor force participation** (Box 3). For example, in 1996 Namibia passed the “Married Persons Equality Act,” which triggered six changes in the WBL classification. In particular, the law equalized property rights for married women and granted women the right to sign a contract, head a household, pursue a profession, open a bank account, and initiate legal proceedings without the husband’s permission. In Peru, customary law was abolished as a valid source under the Constitution in 1993, and invalidated if it violated the nondiscrimination clause. Malawi introduced similar laws invalidating customary law in 1994, combined with a nondiscrimination clause and equal inheritance rights for surviving spouses. Namibia and Peru experienced substantial increases in female labor force participation rates of 10 and 15 percentage points, respectively, in the decade that followed those changes (Figure 7, bottom panels). In Malawi, female labor force participation rates increased further from already high levels.

**Figure 7. Changes in Female Labor Force Participation Rates after Selected Legal Changes**



Sources: World Bank, Women, Business and the Law Database; and IMF staff estimates.

### Box 3. Constitutional Reforms in Kenya

**The 2014 World Women, Business and the Law (WBL) report by the World Bank and International Finance Corporation points to constitutional reforms in Kenya in 2010 as leading to changes equalizing women's legal status.** Kenya's Constitution has prohibited gender discrimination since 1997.

However customary law—traditional rules governing personal status and communal resources—was exempt from this nondiscrimination clause and prevailed in a number of areas, including inheritance and property rights afforded to women. The main reform in 2010 entailed making customary law subject to nondiscrimination and equal treatment. Until this change, women faced discrimination in matters related to personal status, inheritance, and property rights. In addition, the new Constitution sets quotas for the representation of women in the Parliament that are expected to be implemented by 2015.

**Such constitutional reforms can lead to increases in female economic participation.** The WBL report notes that in almost a third of sub-Saharan African countries, customary law prevails even if it violates constitutional provisions on gender-based discrimination. This suggests that there is significant potential to institute constitutional reforms similar to those enacted in Kenya to further level the playing field. This in turn could lead to sizable increases in female economic participation.

## D. Empirical Results

**29. Gender-based legal differences help explain female labor force participation gaps in a sample of OECD countries** (Table 1 and Figure 8). Figure 8 highlights, for selected countries, that the combination of demographics, policies and legal rights can explain the dynamics of the gender gap in labor force participation in the OECD well: the difference between the gap predicted by the regression and the actual gap is relatively small for most countries. Legal rights—such as equal property rights for married and unmarried women, as well as women's right to be head of a household, pursue a profession, open a bank account, or sign a contract and initiate legal proceedings—are strongly associated with lower gender gaps in OECD countries (Table 1, columns 3-10). These variables add explanatory power to the standard determinants of gender gaps in labor force participation:

- *Demographics and education.* Expanding the sample in Steinberg and Nakane (2012) to include more recent years and substantially increasing the number of countries covered by the panel qualitatively confirms results in earlier studies vis-à-vis demographic variables, such as family size and level of education. The findings show that education has a significant positive effect on female labor force participation and thereby shrinks the gap, whereas increasing family size has the opposite effect.
- *Policies.* Family-friendly policies such as maternity leave significantly contribute to reducing gender gaps in labor force participation in OECD countries.
- *Legal rights.* Columns 3-10 in Table 1 depict the results of regression of labor force participation gaps on gender-based legal indicators along with demographic variables and policies. The results show that the lack of equal economic rights significantly contributes to explaining the variation of labor force participation gaps across countries and time. In particular, the rights of married women to open a bank account, sign a contract, or initiate



legal proceedings without their husband's permission are associated with a statistically significant decrease in the gender gap in labor force participation. The removal of most of the legal restrictions individually leads to a reduction of between around 2-3 percentage points in the gender gap in labor force participation.

