



# WHY TIME DEFICITS MATTER: EXECUTIVE SUMMARY

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July 2012



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# Why Time Deficits Matter: Implications for the Measurement of Poverty

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## Executive Summary

This report presents findings from a research project undertaken by the *Gender Equality and the Economy* and the *Distribution of Income and Wealth* programmes of the Levy Economics Institute. Our objective is to propose an alternative to official income poverty measures that takes into account household production (unpaid work) requirements. Using this alternative measure, we present empirical estimates of poverty and compare them with official income poverty rates for Argentina, Chile, and Mexico.

The research project was initiated as a result of joint discussions and collaboration between the Levy Economics Institute and United Nations Development Programme (UNDP) Regional Service Centre for Latin America and the Caribbean (RSCLAC), particularly, the Gender Practice, Poverty, and Millennium Development Goals (MDG) Areas. It seeks to address an identified need to expand the knowledge base—conceptually, analytically, and empirically—on the links between income poverty and the time allocation to unpaid work that fulfils household production needs.

We wish to express our gratitude to UNDP-RSCLAC for their financial and intellectual support, and in particular to Carmen de la Cruz, Gender Practice Leader, Regional Service Centre for Latin America and the Caribbean, without whom this undertaking would not have been possible. In addition, we are grateful to the International Labour Organization (ILO) for the support provided for the case study in Chile. Last but not least, we are indebted to our colleagues for their research contributions and background documents for the case studies—for Argentina, Valeria Esquivel, Instituto de Ciencias, Universidad Nacional de General Sarmiento; for Chile, María Elena Valenzuela and Sarah Gammage, International Labour Organization; and, for Mexico, Monica E. Orozco Corona, Instituto Nacional de las Mujeres, Government of Mexico, and Armando Sanchez Vargas, Universidad Nacional Autónoma de México. They provided valuable inputs and worked alongside the Levy team members: Ajit Zacharias and Rania Antonopoulos, who served as the co-directors of this project; Thomas Masterson who was primarily responsible for the development of the synthetic data files and microsimulations used in the study; and Kijong Kim who provided support in earlier stages of the write-up of this report. The results reported here were generated within a short span of time (under a year), and further exploration of the rich source of information assembled for the project is envisioned over the next year.

We begin with the premise that all people gain access to the necessities and conveniences of life through a combination of markets, state provisioning and household production. For state policies to effectively combat poverty and inequities, a deeper and more detailed understanding of the linkages between the conditions of employment and unpaid household production is required. This nexus creates distinct binding constraints for different types of households and individual men and women. When taken into account, a more complete

picture of hidden inequities emerges, which leads to more accurate poverty measurement and a more effective set of anti-poverty policies. The measurement framework we use in this study is an attempt to lay bare this nexus.

Customarily, income poverty incidence is judged by the ability of individuals and households to gain access to some minimum level of income based on the premise that such access ensures the fulfilment of basic material needs. However, such a threshold metric neglects to take into account the necessary (unpaid) household production requirements without which basic needs cannot be fulfilled. In fact, the two are interdependent and evaluations of standards of living ought to consider both dimensions.

Due to demographic differences—principally in household size and composition—households differ in terms of both their minimum income requirements for meeting basic needs and their household production requirements: just as households differ in their abilities to gain access to income, we must also consider the impact a lack of *time* can have on a household's ability (or lack thereof) to meet household production requirements.

Furthermore, it should not be assumed that *all* household members, women and men, partake equally in meeting these time requirements. It is already well established that women contribute their time disproportionately to unpaid household activities. Inequalities between and within households require that we consider differentiation across income and household production dimensions and therefore, it is imperative to understand how labour force participation and earnings interact with time dedicated to household production responsibilities. Such an understanding is necessary to formulate policies to promote gender, social and economic justice.

