

LEONARDO GASPARINI

Centro de Estudios Distributivos,  
Laborales y Sociales (CEDLAS),  
Facultad de Ciencias Económicas,  
Universidad Nacional de La Plata, and CONICET

MARIANA MARCHIONNI

Centro de Estudios Distributivos,  
Laborales y Sociales (CEDLAS),  
Facultad de Ciencias Económicas,  
Universidad Nacional de La Plata, and CONICET

## Deceleration in Female Labor Force Participation in Latin America

**ABSTRACT** After half a century of sustained growth, female labor force participation has decelerated in Latin America, especially among married vulnerable women. Based on a large database of microdata from household surveys, this paper documents this recent deceleration and provides evidence on the determinants. We argue that the fast economic growth experienced by the region in the 2000s was an important driving force: lower unemployment and higher earnings of male partners plus increased social assistance may have reduced the pressing need for vulnerable women to take low-quality jobs.

*JEL Codes:* J2, J1

*Keywords:* Female labor force participation, Latin America, poverty, inequality

**T**he strong increase in female labor force participation (LFP) is arguably among the most salient socioeconomic changes in Latin America in the last half-century. This fact not only implies a profound transformation in the daily life of millions of Latin American women and families, but also has

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1. Gasparini and Marchionni (2015).

substantial economywide labor and social consequences. Poverty, inequality, unemployment, and education—just to mention a few social issues—are all affected by a more intense entry of women into the workforce. Although remarkable, this long-run pattern of female gains has not been enough to close the gender gap. Gender equality in the labor market remains a difficult challenge in the region.

This paper explores a change in the trend of female labor force participation that makes the situation potentially more worrisome: after around half a century of sustained growth, there are clear signs of a widespread and significant deceleration in the entry of women into the Latin American labor markets. That deceleration took place even when the typical factors that account for the long-run increase in female LFP, such as innovations or expansions in health, home, and work technologies and some cultural changes, continued operating.<sup>2</sup> The deceleration appears to have begun in the early 2000s, and it applies to all groups of women, but particularly to those who are married and in more vulnerable households.<sup>3</sup> Therefore, the slower entry of women into the workforce has delayed the closing of the gap in labor participation not only between men and women, but also between vulnerable women and the rest.<sup>4</sup> Although a similar pattern has emerged in other regions of the world, such as the United States since the 1990s, some Nordic economies, and some East and South Asian countries, the stagnation in female labor force participation is not a general phenomenon among developed or developing economies, which suggests that the recent deceleration observed in Latin America has regional origins that need to be explored.<sup>5</sup>

This paper makes two contributions to the literature on gender and labor participation in Latin America.<sup>6</sup> First, we provide careful evidence on female LFP based on microdata from a large set of national household surveys. In particular, the paper unveils a potentially interesting fact, which has not yet been sufficiently highlighted: after several decades of steep and uninterrupted increase, the pace of growth in female labor force participation slowed substantially in the 2000s. We believe this changing scenario should be placed

2. Busso and Romero Fonseca (2015).

3. We do not distinguish between women who are legally married and women who cohabit with a partner in consensual unions; for simplicity, we include both groups in the married category.

4. It also hinders the fulfillment of the gender-equality Millennium Development Goals (MDGs) related to female employment.

5. On the United States, see Blau and Kahn (2013) and Goldin (2014).

6. See, for example, Amador, Bernal, and Peña (2013); Chioda (2011); Elias and Ñopo (2010); Piras (2004); and Cord, Lucchetti, and Rodríguez-Castelán (2012).

high in the research agenda, jointly with the traditional inquiry on the causes of the long-run increase in female participation.

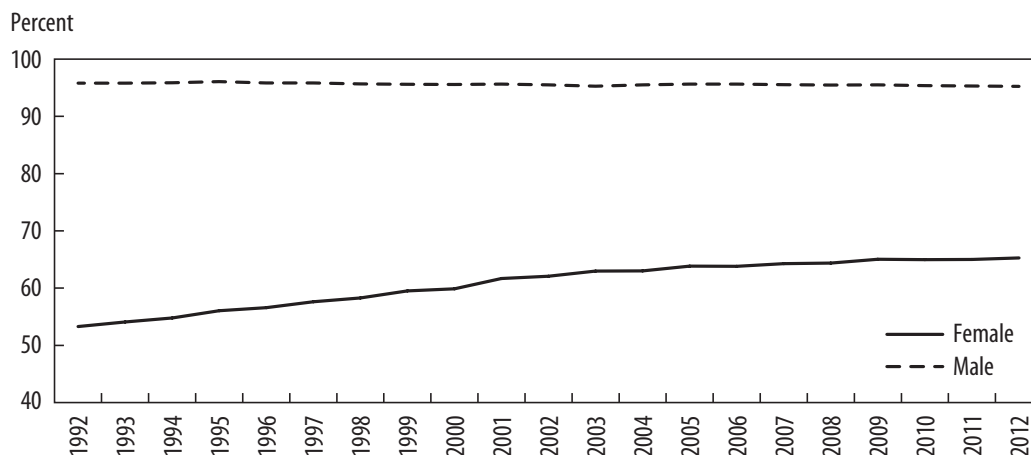
Second, the paper delves into various alternative hypotheses on the contrast between the rapid growth in female labor force participation in the 1990s and the deceleration in the 2000s. Identifying causal relationships for complex socioeconomic variables in a large geographic region is extremely difficult. The evidence shown in this paper is not conclusive, and it admits of alternative explanations. Our preferred interpretation of the existing body of evidence is that the fast economic growth experienced by the region in the 2000s was an important—although not the only—determinant of the deceleration in female LFP. Lower unemployment and higher wages of other income earners in the household (mostly male partners), plus increased social assistance, may have reduced the pressing need for vulnerable women to take low-quality jobs.

The rest of the paper is organized as follows. In the next section, we briefly describe the data and present the basic evidence of deceleration in female labor force participation in Latin America. We then estimate the contribution of changes in the distribution of different variables to the observed changes in female LFP based on decomposition exercises. Subsequently, we argue that the hypothesis that the deceleration is the result of female LFP approaching a ceiling is not very plausible, and we present our preferred hypothesis linking the deceleration to the fast economic growth experienced by the region in the 2000s. To deepen that argument, we explore the movements of female LFP along the business cycle. The paper closes with some concluding remarks.

## **The Deceleration in Female Labor Force Participation**

There are two main types of data sources that are useful for studying labor force participation: household surveys and censuses. This paper is based on the former, given that survey data allow a closer monitoring of developments in the labor market, since information is collected on a yearly basis and not every ten years as in censuses.<sup>7</sup> In particular, we process microdata from a large database of national household surveys: namely, the Socioeconomic Database for Latin America and the Caribbean (SEDLAC), a project jointly developed by the Center for Distributive, Labor and Social Studies (CEDLAS) at the National University of La Plata, Argentina, and the Latin America and

7. For a methodological discussion of this and other topics, see our companion book (Gasparini and Marchionni, 2015).

**FIGURE 1. Female and Male Labor Force Participation: Latin America, 1992–2012<sup>a</sup>**

Source: Authors' calculations, based on microdata from national household surveys.

a. Adults aged twenty-five to fifty-four years. Unweighted means for Latin American countries.

the Caribbean Poverty Gender and Equity Group (LCSPP) of the World Bank. We focus the analysis on unweighted averages across all Latin American countries, and we restrict the sample to people aged twenty-five to fifty-four years.<sup>8</sup> The study covers the period from 1992 to 2012. That period is naturally divided into two decades: 1992–2002 and 2002–12. While the division is arbitrary, it captures changes in some fundamental socioeconomic variables: in the early 2000s, most Latin American economies entered a phase of strong economic growth with falling poverty and inequality, while their governments intensified social and labor policies. For simplicity, we refer to 1992–2002 as the 1990s and 2002–12 as the 2000s.