**30. Legal restrictions also strongly hinder female labor force participation in emerging markets and developing countries.** Table 2 shows the results of regressions based on a large set of emerging markets and developing countries, and Figure 9 depicts the regression fit for selected countries. The results show that legal rights—such as guaranteed equality, equal property, and inheritance rights, as well as other economic rights (for example, being allowed to head households)—are associated with smaller gender gaps in labor force participation in a statistically and economically significant way (Table 2, columns 2-8). For example, guaranteed legal equality reduces the gender participation gap by 1.3 percentage points. The larger variation in legal rights in the larger data set also allows us to explore the joint effect of the removal of legal restrictions. In particular, while each of the rights is important individually, the joint effect of guaranteed equity, more equal inheritance rights, and the legal right for women to be the head of a household is associated with a larger decline in gender gaps in labor force participation of around 4.6 percentage points (Table 2, columns 9 and 10).

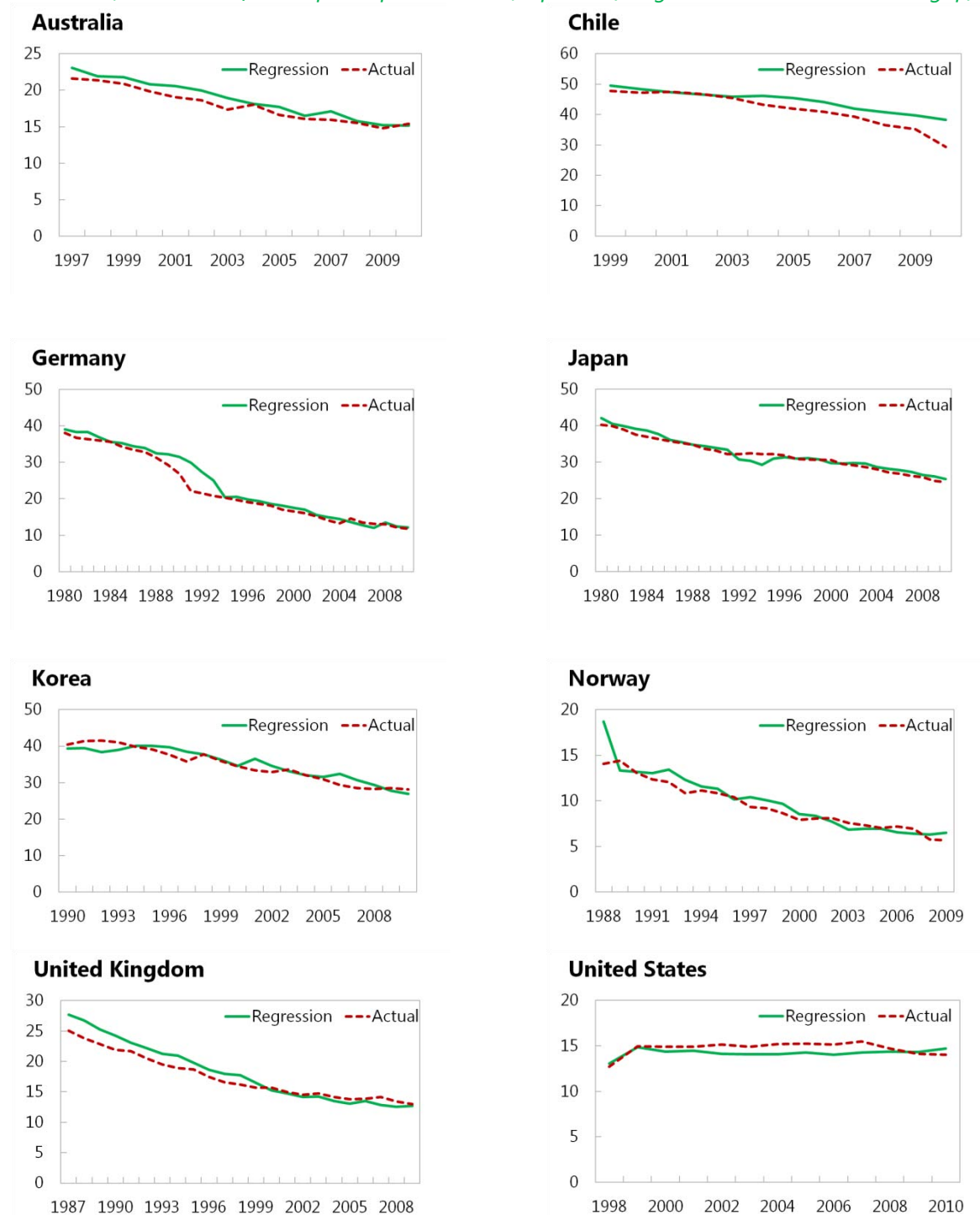
**Table 1. Labor Force Participation Gaps and Legal Restrictions—OECD Country Sample***(Gap defined as male minus female labor force participation, in percent)<sup>1</sup>*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Children <sup>2</sup>	9.287***	5.218*	4.395	3.758	4.993*	3.825	4.769*	3.758	3.758	3.758
	(3.37)	(1.79)	(1.53)	(1.32)	(1.71)	(1.33)	(1.66)	(1.32)	(1.32)	(1.32)
Education	-7.094**	-6.141*	-6.990*	-7.128**	-6.286*	-7.074**	-6.712*	-7.128**	-7.128**	-7.128**
	(-2.03)	(-1.70)	(-1.95)	(-2.01)	(-1.75)	(-2.00)	(-1.88)	(-2.01)	(-2.01)	(-2.01)
Maternity leave		-1.133***	-1.123***	-1.098***	-1.143***	-1.120***	-1.116***	-1.098***	-1.098***	-1.098***
		(-4.01)	(-3.96)	(-3.84)	(-4.05)	(-3.94)	(-3.94)	(-3.84)	(-3.84)	(-3.84)
Unmarried, property rights			-3.105***							
			(-3.83)							
Married, property rights				-3.160***						
				(-6.19)						
Married, joint titling					-1.797*					
					(-1.85)					
Be head of household						-2.373***				
						(-3.75)				
Get job/pursue a profession							-2.313**			
							(-2.51)			
Open bank account								-3.160***		
								(-6.19)		
Sign contract									-3.160***	
									(-6.19)	
Initiate legal proceedings										-3.160***
										(-6.19)
Number of observations	574	484	484	484	484	484	484	484	484	484
Adj. R-squared	0.254	0.330	0.340	0.350	0.339	0.358	0.347	0.350	0.350	0.350