## Context

Economic growth does not automatically result in equitably shared outcomes, and despite concerted policy efforts, poverty and inequality—including their gender forms—remain challenging. As a consequence, a focus on social protection and inclusive growth has been gaining renewed momentum recently among policy advisors, governments, and international development agencies such as UNDP and the ILO. It is well understood that to be effective, policy interventions ought to address the inequitable socioeconomic positions that 'lock' segments of the population, both women and men, in poverty. In this perspective, expanding employment opportunities and aligning redistributive social programs to meet social needs are deemed critically important. If the objective is to improve living standards and economic wellbeing, it is of interest to understand the degree to which time allocation between market and non-market activities allows households and individuals to procure the basic necessities and conveniences of life.

From a women's economic empowerment perspective, to address the reasons that prohibit them from participating in and benefiting from economic growth it is important that the overall approach and precise choices of interventions redress women's disadvantages, many of which are based on social roles and responsibilities. More specifically, if unpaid work continues to be seen as 'natural' and if there is a lack of awareness of how time allocation between unpaid and paid work frustrates improvements in the standard of living and poverty reduction, women's strategic interests will not be well-served. The links between unpaid household production, income, and poverty must be accounted for and clearly measured in poverty calculations. Beyond the concern about gender equality, if the wellbeing of a household and its members—men, women, and children—depends on its

earnings and on (unpaid) household production activities, a household's inability to perform needed tasks due to lack of time exerts an impact of the standard of living and therefore should not be ignored when we evaluate progress made.

To that end, we provide an analytical and empirical framework that integrates unpaid household production work in the concept and measurement of poverty. Our approach shows *that awareness of gender differences in time allocation can bring to the forefront a 'missing' but key analytical category* that allows for an improved measurement of poverty, and a deeper and more precise poverty classification of households and individuals. Furthermore, correcting for the long-standing omission of household production creates space for recalibrating and informing impact analyses of economic growth, which should incorporate possible changes in labour market outcomes and earnings in tandem with changes in household production. This deeper view into the nature of time and income poverty can allow for more clarity on the differentiated challenges households and individuals confront and hence better inform effective policy options towards poverty reduction.

## The concern with official income poverty measurement

Unpaid household production activities contribute to the fulfilment of household members' needs, and the argument has long been made that GDP and economic wellbeing measures should reflect that contribution. When it comes to the official poverty thresholds, there is an unacknowledged, implicit assumption that, at any given level of income, all households have the ability to allocate a certain minimum amount of time to household production. But just as some households cannot gain access to a minimum income, the possibility exists that at least some households may not have enough time to meet the poverty level household production time requirements. A variety of reasons can account for this time deficit, i.e., individuals in the household may be devoting too much time to employment or the size and composition of a household may mandate that an exorbitant number of unpaid work hours are needed. As a result, two households with incomes equal to the poverty threshold will have the same official poverty ranking even though one of them may be unable to allocate sufficient time for necessary household production activities. In such cases, it would be wrong to presume that these households' standards of living are identical.<sup>1</sup>

The alternative measure we propose is a two-dimensional measure of income and time poverty, which we refer to as the Levy Institute Measure of Time and Income Poverty (LIMTIP). Time poverty, especially when coupled with income poverty, imposes hardships on the adults who are time-poor as well as their dependents, particularly the children, elderly, and sick. Income poverty alone does not convey enough useful information about their deprivation. Our measure can shed light on this phenomenon.

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<sup>1</sup> Our criticism of the official thresholds is especially relevant for low-income working families. Workers in such families may not have the time to perform the essential tasks of household production—cooking, cleaning, taking care of children, etc.—that needs to be undertaken to reproduce themselves, nor may they have enough money to replace their time deficits with market substitutes, such as, for example, buying ready-made meals. That is, some low-income working families who are classified as income-nonpoor may actually be income-poor if their time deficits are taken into account.

## Methodology

*What is a time deficit?* We begin with the accounting identity that the physically fixed total number of hours available to any individual (i.e., 24 hours in a day or 168 hours in a week) equals the sum of time spent on income generation activities, household production, personal care and everything else. An individual suffers from a time deficit if the *required* weekly hours of personal care and household production plus the *actual* weekly hours the individual spends on income generation is greater than the number of hours in a week (168). While the hours of employment are observable, the derivation of the threshold values for personal care and household production invite further explanation.