The strong increase in female LFP is arguably one of the central stylized facts that describes the dynamics of the Latin American labor markets in the second half of the twentieth century.<sup>9</sup> The process of increasing female labor force participation continued at high speed throughout the 1990s, at a rate of 0.9 percentage points a year, but it slowed substantially in the 2000s, down to 0.3 percentage points a year (figure 1). In contrast, the participation rate

8. To process microdata within each country, we weight the data using the sample weights that correspond to each national survey. However, we do not use population weights when we compute averages across countries, to prevent our assessment from being strongly affected by highly populated countries, such as Brazil and Mexico, while almost ignoring less-populated nations. Table A1 in the appendix summarizes information about the national surveys used in this study. For more details on the data, see CEDLAS and World Bank (2015).

9. Chioda and Demombynes (2010); Chioda (2011).

of prime-age males remained above 95 percent, with no significant changes over the period.

The deceleration in female LFP has taken place in all groups, but it is particularly noticeable among married and vulnerable women, that is, women with low levels of education, living in rural areas, with children, and married to low-earnings partners (figure 2). For example, in the 1990s, the participation rate increased 0.8 points a year for women with low education (without a high school degree) and 0.24 points for those with tertiary education, whereas in the 2000s the rates were 0.17 and 0.13 points a year, respectively. The contrast between decades is also noticeable across quintiles of the spouses' income distribution (panel D in figure 2). For women in the first (poorest) quintile, the participation rate grew by 14 percentage points in the 1990s but only 1 percentage point in the following decade. The difference between decades was less marked—but still noticeable—for women in the fifth (richest) quintile, whose participation rate grew 10 and 2 percentage points in the 1990s and 2000s, respectively.

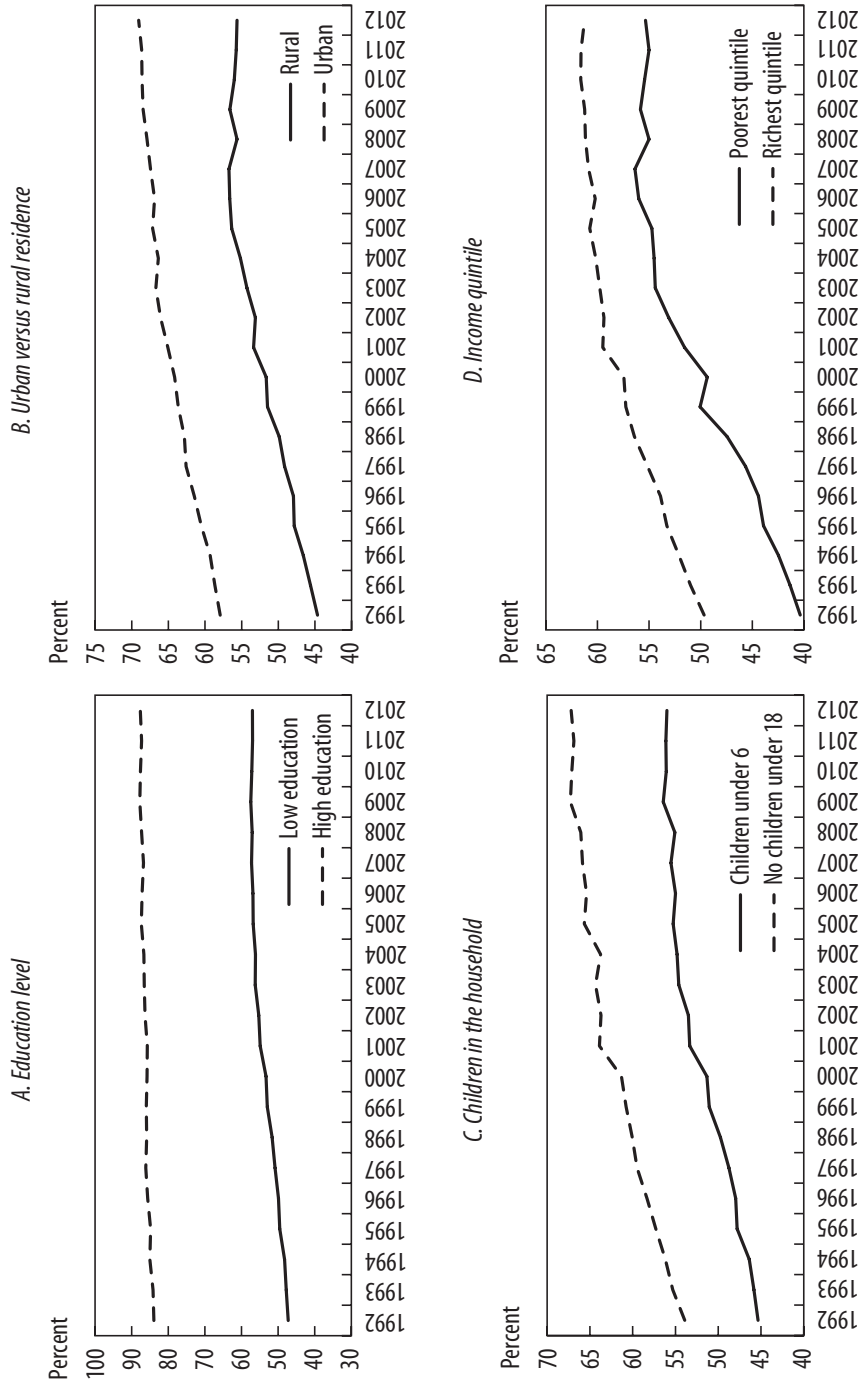
As in other regions of the world, the increase in female LFP in Latin America was especially marked among married women. The participation rate among single women was already high in the early 1990s and it increased at lower rates. For both groups the rapid increase came to a halt in the early 2000s; that trend is particularly evident among the married, since it contrasts with the dramatic growth in the previous decade (figure 3).

Regarding other labor variables, changes in hours of work for female workers were not large, not very different between decades, and not significantly different from those of men. Likewise, changes in unemployment seem to have been small and with no significant gender differences. These patterns reinforce the claim that the dynamics of labor force participation are among the most noticeable labor phenomena with a clear gender dimension over the last decades.<sup>10</sup>

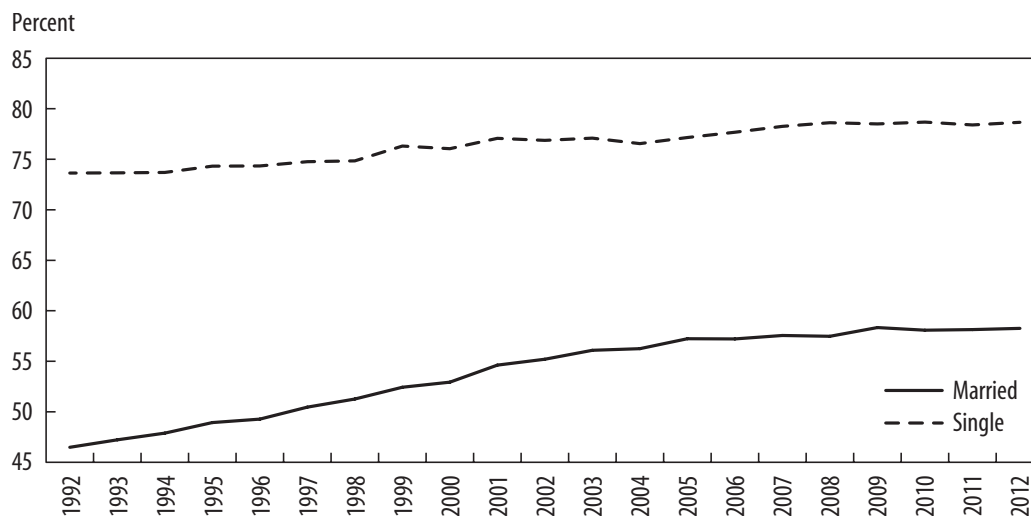
In the following sections we carry out a preliminary examination of the factors that could be behind the deceleration in female participation. We start with a typical within-between decomposition.