Note: \*, \*\*, and \*\*\* indicates significance at the 10, 5 and 1 percent level, respectively.

<sup>1</sup> Three-year seasonal differences were taken to make series stationary.<sup>2</sup> Log of children instrumented with its lag.

**Figure 8. Explaining Gender Gaps in Labor Force Participation: Results for OECD Sample**  
*(Male minus female participation rates (in percent), regression results and actual gap)*



Source: IMF staff estimates.

**Table 2. Labor Force Participation Gaps and Legal Restrictions—Emerging Market and Developing Country Sample***(Gap defined as male minus female labor force participation, in percent)<sup>1</sup>*

	(1)	(2)	(3)	(4)	(7)	(8)	(9)	(10)
Fertility <sup>2</sup>	1.494**	1.388**	1.362*	1.414**	1.391**	1.402**	1.502**	1.394**
	(2.12)	(1.96)	(1.93)	(2.00)	(1.97)	(1.99)	(2.13)	(1.97)
Education	-2.775***	-3.630***	-3.579***	-3.411***	-3.314***	-3.331***	-3.063***	-3.670***
	(-3.10)	(-3.86)	(-3.83)	(-3.73)	(-3.61)	(-3.62)	(-3.36)	(-3.93)
Married, property rights		-0.968*					0.176	
		(-1.72)					(0.35)	
Daughters, inheritance rights			-2.531***				-1.919**	-2.331***
			(-7.35)				(-2.35)	(-5.99)
Spouses, inheritance rights				-1.646**			-0.641	
				(-2.55)			(-0.75)	
Be head of household					-1.171**		-0.907**	-0.942*
					(-2.29)		(-2.04)	(-1.87)
Guaranteed equality						-1.260**	-1.299**	-1.297**
						(-2.12)	(-2.12)	(-2.15)
Number of Observations	1251	1262	1262	1269	1277	1277	1243	1261
Adj. R-squared	0.301	0.304	0.303	0.302	0.301	0.299	0.306	0.306

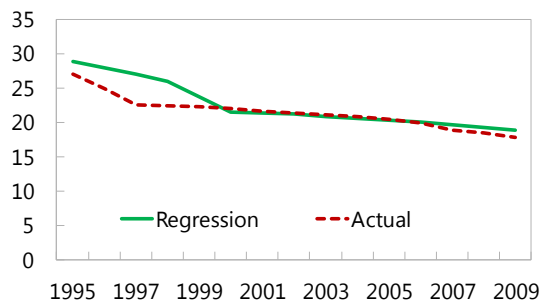
Note: \*, \*\*, and \*\*\* indicates significance at the 10, 5 and 1 percent level, respectively.