We assume that the threshold value for personal care is equal to the average weekly hours spent on personal care activities (sleeping, eating, bathing, etc.) by adults. The threshold is set at the individual-level and it applies uniformly to every adult.<sup>2</sup> In contrast, the thresholds for household production are set at the household-level, that is, they refer to the total weekly hours of household production to be performed by the members of the household, taken together.<sup>3</sup> The thresholds are constructed for 12 types of households, differentiated by the number of adults and children. For each type of household, the threshold is equal to the average weekly hours of household production for households that possess two specific characteristics: first, their incomes are near the official poverty line, so as to gauge the required poverty level household production time; and second, they have at least one nonemployed adult present, so as to ensure that the threshold hours are derived from households that are not in fact constrained by exorbitant time allocations to paid work activities. Next, to calculate each individual's share in required household production, we use their share of actual household production hours in their household as revealed by the time use data. This latter step captures the intrahousehold dynamics that make this model distinct from the unitary model of household decision-making. We do not consider household members with time surpluses as available to fill in for the time deficits of other members (at least not necessarily), since that is not what is observed in the time use data.

*How do time deficits modify poverty thresholds?* Once we have the time deficits for each individual in a household the next step is to calculate the income necessary for that household to fill the gap in household production time via market purchases. We estimate the money equivalent of household production time gaps based on the average wage for domestic workers. This amount is added to the official income poverty line for that household so as to obtain a new income poverty line that is now adjusted by the time deficit. We refer to this as the LIMTIP poverty line. Obviously, the official and modified (LIMTIP) thresholds will coincide if the household has no time deficit.

*How is the LIMTIP poverty classification different from official measures?* Our measure is a two dimensional one. Accordingly, we can identify the households and individuals that are in time and/or income poverty. A household is time-poor if any person in the household suffers from a time deficit, and LIMTIP income-poor if the household income falls below its LIMTIP poverty line. Analogously, an individual is time-poor if they suffer from a time deficit; and LIMTIP income-poor if they live in a LIMTIP income-poor household. This allows us to produce a four-category classification of time and income poverty (LIMTIP)

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<sup>2</sup> In our estimates, we apply the thresholds to adults between the ages of 18 and 74 years.

<sup>3</sup> In calculating the total weekly hours of household production for the household, we include all individuals in the households for whom time-use information exists.

status for both individuals and households: (a) income poor- time poor; (b) income poor-time nonpoor; (c) income nonpoor- time poor and (d) income nonpoor- time nonpoor. With these thresholds and this classification we can analyse populations and sub-groups based on the incidence of and depth of both time and income poverty.

*How can this methodology be used to assess poverty reduction policy scenarios?* In addition to reevaluating both the breadth and depth of poverty, this measure allows us to assess the impact of actual or potential poverty-reduction policy strategies on households' and individuals' abilities to meet basic needs, including household production requirements. In this study, we investigate the poverty reduction implications—using official and LIMTIP poverty thresholds—of a hypothetical scenario in which every employable adult who is currently nonemployed or employed part-time becomes employed full time (under the existing pattern of earnings and hours of employment). This scenario allows us to examine the extent of poverty-reduction that may result from an admittedly highly improbable scenario full-time employment for everyone. This is especially relevant because much of the policy debate on inclusive growth centres around the growth-employment-poverty alleviation nexus.

## Data

In order to produce the data set required to estimate the measure for each country, we first combine two distinct surveys: a time use survey and a household income survey. The table below provides information on the specific surveys used in this study.

Country	Income Survey	Time use Survey
Argentina	Encuesta Annual de Hogares (EAH), 2005	Encuesta de Uso del Tiempo de la Ciudad de Buenos Aires (UT), 2005
Chile	Encuesta Caracterización Socioeconómica Nacional (CASEN), 2006	Encuesta Experimental sobre Uso del Tiempo en el Gran Santiago (EUT), 2007
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH), 2008	Encuesta Nacional sobre Uso del Tiempo (ENUT), 2009

The method used to combine them is statistical matching, whereby we identify individuals in the time use survey ('donors') that are most similar to individuals in the income survey ('recipients') and carry over their time use data. This is done in matching cells constructed using both household characteristics (the number of children and the number of adults in the household, presence of at least one nonemployed household member, an indicator of nearness to official poverty status, household income and in the case of Mexico, rural/urban location) and individual characteristics (sex and labour force status). The similarity of individuals within these cells is calculated using propensity scores based on other characteristics, which were available in both surveys (age and educational attainment, for example).