10. The dynamics of the so-called *nini* phenomenon (that is, people who are neither working nor studying, from the Spanish *ni estudia ni trabaja*) also has a clear gender dimension. The share of female *ninis* dropped over the period of analysis, while the share of male *ninis* increased marginally (de Hoyos, Rogers, and Székely, 2016). Although the decreasing trend characterizes both decades, the share of female *ninis* decreased faster in the 1990s than in the 2000s. For women aged twenty-five to fifty-four, the share of *ninis* decreased at a rate of 0.9 percentage points a year in the 1990s, but only 0.5 percentage points a year in the 2000s, which is consistent with the deceleration in female LFP in the latter decade.

**FIGURE 2. Female Labor Force Participation by Group: Latin America, 1992–2012<sup>a</sup>**



Source: Authors' calculations, based on microdata from national household surveys.  
 a. Women aged twenty-five to fifty-four years. Unweighted means for Latin American countries. Education: low is less than complete secondary; high is complete tertiary. Income quintile: from the spouses' income distribution (national quintiles of individual income).

**FIGURE 3. Female Labor Force Participation by Marital Status: Latin America, 1992–2012<sup>a</sup>**


Source: Authors' calculations, based on microdata from national household surveys.

a. Women aged twenty-five to fifty-four years. Unweighted means for Latin American countries. Married: includes formal and consensual unions.

## Decompositions

To assess the impact of changes in the distribution of some variables on the aggregate female LFP rate, we implement a decomposition in which the population of potential female workers is partitioned based on some covariate of labor participation, such as education levels. The change in the aggregate female participation rate over time could be decomposed into two terms: a weighted average of the changes in LFP within groups—the *within* effect—and a weighted average of the changes in the share of women in each group—the *composition* effect.<sup>11</sup> Analytically,

$$\Delta P_t = \underbrace{\sum_k \bar{w}_k \Delta P_k}_{\text{Within}} + \underbrace{\sum_k \bar{P}_k \Delta w_k}_{\text{Composition}},$$

where  $P$  is the overall rate of female labor force participation,  $P_k$  is the participation rate for group  $k$ ,  $w_k$  is the fraction of women in group  $k$ ,  $\Delta$  stands for changes between time  $t$  and  $t + 1$ ,  $\bar{w}_k = (w_{kt} + w_{kt+1})/2$ , and  $\bar{P}_k = (P_{kt} + P_{kt+1})/2$ .

11. See, for example, Elias and Ñopo (2010) and Amador, Bernal, and Peña (2013), for an implementation of this decomposition.

**TABLE 1. Decomposition of Changes in Female Labor Force Participation: Latin America, 1992–2012<sup>a</sup>**

<i>Explanatory variable</i>	<i>Period</i>		
	<i>1992–2002</i>	<i>2002–12</i>	<i>1992–2012</i>
<i>Education</i>			
Difference	9.1	3.6	12.7
Within effect	6.6	0.9	7.4
Composition effect	2.5	2.7	5.3
<i>Age</i>			
Difference	8.9	3.5	12.4
Within effect	9.0	3.7	12.7
Composition effect	–0.1	–0.1	–0.3
<i>Marital status</i>			
Difference	8.5	4.3	11.2
Within effect	8.1	3.5	9.7
Composition effect	0.4	0.8	1.5
<i>Children</i>			
Difference	10.0	3.7	13.7
Within effect	9.5	3.0	12.6
Composition effect	0.5	0.7	1.1
<i>Area</i>			
Difference	7.7	3.9	11.6
Within effect	7.2	3.8	10.9
Composition effect	0.5	0.1	0.7

Source: Authors' calculations, based on microdata from national household surveys.

a. Women aged twenty-five to fifty-four years. Unweighted means for Latin American countries.

If changes in the distribution of the variable used to define the groups are the main drivers of changes in LFP, the second term will be relatively large. Consider the case of education. If more women have access to higher education levels, which are linked to higher labor participation rates, then the process of education expansion could be the main driver of the global increase in female LFP. As shown in table 1, female LFP increased 9.1 points in the 1990s. The within effect accounts for 6.6 points, meaning that if no changes in education had occurred in that decade female LFP would have nonetheless increased by that amount.<sup>12</sup> The composition effect implies that if the

12. Besides changes in the propensity to participate in the labor market, the within effect may also be driven by changes in the composition of groups in terms of unobserved characteristics, which may be playing a role in the differential patterns observed in the first versus the second period under analysis. Unfortunately, we cannot test this hypothesis with the available data, nor do we have anecdotal evidence of changes in this direction.



propensity to participate in the labor market had not changed within groups over the decade, female LFP would have nonetheless increased 2.5 percentage points due to a more educated composition of the female population.<sup>13</sup>

The results in table 1 suggest that changes in education, marriage, fertility, and location all favored a more intense labor market involvement of women.<sup>14</sup> Today, women are more educated, have fewer children, and are more likely to remain single than two decades ago. In this scenario, even with the same conditional propensity to participate in the labor market, the overall female LFP rate should increase. The contribution of these factors to the observed increase in female LFP in the 1990s was significant but not dominant. In the 2000s, however, their role seems to have been decisive: without the changes in the structure of the female population—in particular, in terms of education—the deceleration in the growth of female LFP documented in the previous section would have probably been more marked.

Using similar decompositions, we also find evidence in our earlier work that changes in the structure of employment toward more women-friendly tasks may also have contributed to increasing labor force participation.<sup>15</sup> At the same time, changes in the sectoral structure of the economy may have operated in the opposite direction, contributing to the observed deceleration in female LFP. That impact was probably rather small, however, leaving the phenomenon of strong deceleration largely unexplained.

Busso and Romero Fonseca combine a meta-analysis with a multivariate regression framework, based on a panel data set of Latin American countries, to study trends in factors that have been typically singled out as key determinants of female LFP, such as contraceptive methods, household appliances, and telework.<sup>16</sup> They find that changes in these factors could not account for

13. A word of caution about the interpretation of these results. The decomposition suggests that for some autonomous reason, there was an expansion in education in Latin America, and a more educated pool of women almost mechanically implied higher LFP. In this light, the results of the decompositions indicate, for instance, that the policies that were successful in fostering labor participation in the 2000s were mainly the education policies that allowed the expansion of schooling in the previous decades. Of course, the real world could be more complicated. For example, the government may have previously encouraged employment in a sector that requires skilled labor intensively, and the increased demand stimulated women to finish high school or college to get a job in that sector. In this case, the sector/employment policy is triggering the reaction in the rest of the variables. In stressing the results of the decompositions, we implicitly assume that these more complicated channels are of second-order importance, which we believe is not a strong assumption, at least for education.

14. Beccaria, Maurizio, and Vázquez (2015) find similar results for Argentina.

15. Gasparini and Marchionni (2015).

16. Busso and Romero Fonseca (2015).

the recent deceleration in female LFP.<sup>17</sup> They conclude that while innovations or expansions in health, home, and work technologies, together with some cultural changes, seem important to account for the long-run increase in female LFP in Latin America, these factors cannot explain the recent deceleration. In fact, the deceleration took place even while several of those factors continued operating.