<sup>1</sup> Three-year seasonal differences were taken to make series stationary.<sup>2</sup> Log of fertility instrumented with its lag.

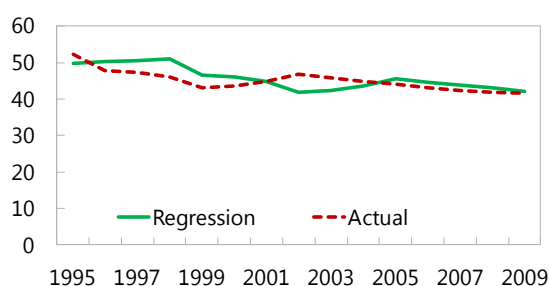
**Figure 9. Explaining Gender Gaps in Labor Force Participation: Results for Emerging Market and Developing Country Sample**

*(Male minus female participation rates, in percent, regression results and actual gap)*

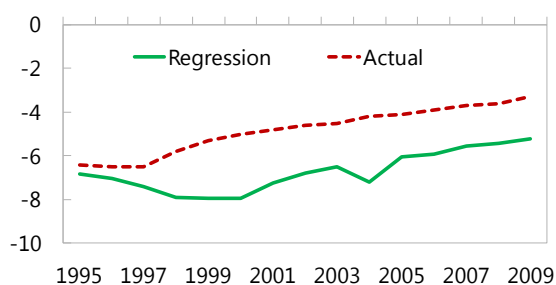
### Bolivia



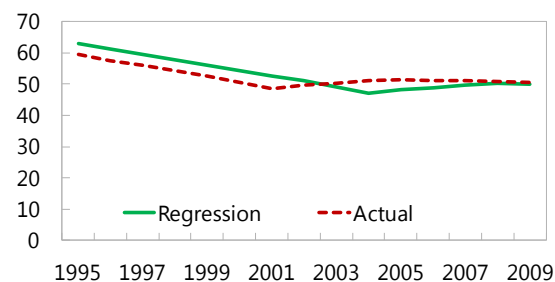
### Honduras



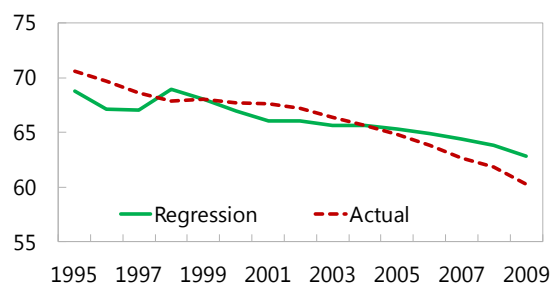
### Mozambique



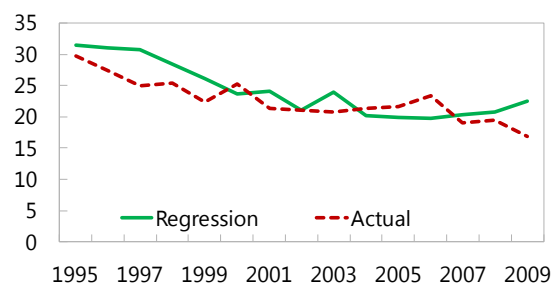
### Niger



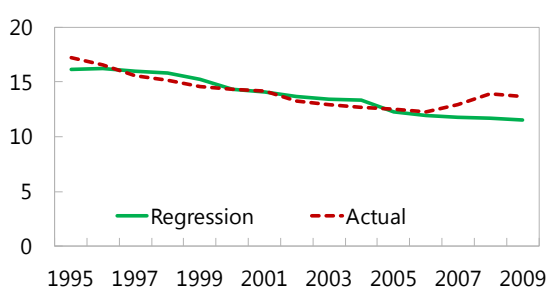
### Pakistan



### Peru



### Russia



### Tunisia



Source: IMF staff estimates.