The full-time employment simulation was done by using the information already in the synthetic data set produced in the matching described above. We first identified all eligible (not in the military, retired, in school, or disabled) adults who were not employed full-time

(25 weekly hours or more). Then we identified all the adults who were working full-time. Using multinomial logistic regressions of industry and occupation run on the donor pool, we predicted the likeliest industry and occupation for persons receiving jobs in the simulation. We then employed a three-stage Heckit procedure to impute hours and wages for recipients and donors. We used these imputations and other information to match recipients with donors in a hot-decking procedure to transfer usual hours and earnings. Since the transition of the recipient pool into full-time employment entails shifts in the shares of household production of all members of households with job recipients, we then performed another hot-decking procedure to transfer hours of household production from individuals in the original synthetic data set who were working full-time and in a household in which all eligible adults were working full-time, to all the members of households in which at least one person received a job in the first stage. With these steps completed, we then recalculated the individuals' shares of required household production, individual time deficits, and adjusted poverty lines for households. We then analysed the new distribution of LIMTIP and compared it to the actual to assess the first-order impact of such a shift in employment in each country.

## Summary Findings I: The Time and Income Poverty of Households

LIMTIP monetizes household production time deficits and adds them to the household's official poverty threshold to create an adjusted, LIMTIP poverty line. The issue at hand is to gauge whether a household's income is adequate to both meet the basic needs embodied in the official poverty line and to purchase market substitutes for these time deficits. Those households that suffer from an inability to 'buy' themselves out of household production time deficits (caring for children for instance) are invisible as far as official poverty estimates are concerned. The size of the hidden poor, namely those with incomes above the official threshold but below the time deficit adjusted LIMTIP poverty line, was considerable in all three countries (Table 1). The LIMTIP income poverty rate for Argentina is 11.1 percent, compared to 6.2 percent for the official poverty line. For Chile, adjusting for time deficit increases the poverty rate to 17.8 percent from 10.9 percent for the official line. And in Mexico, the poverty rate increases to 50 percent from an already-high 41 percent. This implies that the households in hidden poverty in Argentina, Chile, and Mexico comprise, respectively, 5, 7, and 9 percent of all households.

Taking time deficits into account dramatically alters not only the incidence but also the depth of income poverty. The average LIMTIP income deficit for poor households was 1.5 times higher than the official income deficit in Argentina and Chile and 1.3 times higher in Mexico. Thus, official poverty measures grossly understate the unmet income needs of the poor population. From a practical standpoint, this suggests that taking time deficits into account while formulating poverty alleviation programmes will significantly shift both the coverage (including the 'hidden poor' in the target population) and the benefit levels (including the time-adjusted income deficits where appropriate).

**Table 1 Official, LIMTIP, and ‘Hidden’ Poverty Rates and Number of Poor (thousands)**

	Official income poverty		LIMTIP income poverty		‘Hidden poor’	
	Number	Percent	Number	Percent	Number	Percent
Argentina	60	<b>6.2</b>	107	<b>11.1</b>	47	<b>4.9</b>
Chile	165	<b>10.9</b>	271	<b>17.8</b>	106	<b>6.9</b>
Mexico	10,718	<b>41.0</b>	13,059	<b>50.0</b>	2,341	<b>9.0</b>

In all three countries, only a minority are free of both income and time poverty, with the best scenario emerging in Argentina, at 45 percent, while the rate stands at 33 percent in Chile and only 20 percent in Mexico. The proportion of households (poor and nonpoor combined) with time deficits was 52, 61, and 65 percent, respectively, in Argentina, Chile, and Mexico.