### **Approaching a Ceiling?**

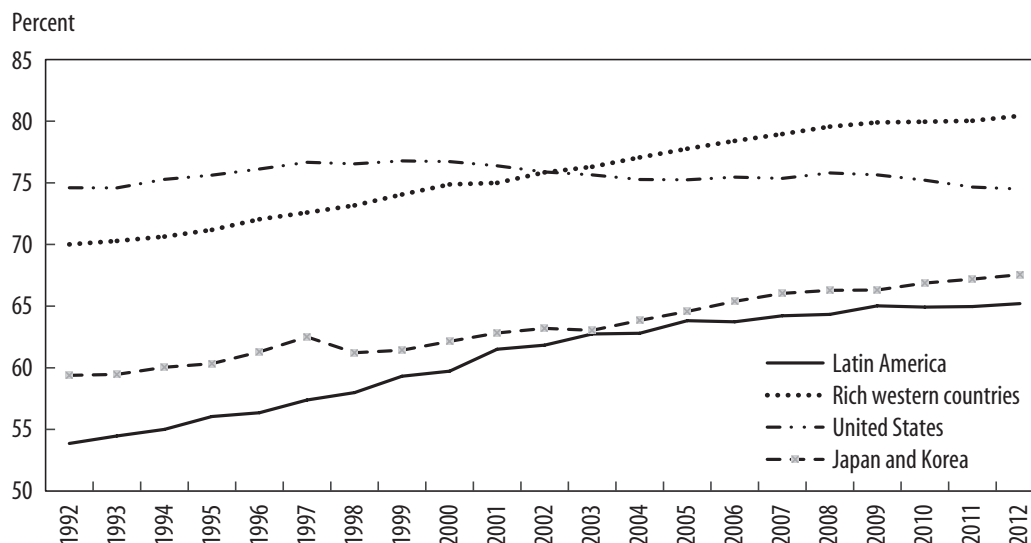
As any share, the rate of labor force participation has a ceiling. Of course, the only hard ceiling is 100 percent, but a host of reasons—including frictions, cultural factors, individual preferences, and economic factors—usually make full participation unattainable. In Latin America, as in most regions of the world, the rate for prime-age men seems to have reached its ceiling. The unweighted mean of the participation rate for males aged twenty-five to fifty-four across Latin American countries has been around 95.5 percent for at least the last two decades.

Female labor force participation rates are still far from those of men, despite the large increase over the last half-century. The mean rate for prime-age women in Latin America is around 65 percent, 30 points lower than that of their male counterparts. Yet the evidence suggests that, unlike previous decades, in the last years this gap is shrinking very slowly, and that female LFP is even reaching a plateau in some economies of the region. One possible explanation for this deceleration is that female participation is approaching a conditional ceiling: female LFP will not pass a certain level if certain cultural and policy factors do not change. In that sense, the women's ceiling is softer than the men's ceiling, but it still represents a barrier, since only cultural transformations or strong policy interventions can substantially alter its level. If this interpretation of the recent deceleration as a nearby ceiling is correct, and no major cultural or policy changes occur, then we should expect female LFP in Latin America to reach a plateau, and the wide gap with men to persist in the future.

A plateau in female participation emerged in the United States around the 1990s.<sup>18</sup> Goldin reports that participation rates for women of almost all ages,

17. See also Greenwood, Seshadri, and Yorukoglu (2005) for the role of home production; Albanesi and Olivetti (2016) for the effects of technological progress in health and nutrition; and Goldin and Katz (2002) for the impact of contraceptive methods.

18. Blau and Kahn (2013); Goldin (2014).

**FIGURE 4. Female Labor Force Participation by World Region, 1992–2012<sup>a</sup>**

Source: Authors' calculations for Latin America and OECD online employment database ([www.oecd.org/els/emp/onlineoecdemploymentdatabase.htm#unr](http://www.oecd.org/els/emp/onlineoecdemploymentdatabase.htm#unr)).

a. Women aged twenty-five to fifty-four years. Latin America and rich western countries: unweighted means.

education levels, and marital statuses have leveled off in the United States.<sup>19</sup> The LFP rate for women aged twenty-five to fifty-four grew slightly from 74.6 percent in 1992 to 75.9 percent in 2002 and then descended to 74.5 percent by 2012. Consequently, many analysts have suggested that the economy may have reached some sort of natural female participation rate. That could also apply to Latin America, although at a lower ceiling.

This stagnation in female labor force participation is not a widespread phenomenon among the developed economies, however, with the exception of the United States and some Nordic economies (Denmark, Finland, and Iceland). In the richest twenty western economies, the female LFP rate grew at 0.6 points a year in the 1990s and at 0.5 points a year in the following decade, rising from 70 percent in 1992 to 75.9 percent in 2002 and to 80.4 percent in 2012. Although there are some mild signs of deceleration, female labor force participation continues to grow at healthy rates in most developed economies.

Figure 4 shows the female labor force participation rates for women aged twenty-five to fifty-four for groups of developed OECD countries. The plateau is only visible for the United States, at a level ten points higher than the

19. Goldin (2006).

average Latin American rate.<sup>20</sup> The comparison of Latin America with Japan and Korea is interesting: the gap in female LFP tended to vanish over the 1990s, but grew again in the 2000s given the deceleration in Latin America and the stable growth rates in the two Asian countries.

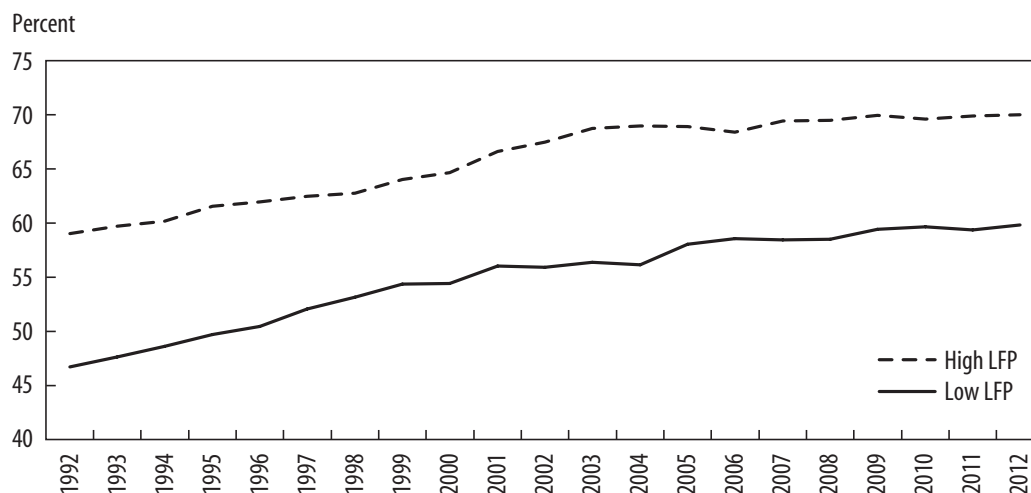
Data from the World Development Indicators reveal signs that female labor force participation has stagnated—or even decreased—in some East and South Asian countries, but not in Africa, the Middle East, Eastern Europe, and Central Asia, where rates in the 2000s were similar to or even higher than in previous decades. A similar assessment emerges from the EAPEP Database (ILO, 2011). Data from that source suggest that female LFP rates in Central America are among the lowest in the world, surpassing only the Islamic countries of Northern Africa and the Middle East, where the inclusion of women in the labor market is limited due mostly to cultural factors. On average, the participation of South American women is higher than in some areas of Africa and South Asia, but lower than in Europe, Eastern Asia, and most of non-Muslim Africa.

Unfortunately, it is impossible to tell whether the recent deceleration in female LFP in Latin America reflects a natural convergence to a ceiling. However, we consider it unlikely for several reasons. First, with a few exceptions, most developed and some developing countries have female LFP rates well above those in Latin America, and they are still increasing. It is difficult to believe that the natural rate in Latin America is substantially lower than in most of the world. If Latin America were indeed reaching a ceiling, the permanent gap with more developed countries, and even with other developing countries, would be large, growing, and difficult to explain. For instance, even though Spain and Portugal are culturally very close to Latin America, their female LFP rates (81.1 percent and 85.5 percent, respectively) are much higher than those in the region.<sup>21</sup>

Second, the deceleration occurred throughout Latin America, regardless of the initial level of female participation. If the deceleration reflected a pattern of convergence to a long-run level, we would expect that only countries with relatively high LFP levels would experience a reduction in the participation

20. The stagnation in the United States has been linked to weaker family-friendly policies, including parental leave and part-time work entitlements (Blau and Kahn, 2013).