## CONCLUSIONS AND POLICY RECOMMENDATIONS

**31. There has been progress in removing gender-based legal restrictions, but the playing field is far from level.** The ideal of equality in terms of economic opportunity remains elusive in some countries. A number of legal restrictions that impede female labor force participation continue to be in place, which in turn hampers productivity and sustainable and inclusive growth. Indeed, while more gender equity is in itself an important development goal, these restrictions impose additional economic inefficiencies, as they restrict access to productive resources and economic choice and prevent the efficient allocation of resources. This note has focused on economic restrictions, but there are other restrictions with serious social implications that should be addressed, such as the way laws treat violence against women.

**32. Policies should strive to eliminate the different types of remaining legal restrictions that prevent women from participating in the labor force.** Restrictions range from preventing women from opening bank accounts to discriminatory property rights. Among the various types of gender-related legal rights, constitutionally guaranteed equity between men and women should be the absolute minimum, as it may have an important catalytic effect on other reforms in terms of yielding benefits. To remove legal restrictions more broadly, countries should strive to guarantee legal equality to women in all dimensions. Liberalization of different legal restrictions may yield benefits over different time horizons. For example, granting the right to pursue a profession could yield relatively fast gains, while other reforms, such as inheritance rights, may work through indirect channels and affect other economic activity.

**33. This note does not take a normative stance on women's participation in the labor force, but advocates a level playing field.** Removing the obstacles preventing women from reaching their full economic participation would give them the option to become economically active should they so choose. Increasing female economic participation in turn would lead to higher growth and more favorable development outcomes. Nevertheless, it should be emphasized that the policy recommendations with respect to creating equal opportunity should be considered against the backdrop of countries' broadly accepted cultural and religious norms.

## Annex 1. Data Sources and Descriptions of Variables

### Dependent Variable

#### **Female Labor Force Participation (FLFP)**

##### *OECD Definition*

Percent of women ages 25-64 who are part of the labor force:

$$FLFP = \frac{Employed\ Women\ (25-54) + Unemployed\ Women(25-54)}{Population\ (25-54)}.$$

##### *World Bank Definition*

The labor force participation rate is the proportion of the population ages 15 and older that is economically active, that is, all people who supply labor for the production of goods and services during a specified period.

##### *Sources*

OECD Database on Labor Force Statistics

World Development Indicators (Original source: International Labor Organization)

##### *Time Period*

OECD: 1960–2012

World Bank: 1990–2012

#### **Labor Gap (DLP)**

##### *Definition*

Difference between male and female labor force participation:

$$Labor\ Gap\ (DLP) = MLFP - FLFP.$$

### Demographic Variables

#### **Number of Children per Woman (OECD) and Fertility Rate (World Bank)**

##### *OECD Definition*

Number of children (total population 0-14) per woman (total female population 15-64):

$$Children = \frac{Child\ population\ (Total\ population\ 0-14)}{Female\ Population\ (Total\ female\ population\ 15-64)}.$$



*World Bank Definition*

Total fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates.

*Sources*

OECD Database on Labor Force Statistics

World Development Indicators (Original source: United Nations)

*Time Period*

OECD and World Bank: 1960–2012

**Female Education***Definition*

Female education represents the average years of education attained by females over age 25. The Barro-Lee (2014) dataset provides improved data disaggregated by sex and by five-year age intervals. It provides educational attainment data for 146 countries in five-year intervals from 1950 to 2010.

*Source*

Barro and Lee (2014) Educational Attainment Dataset.

*Time Period*

1950–2010

Note that data were only available in five-year intervals (for example, 1950, 1955, 1960, etc.). Interpolation was used to obtain data for the years in between.

**Policy Variables****Maternity Leave***Definition*

Number of weeks for which a pregnant woman is entitled to leave work before and after childbirth regardless of income support.