Interestingly enough, we also found that the incidence of time deficits was higher among the income-poor than the income-nonpoor households *in all three countries*. The gap was the widest in Argentina (70 versus 49 percent). It was somewhat smaller in Chile (69 versus 60 percent) and Mexico (69 versus 61 percent). While the stressful long hours of the professional classes are publically acknowledged, the plight of the poor is not as clearly understood. We will return to this point shortly.

The principal cause of time poverty is long hours of employment (employment time-bind). But we must note a strong gender dimension at this point: a significant number of individuals have time deficits even before employment hours are taken into consideration because they face an unequal burden of household production hours—a housework time-bind. In Argentina and Mexico, such individuals made up roughly 20 percent of all time-poor individuals while, in Chile, they constituted a smaller fraction at 13 percent. The vast majority are women, and the time deficits they face are staggering: between 50 and 60 hours a week.

Clearly, the employed are more prone to time deficits than the nonemployed. Therefore, taking time deficits into account increases the share of employed households (those with the head, the spouse, or both employed) in the total number of LIMTIP income-poor households. Among employed households, hidden poverty was greatest for dual-earner households. But the largest degree of hidden poverty among employed households occurs when children are present, especially children below the age of 6. Overall, the incidence of hidden poverty in employed households followed closely that of the population at large in all three countries. Unsurprisingly, a much lower proportion of employed households suffered neither time nor income poverty than the nonemployed. But in all three countries, the employed income-poor have the highest rate of time poverty (82 percent in Argentina, 81 percent in Chile, and 76 percent in Mexico) and approximately 90 percent of the time-poor households are employed households.

Comparing single female-headed to married couple households, in Argentina and Chile we find higher rates among the former for both official and LIMTIP income poverty; while in Mexico the income poverty rate was slightly higher for married couples. The differences were even greater for households with children, with 20.8 percent of married couple

households with children in LIMTIP income poverty compared to 27 percent of single female-headed households with children in Argentina; and 22.1 compared to 38.5 percent in Chile. In Mexico, both rates were much higher, but the gap was small, at 59.2 versus 59.8 percent. This pattern is repeated in terms of the depth of income poverty, as single female-headed households have a larger income deficit as measured against the poverty line than married couples in Argentina and Chile, while in Mexico, the income deficit is nearly identical.

Finally, we return to a point mentioned earlier. We noted above that the incidence of time deficits was higher among the income-poor than the income-nonpoor households. Looking closer now at households that experience time deficits, the time deficits of time-poor and income-poor households were higher than those of the time-poor but income-nonpoor households, dispelling the view held in some quarters that time poverty is an affliction confined to relatively well-paid professionals. The scales were tipped the greatest in Argentina, where for married couple households the average time deficit for the income-poor was 43 hours per week compared to 26 hours for the income-nonpoor. This gap was the smallest in Mexico with 33 compared to 26 hours per week.

## Summary Findings II: The Time and Income Poverty of Individuals

Our designation of the household as time-poor or time-nonpoor is based on the time poverty status of individuals in the household; i.e., we classified the household as time-poor if there was at least *one* time-poor adult living in the household, and time-nonpoor if no one in the household was time-poor. This approach allows us to identify the time-nonpoor and time-poor individuals *within* time-poor households with two or more adults, and explore intrahousehold gender differentials in time poverty. Our analysis of time poverty of individuals in time-poor households that was carried out for (a) all time-poor households, (b) time-poor households differentiated by the employment status of head and/or spouse, and (c) time-poor households grouped by the type of family were conducted on this premise.