21. Using data from the World Values Survey, Inglehart and Norris (2003) find that Latin American countries, Spain, and Portugal are in the same region of the cultural map of the world, based on the survival/self-expression dimension, which includes a wide range of beliefs and values. They find that “these values are strongly correlated with attitudes toward the role of women” (p. 156). Inglehart and Baker (2000) reach a similar conclusion.

**FIGURE 5. Female Labor Force Participation Rate: Latin America, 1992–2012<sup>a</sup>**

Source: Authors' calculations, based on microdata from national household surveys.

a. Women aged twenty-five to fifty-four years. Unweighted means by group of countries. High LFP: countries with female participation rate above the median (average 1992–95). Low LFP: countries with female participation rate below the median (average 1992–95).

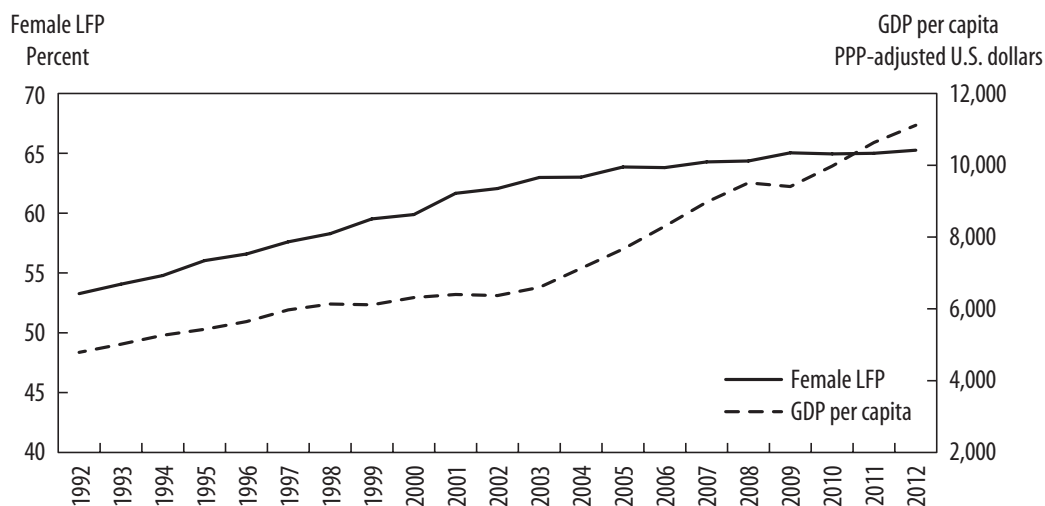
growth rate. However, as figure 5 documents, the deceleration also occurred in countries with a relatively low female LFP rate, which in principle have a longer way to go toward their equilibrium long-run level.

Finally, in most Latin American countries, the leveling-off pattern is more noticeable among vulnerable women, who are still far from the participation levels of their more educated, wealthier counterparts. Here again, the lower participation rate suggests that this group is farther from its long-run equilibrium and thus presumably far from approaching a ceiling.

## Participation and Economic Growth

We have documented the contrast between the last two decades in terms of female labor force participation. The contrast also applies to other economic variables, a fact that hinders the search for causal relationships. In this section, we focus on economic growth since female labor participation is particularly sensitive to the macroeconomic environment. Changes in economic conditions affect female LFP directly, but also indirectly through a strong interdependence with the employment status of other household members, particularly male spouses.

The (unweighted) mean value of per capita gross domestic product (GDP) in Latin America grew at 2.8 percent annually in the 1990s; the rate almost

**FIGURE 6. Female Labor Force Participation and per Capita GDP: Latin America, 1992–2012<sup>a</sup>**

Source: Authors' calculations, based on microdata from national household surveys. GDP per capita from World Development Indicators.  
a. Women aged twenty-five to fifty-four years. Unweighted means for Latin American countries.

doubled in the 2000s (5.7 percent). In particular, the economies in the region grew at the very fast rate of 8.0 percent between 2003 and 2008. The 2000s were a decade not only of higher growth, but also of more macroeconomic stability with more stable growth rates, low inflation, and absence of big crises, which were endemic to Latin America in the previous decades.

The deceleration in female LFP coincided with a strong rise in GDP growth rates (see figure 6).<sup>22</sup> Besides this temporal correlation, there are arguments to link the two patterns. The strong economic growth in the region in the 2000s allowed a surge in incomes that may have retarded the entry of women into the labor market. Without a more pressing need to look for a job, and given the higher earnings of their spouses or the cash transfers of new social programs, some women may have delayed their decision to participate in the labor market.

This argument could be viewed as a variant of the added-worker effect, which is typically invoked to account for the increase in female LFP during recessions.<sup>23</sup> As the main breadwinner becomes unemployed or faces a wage cut, secondary workers—typically female spouses—enter the workforce to compensate for the reduced household income, implying a countercyclical

22. The linear correlation coefficient between changes in female LFP and per capita GDP is  $-0.50$  and statistically significant.

23. See Katz (1961), Mincer (1962), Lundberg (1985), Maloney (1991), and Mattingly and Smith (2010).

pattern of female LFP. Conversely, female spouses may be less willing to join the workforce during a strong expansion, as the male breadwinner improves his job conditions and household real income increases. The adjustment in female behavior does not necessarily imply the extreme change of leaving a job, but rather could entail postponing the entry into the labor market. With a more favorable economic environment in their households, women may not be compelled to accept just any job, but rather may wait longer for better job matches or delay their labor market participation a few years in order to spend more time with their children or older adults requiring care.

The argument views the family as a decisionmaking unit and assumes that some women are secondary workers with a less-permanent attachment to the labor market than their partners, a situation that is more frequent among less-skilled women in the region. Under this framework, a married woman may choose to postpone her entry into the labor market, taking advantage of her husband's income gain. Since individual incomes are pooled within the family, an increase in one individual's income may result in other family members working less in the labor market, thereby gaining time to spend on other activities, such as childcare. For a countercyclical pattern to emerge, this income effect must outweigh the substitution effect: namely, that in a better economic scenario, workers—both men and women—face better opportunities, and they may be more attracted to the labor market as their earning power increases.<sup>24</sup>

A number of studies find evidence on the added-worker effect in Latin America. In Argentina, Cerruti finds that female LFP increased in the 1990s in response to rising instability and unemployment among male primary earners.<sup>25</sup> Also in Argentina, Paz finds a sizable impact of the husband's labor status (employed or unemployed) on the probability of his spouse entering the workforce, mostly in the informal sector.<sup>26</sup> Similar results are found by Fernandes and Felício for Brazil and by Parker and Skoufias for Mexico.<sup>27</sup>

This channel is likely to be more relevant for women in vulnerable households. Unskilled poor women with children are more likely to act as secondary

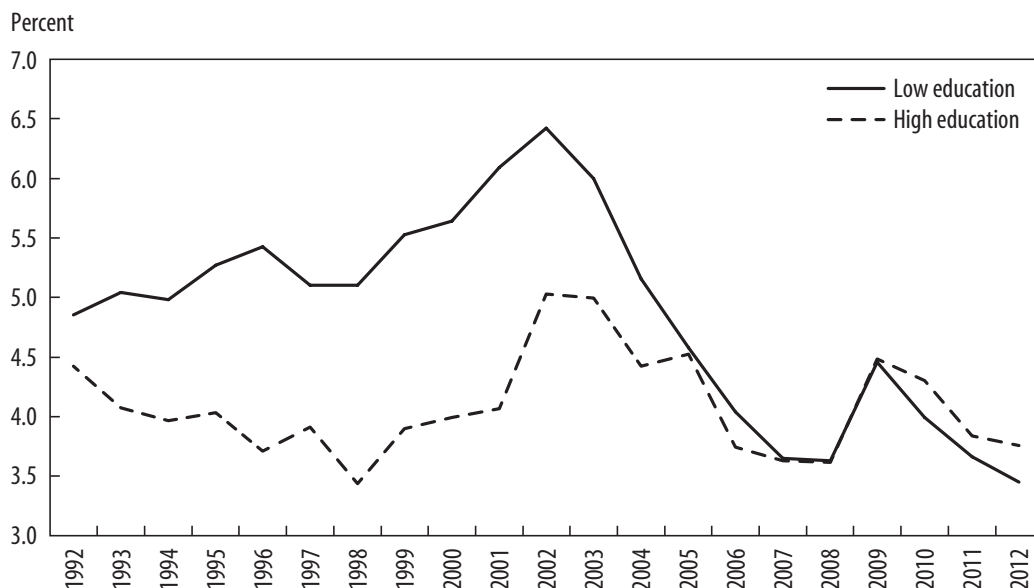
24. For a countercyclical pattern to show in the data, the income effect must also outweigh the effect of other driving factors of LFP that could be positively correlated with economic growth. For instance, a large literature finds that the fast increase in female LFP in western Europe and the United States after World War II was mainly due to technological and cultural changes that were much stronger than the (negative) added-worker effect coming from the high postwar economic growth rates (Fernández, 2013; Goldin, 2014; Greenwood, Seshadri, and Yorukoglu, 2005; Olivetti, 2013).