*Source*

OECD Family Database

*Time Period*

1970–2011

**Legal Variables****Countries**

Algeria, Angola, Argentina, Australia, Austria, Bangladesh, Belarus, Belgium, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cambodia, Cameroon, Central African Rep., Chile, China, Colombia, Congo, Dem. Rep., Costa Rica, Côte d'Ivoire, Dominican Republic, Egypt, Arab Rep., Ethiopia, Fiji, France, Gabon, Georgia, Germany, Ghana, Guatemala, Honduras, Hungary, India, Indonesia, Iran, Islamic Rep., Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea, Rep., Kyrgyz Republic, Lao PDR, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mexico, Mongolia, Morocco, Mozambique, Namibia, Nepal, Netherlands, Nicaragua, Niger, Nigeria, Norway, Pakistan, Papua New Guinea, Paraguay, Peru, Philippines, Portugal, Russian Federation, Rwanda, Senegal, Sierra Leone, Singapore, South Africa, Spain, Sri Lanka, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Tanzania, Thailand, Togo, Tunisia, Turkey, Uganda, Ukraine, United Kingdom, United States, Uzbekistan, Venezuela, R.B., Vietnam, Yemen, Rep., Zambia, Zimbabwe

*Time Period*

1960–2010

*Source*

World Bank Women, Business and the Law Database

**Variables**

See Box 2 in the main text.

**Methodology for the 50 Years of Women's Legal Rights Database**

See: World Bank/International Finance Corporation (2013),

<http://wbl.worldbank.org/methodology/historical-data-methodology>

## Annex 2. Econometric Methodology

For a set of OECD countries and a wider global sample, including advanced countries, emerging markets, and developing countries, the panel regressions are estimated as follows:

$$Gap_{it} = \alpha + \beta \cdot Demographics_{it} + \gamma \cdot Education_{it} + \delta \cdot Policy_{it} + \varphi \cdot Legal_{it} + FE_i + \epsilon_{it},$$

where  $Gap_{it}$  refers to the male labor force participation rate minus the corresponding rate for females in country  $i$  at time  $t$ .  $Demographics_{it}$  includes the fertility rate, and the number of children are instrumented with lags of itself to mitigate endogeneity.  $Education_{it}$  refers to years of schooling from the Barro-Lee database.  $Policy_{it}$  refers to the number of weeks of maternity leave provided.  $Legal_{it}$  includes the various legal restrictions contained in the WBL database, as described in the paper.

For the OECD and global sample, country fixed effects are included in the regressions. Country fixed effects control for country-specific drivers of gender labor force participation gaps that are not explicitly controlled for in the regressions and if omitted could lead to misleading results. The Hausman test indicates that a fixed effects model is appropriate for both sets of panel regressions.

As the labor force participation series appear to exhibit a time trend, tests for panel unit roots are carried out and show that labor force participation for both males and females are integrated of the order 1. Differencing male and female labor force participation series results in a  $I(0)$  or stationary series. We also difference other nonstationary variables including fertility and education.

We test for whether time dummy variables need to be included to control for the time trends. In the  $F$  test, we fail to reject the null that the coefficients for all years are jointly equal to zero, and therefore no time fixed effects are required.

We also conduct a number of robustness checks in which we run regressions with a number of different specifications: (1) including GDP per capita as a control variable; (2) including lags of WBL variables, since the effects of legal changes could take time to reflect in labor force participation; (3) using female labor force participation instead of the gap as the dependent variable; (4) including a number of other variables such as childcare spending, wage gap, maternity leave, family allowance, tax wedge, and part-time employment as controls for the OECD sample; (5) including health and education spending as controls for policy variables in the emerging market and developing country sample; and (6) using the birth rate instead of fertility rate. While some variables from the baseline regression were not significant in some of the alternative specifications, a number of the WBL variables were always significant, indicating that the results are robust to changes in econometric specification.

We also used policy variables as explanatory variables in the regression. However, in the case for the OECD sample not enough variability in the data remains after the inclusion of these variables

due to a reduced sample size, and there is insufficient data covering family policies for emerging markets and low-income countries.

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