25. Cerruti (2000).

26. Paz (2009).

27. Fernandes and Felício (2005); Parker and Skoufias (2004).



**FIGURE 7. Unemployment Rates for Men: Latin America, 1992–2012<sup>a</sup>**

Source: Authors' calculations, based on microdata from national household surveys.

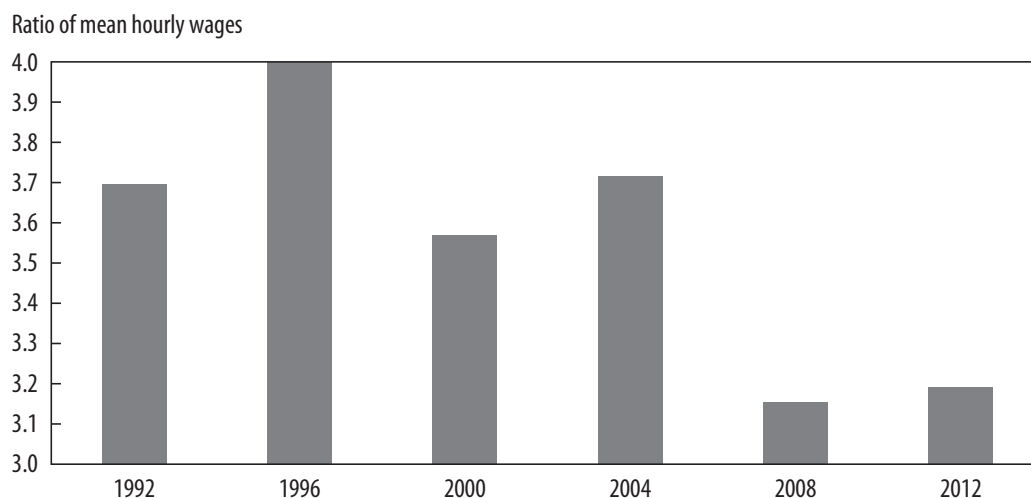
a. Men aged twenty-five to fifty-four years. Education: low is less than complete secondary; high is complete tertiary. Unweighted means for Latin American countries.

workers, with more sporadic and loose links with the labor market, and their labor behavior is thus more sensitive to economic conditions. In addition, these are the women whose households benefited more from the improved economic scenario of the 2000s through three channels: a reduction in unemployment, a relatively large increase in labor income, and an increase in non-labor incomes.

Figure 7 illustrates the first channel by showing unemployment rates for prime-age men, that is, the likely husbands of prime-age women. While unemployment rates fluctuated somewhat for skilled men in the 2000s, they plunged for the unskilled. On average, the unskilled unemployment rate descended from 6.5 percent in 2002 to 3.5 percent in 2012. If female labor participation decisions are sensitive to the unemployment situation of the male spouse, figure 7 suggests a potentially relevant added-worker effect, particularly among unskilled women who are typically married to unskilled men.<sup>28</sup>

28. On the presence of positive assortative mating in Latin America, see Ganguli, Hausmann, and Viarengo (2014) and Torche (2010).



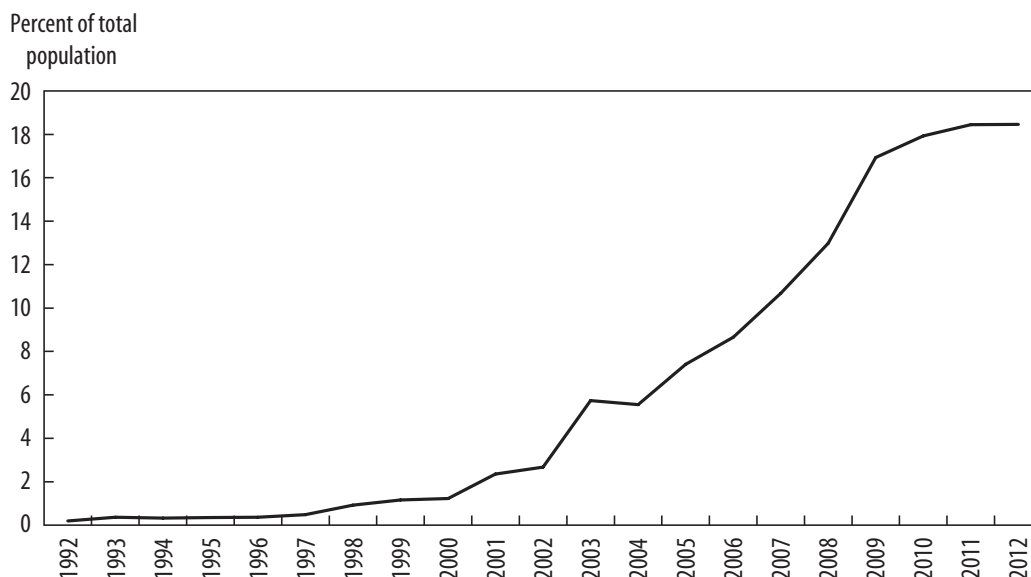
**FIGURE 8 . Hourly Wage Gap between Men with High and Low Education: Latin America, 1992–2012<sup>a</sup>**

Source: Authors' calculations, based on microdata from national household surveys.

a. Men aged twenty-five to fifty-four years. Education: low is less than complete secondary; high is complete tertiary. Unweighted means for Latin American countries.

Regarding the second channel, the economic expansion of the 2000s implied a generalized increase in real earnings. Interestingly, this increase was more intense among the unskilled. Figure 8 shows that the hourly wage gap between skilled and unskilled prime-age male workers substantially decreased in the 2000s. This suggests that not only did household incomes increase for women in more vulnerable households, but also that the increase was higher than for the nonpoor. Here again, the evidence points to a stronger added-worker effect for vulnerable women.

In addition to the improvements in the labor market, vulnerable households greatly benefitted from the sizable increase in social protection systems that took place in all Latin American countries in the 2000s—the third channel through which the added-worker effect operated. The strong economic growth of the 2000s improved the fiscal situation of the region's economies, which in turn led to a substantial expansion in social spending. In particular, since the implementation of *Progres*a in Mexico and *Bolsa Escola* in Brazil, conditional cash transfer programs have continued to expand in the region (figure 9). The programs consist of cash transfers to poor households, conditional on the households' making certain investments in their children's human capital—education, health, and nutrition. Cruces and Gasparini estimate that, on average, 78 percent of these transfers accrue to the bottom two quintiles

**FIGURE 9. Coverage of Conditional Cash Transfer Programs: Latin America, 1992–2012<sup>a</sup>**

Source: Authors' calculations, based on the noncontributory social protection programs database maintained by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), Social Development Division.

a. Unweighted means for Latin American countries.

of the income distribution.<sup>29</sup> In a sample of seven Latin American countries in 2014, the main cash transfer represented 33 percent of participants' total household income, on average, for households in the bottom quintile of the income distribution.<sup>30</sup> Cash transfer programs have been identified as an important factor driving the increase in real household income in more vulnerable households, and they are thus a significant determinant of the observed fall in income poverty and inequality in the region in the 2000s. Although they are typically the main pillar of the social protection system for the poor, conditional cash transfer programs are not the only policy instrument aimed at helping the most disadvantaged. Noncontributory pensions, for instance, expanded significantly in the region in the 2000s, adding another source of income for vulnerable households.<sup>31</sup>

29. Cruces and Gasparini (2012).

30. Own calculations based on national household surveys of Argentina, Bolivia, Ecuador, Peru, Mexico, Panama and Uruguay.

31. Bando, Galiani, and Gertler (2016).

The expansion of cash transfer programs in Latin America was accompanied by a profusion of impact evaluations. These studies mostly find negative but small effects on female labor supply. For instance, Mexico's Progresa program has no statistically significant effects on women's labor force participation or hours worked.<sup>32</sup> Nor are there any significant effects on the labor participation of women in Nicaragua's Red de Protección Social.<sup>33</sup> However, more recent evaluations do find negative effects on female labor supply in a number of countries.<sup>34</sup> As Busso and Romero Fonseca conclude from their meta-analysis, the cash transfer programs in Latin America probably did not cause a decrease in female LFP when the programs were launched, but the subsequent expansion seems to have contributed to halting the positive trend in female labor supply in recent years.<sup>35</sup>

In sum, the strong economic expansion that Latin America experienced in the 2000s had a more intense positive impact on the incomes of vulnerable households than nonvulnerable households, through several channels. The women in these households are precisely those more prone to alter their labor force participation decisions based on the family economic perspectives. It follows from this argument that we should observe a stronger deceleration in LFP for married, unskilled, more vulnerable women, a fact that is consistent with the evidence discussed in the first section. While this is far from conclusive evidence supporting the added-worker effect, it suggests that this factor may have played a relevant role in the recent deceleration of female LFP. The next section elaborates on this issue by exploring labor force participation along the economic cycle in a regression framework.

## Participation and the Economic Cycle

In this section we explore the movements of labor force participation over the business cycle within a simple econometric framework.<sup>36</sup> In particular, we build a panel of countries from 1992 to 2012 and run fixed-effects

32. Alzúa, Cruces, and Ripani (2013); Parker and Skoufias (2000); Skoufias and di Maro (2006).

33. Maluccio and Flores (2005).

34. Novella and others (2012) for Honduras; Fernández and Saldarriaga (2014) for Peru; Garganta, Gasparini, and Marchionni (2015) for Argentina.

35. Busso and Romero Fonseca (2015).

36. We are very grateful to Pablo Gluzmann for his active participation in this section.

**TABLE 2. Models of Labor Force Participation: Latin America, 1992–2012<sup>a</sup>**

Explanatory variable	Female		Male		Relative (male/female)	
	(1)	(2)	(3)	(4)	(5)	(6)
Log per capita GDP	20.8 (12.93)***		-1.3 (2.07)**		-0.663 (10.80)***	
Cyclical component of GDP		-23.9 (4.04)***		1.6 (1.07)		0.747 (4.32)***
Trend component of GDP		24.5 (16.23)***		-1.5 (2.29)**		-0.780 (12.79)***
Constant	-127.8 (8.73)***	-161.4 (11.76)***	107.0 (18.98)***	109.1 (18.03)***	7.628 (13.64)***	8.689 (15.66)***
No. observations	235	235	235	235	235	235
R-squared	0.89	0.91	0.72	0.73	0.83	0.86

\*\* Statistically significant at the 5 percent level.

\*\*\* Statistically significant at the 1 percent level.

a. Country fixed-effects estimations based on an unbalanced panel of seventeen countries (see footnote 37 for more details). Labor force participation is defined as the percentage of adults (women or men) aged twenty-five to fifty-four years who are employed or unemployed and actively seeking work. Robust *t* statistics are in parentheses.

regressions of female LFP and other labor variables.<sup>37</sup> As right-hand-side variables, we include the log of real per capita GDP (adjusted for purchasing power parity, PPP) taken from World Development Indicators (WDI) and, alternatively, a decomposition of GDP into two terms: a cyclical and a trend component. To divide GDP into components, we use the Hodrick–Prescott filter.<sup>38</sup>

The results from the regressions suggest that female labor supply is associated with the economic changes and that this link is much stronger than for men (table 2). In particular, both the trend and cyclical components of GDP have a highly significant effect on female participation, although with different signs (second column in table 2). The trend component of growth

37. The panel includes information for seventeen Latin American countries over the period 1992–2012. The specific countries and years are as follows: Bolivia (1993, 1997, 1999–2002, 2005, 2007–09, 2011); Brazil (1992, 1993, 1995–99, 2001–09, 2011, 2012); Chile (1992, 1994, 1996, 1998, 2000, 2003, 2006, 2009, 2011); Colombia (2001–05, 2008–12); Costa Rica (1992–2012); Dominican Republic (1996, 1997, 2000–12); Ecuador (1994, 1995, 1998, 1999, 2003–12); El Salvador (1995, 1996, 1998–2012); Guatemala (2000, 2006, 2011); Honduras (1992–98, 2001–11); Mexico (1992, 1994, 1996, 1998, 2000, 2002, 2004–06, 2008, 2010, 2012); Nicaragua (1993, 1998, 2001, 2005, 2009); Panama (1995, 1997–2012); Paraguay (1997, 1999, 2001–11); Peru (1997–2012); Uruguay (1992, 1995–98, 2000–12); and Venezuela (1992, 1995, 1997–2011).

38. See Hodrick and Prescott (1997).

is associated with an increase in female LFP: a 10 percent long-run expansion in GDP is associated with a 2.45-percentage-point increase in female labor supply, on average. In contrast, the short-term movements are counter-cyclical: a 10 percent short-run expansion in GDP is associated with a fall in female labor supply of about 2.39 percentage points.<sup>39</sup> This piece of evidence seems to support the hypothesis of the recent deceleration driven by the exceptional growth rates of the 2000s.<sup>40</sup>

Consequently, the male-female gender gap in labor force participation has a negative relationship with the trend in GDP, but a positive relationship with the cyclical component (sixth column in table 2). Along the development process, female labor force participation increases, narrowing the gender gap. However, short-term expansions are associated with a reduction in the entry of women into the workforce and hence a widening of the gender gap, possibly due to the reasons discussed in the previous section.

In table 3, we divide the sample by education level: men and women without a secondary degree; with a high school degree but without a college degree; and with a degree from a tertiary institution. We find that the negative cyclical component is larger and highly significant for women with fewer years of formal education (less than complete secondary school) and smaller for the rest. This difference is consistent with the discussion in the previous section, where less-skilled, vulnerable women are more prone to react to economic fluctuations. In particular, the sudden strong expansion of the Latin American economies in the 2000s may have been associated with a larger deceleration in the labor supply for this group of women.

## Concluding Remarks

In this paper, we present evidence for a significant deceleration in female labor force participation in the 2000s, breaking the marked increasing pattern that characterized the region for at least fifty years. Disentangling all

39. Employment is also related to GDP growth, for both men and women. The trend component is particularly strong for women, whereas the cyclical component is not significant. Unemployment increases when GDP falls; both the trend and cyclical components are significant for both genders.

40. Consistent with these findings, Busso and Romero Fonseca (2015) conclude that the effects of changes in macroeconomic conditions on female participation are likely explanations of the latter's cyclicity.

**TABLE 3. Models of Labor Force Participation by Education Group: Latin America, 1992–2012<sup>a</sup>**

<i>Education level and explanatory variable</i>	<i>Female</i>		<i>Male</i>		<i>Relative (male/female)</i>	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>A. Less than secondary school</i>						
Log per capita GDP	17.7 (10.38)***		−2.1 (3.18)***		−1.036 (10.13)***	
Cyclical component of GDP		−25.6 (3.91)***		2.3 (1.37)		1.009 (3.56)***
Trend component of GDP		21.2 (13.33)***		−2.4 (3.51)***		−1.206 (11.89)***
Constant	−106.3 (6.86)***	−138.9 (9.59)***	114.0 (19.21)***	117.3 (18.58)***	11.363 (12.20)***	12.901 (13.97)***
No. observations	235	235	235	235	235	235
R-squared	0.91	0.93	0.76	0.77	0.85	0.88
<i>B. Complete secondary school or incomplete college</i>						
Log per capita GDP	8.9 (4.80)***		−0.6 (0.86)		−0.251 (1.74)*	
Cyclical component of GDP		−13.9 (2.17)**		−0.5 (0.25)		0.032 (0.05)
Trend component of GDP		10.8 (5.56)***		−0.7 (0.80)		−0.274 (1.71)*
Constant	−11.5 (0.69)	−28.6 (1.63)	100.8 (14.73)***	100.9 (13.40)***	3.250 (2.46)**	3.463 (2.35)***
No. observations	235	235	235	235	235	235
R-squared	0.82	0.83	0.69	0.69	0.81	0.81
<i>C. Complete college</i>						
Log per capita GDP	7.1 (4.45)***		0.2 (0.28)		−0.354 (6.83)***	
Cyclical component of GDP		−9.0 (2.48)**		2.0 (1.05)		0.425 (3.17)***
Trend component of GDP		8.4 (4.68)***		0.1 (0.09)		−0.419 (7.78)***
Constant	22.1 (1.53)	10.1 (0.62)	95.0 (13.04)***	96.4 (12.11)***	4.726 (10.00)***	5.312 (10.84)***
No. observations	235	235	235	235	235	235
R-squared	0.74	0.75	0.46	0.46	0.82	0.84

\* Statistically significant at the 10 percent level.

\*\* Statistically significant at the 5 percent level.

\*\*\* Statistically significant at the 1 percent level.

a. Country fixed-effects estimations based on an unbalanced panel of seventeen countries (see footnote 37 for more details). Labor force participation is defined as the percentage of adults (women or men) aged twenty-five to fifty-four years who are employed or unemployed and actively seeking work. Robust *t* statistics are in parentheses.

the factors that may account for this pattern is not an easy task, since several potential driving factors were simultaneously at play during the period of study. Endogeneity issues and lack of data are among the serious obstacles for the empirical identification of the causal links between female participation and its covariates. Since a comprehensive general equilibrium assessment of all the driving factors is not feasible, this paper takes a more modest approach: we deploy several empirical strategies aimed at contributing with pieces of evidence to assess the relevance of different plausible factors behind the observed patterns in female labor supply. Although certainly imperfect and incomplete, we expect that this patchwork of evidence will shed some light on the processes that have shaped female participation in Latin America.

We first analyze whether the patterns in female LFP are mainly accounted for by changes in the distribution of some direct determinants of the labor supply decision or whether they are chiefly the consequence of some more profound transformation in behavior. The results of the decompositions suggest that changes in education, marriage, fertility, and location—that is, the composition effect—all favored a more intense labor market involvement of women. Without the observed educational and demographic changes in the female population, the deceleration in the growth of female participation in Latin America in the 2000s would have been even more marked.

There are several potential causes of the deceleration in the within-group component of the growth in female LFP. One possible cause of the slowdown is that participation levels are reaching a ceiling or a natural rate that is mainly determined by cultural factors. We argue in this paper that this possibility is unlikely, although certainly not implausible. The deceleration in female labor force participation could instead be a transient phenomenon. The strong economic growth in the region in the 2000s may have allowed a surge in earnings and social protection benefits that retarded the entry of women into the labor market. In fact, the evidence suggests that, on average, those that did decide to participate found better jobs than in the past. In that light, the deceleration in participation may not represent a setback, since it would be the optimal response to a positive economic scenario. If the Latin American economies continue growing, the availability of decent jobs will rise, and as women continue to achieve higher education levels, their labor force participation is likely to resume its pace of growth in the near future.

However, an alternative interpretation leads to more worrisome conclusions. The initial short-term impact of improved economic conditions and

more generous social programs on female labor supply may have undesirable long-term consequences. Women who prefer to stay out of the labor market under the new economic situation may be less prone to participate in the future, even in a scenario of a greater supply of decent jobs. Being out of the labor market for some time may imply loss of productivity, and it may also reinforce traditional gender roles in the household. These factors may cause a reduction in attachment to the labor force for women and, ultimately, reduce their possibilities for autonomous income generation in the longer term. This would significantly dampen the outlook for poverty and inequality reduction.<sup>41</sup>

41. In Gasparini and Marchionni (2015), we project poverty and inequality trends in the region under two alternative scenarios for female labor force participation. We conclude that if the observed deceleration of female participation in the 2000s is the beginning of a stage of low or even null growth in female labor supply, then the contribution of female participation to the reduction of poverty and inequality in the region would be negligible. This almost null effect contrasts with a significant, although small, poverty/inequality-reduction effect if the growth in female participation returns to the levels observed in the 1990s and in most of the twentieth century.



## Appendix: Data

TABLE A1. National Household Surveys Used in This Study

<i>Country</i>	<i>Name of survey</i>	<i>Acronym</i>	<i>Surveys used</i>
Argentina	Encuesta Permanente de Hogares	EPH	1992–2003
	Encuesta Permanente de Hogares Continua	EPH-C	2003–12
Bolivia	Encuesta Integrada de Hogares	EIH	1992, 1993
	Encuesta Nacional de Empleo	ENE	1997
	Encuesta Continua de Hogares	ECH	1999, 2000
	Encuesta de Hogares	EH	2001, 2002, 2005, 2007–09, 2011, 2012
Brazil	Pesquisa Nacional por Amostra de Domicilios	PNAD	1992, 1993, 1995–99, 2001–09, 2011, 2012
Chile	Encuesta de Caracterización Socioeconómica Nacional	CASEN	1992, 1994, 1996, 1998, 2000, 2003, 2006, 2009, 2011
Colombia	Encuesta Continua de Hogares	ECH	2001–05
	Gran Encuesta Integrada de Hogares	GEIH	2008–12
Costa Rica	Encuesta de Hogares de Propósitos Múltiples	EHPM	1992–2009
	Encuesta Nacional de Hogares	ENAHO	2010, 2012
Dominican Rep.	Encuesta Nacional de Fuerza de Trabajo	ENFT	2011
Ecuador	Encuesta de Condiciones de Vida	ECV	1994, 1995, 1998, 1999
	Encuesta Nacional de Empleo, Desempleo y Subempleo	ENEMDU	2003–12
El Salvador	Encuesta de Hogares de Propósitos Múltiples	EHPM	1995, 1996, 1998–2012
Guatemala	Encuesta Nacional sobre Condiciones de Vida	ENCOVI	2011
Honduras	Encuesta Permanente de Hogares de Propósitos Múltiples	EPHPM	1992–99, 2001–11
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares	ENIGH	1992, 1994, 1996, 1998, 2000, 2002, 2004–06, 2008, 2010, 2012
		EMNV	1993, 1998, 2001, 2005, 2009
Nicaragua	Encuesta Nacional de Hogares sobre Medición de Nivel de Vida	EMNV	1993, 1998, 2001, 2005, 2009
Panama	Encuesta de Hogares	EH	1995, 1997–2012
Paraguay	Encuesta Integrada de Hogares	EIH	1997, 2001
	Encuesta Permanente de Hogares	EPH	1999, 2002–11
Peru	Encuesta Nacional de Hogares	ENAHO	1997–2012
Uruguay	Encuesta Continua de Hogares	ECH	1992, 1995–98, 2000–12
Venezuela	Encuesta de Hogares Por Muestreo	EHM	1992, 1995, 1997–2012

Source: Authors' elaboration.

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