In this section, however, we focus on adults living in *all* households, rather than exclusively time-poor households. We found that the LIMTIP poverty rate was higher than the official poverty rate for individuals. The share of the hidden poor individuals in the total population is noteworthy (Table 2): 7 percent or 183,000 in Buenos Aires and also 7 percent or 432,000 in Gran Santiago and 9 percent or 9.5 million in Mexico. While there are more women than men who were LIMTIP income-poor, there were only small differences in poverty rates by gender. However, the differences between adults and children were large because households with children are more likely to be poor. In Argentina, the official and LIMTIP poverty rates of children were more than twice those of adults, and 65,000 children were in hidden poverty, bringing the total to 150,000 in LIMTIP income poverty. In Chile, the official and LIMTIP income poverty rates for children were 9 and 12 percentage points higher than for adults, at 19 and 29 percent, respectively. In Mexico the gap was even larger at 15 and 17 percentage points for official and LIMTIP income poverty, though the relative increase was smaller, since poverty rates are so high in Mexico. In Chile, an additional 172,000 children are recognized as living in income poor households using the LIMTIP

definition, bringing the total to 487,000, while in Mexico the number was 3.7 million, bringing the total to about 26 million children living in poverty.

One of the striking findings is that most children live in time poverty, that is, they are members of time-poor households, surrounded by adults that face time deficits: 80 percent of children in Argentina, 70 percent in Chile, and 74 percent in Mexico. Children living in income poverty were exposed to even greater incidence of time poverty: 84 percent in Argentina and 75 percent in Chile and Mexico. While in Argentina and Chile roughly the same proportion of women and men (5 or 6 percent) suffered both time and income poverty, in Mexico the ratio was slightly higher for women, 19 compared to 16 percent. In all three countries, women suffered higher rates of time poverty than men: 33 compared to 31 percent in Argentina; 32 versus 27 percent in Chile; and 36 compared to 31 percent in Mexico. Not surprisingly then, in all three countries men were more likely to be both income- and time-nonpoor: 62 compared to 60 percent in Argentina; 63 versus 56 percent in Chile; and 36 compared to 32 percent in Mexico.

**Table 2 Poverty rate of men, women, children and all individuals (percent): Official versus LIMTIP**

		Official	LIMTIP	Hidden
Argentina	Men	7	13	6
	Women	7	12	6
	Children	16	28	12
	<b>All</b>	<b>9</b>	<b>16</b>	<b>7</b>
Chile	Men	9	15	6
	Women	11	18	7
	Children	19	29	10
	<b>All</b>	<b>13</b>	<b>20</b>	<b>8</b>
Mexico	Men	40	49	9
	Women	43	51	8
	Children	57	67	10
	<b>All</b>	<b>47</b>	<b>56</b>	<b>9</b>

Addressing differences in time poverty rates among adults by sex, income poverty, and employment sheds additional light on the composition of time poverty. In income-poor households, men had slightly higher overall rates of time poverty than women in Argentina (41 versus 39 percent) and Chile (36 versus 34 percent), but lower rates in Mexico (33 versus 38 percent). But all of the male time poverty in Chile and Mexico and most in Argentina is that of *employed* men, and although *most* of the time poverty in income-poor households is that of employed women, 20 percent of the time-poor women in Argentina and Chile and 33 percent in Mexico were nonemployed, and so in the housework time-bind. This is true of almost none of the nonemployed men. In income-nonpoor households, time poverty rates were consistently higher for women than for men (31 versus 29 percent in Argentina, 32 versus 26 percent in Chile, and 34 versus 29 percent in Mexico). In Argentina and Chile, this was due mostly to the sharper drop in time poverty rates for employed men between income-poor and nonpoor households. In Mexico, the gap between male and

female time poverty rates is the same for income-poor as for income-nonpoor households, and since the share of men in employment is the same, the drop in male time poverty comes entirely from the lower time poverty rate of employed men, while for women, the drop comes from the lower rate of time poverty among nonemployed women.

The gap between official and LIMTIP income poverty rates is greater for employed individuals than for the nonemployed, due to the larger time deficits of the former group. In Argentina and Chile, employed men and women had similar rates of both official and LIMTIP income poverty. In Mexico, however, employed men had higher rates of official (LIMTIP) income poverty than women: 40 (49) versus 33 (45) percent. For the nonemployed, the situation varied across the three countries. In Argentina, nonemployed men had higher rates of official (LIMTIP) income poverty than women: 15 (21) versus 11 (15) percent. In Chile, the nonemployed men were slightly more likely to be income-poor: 18 (23) versus 16 (22) percent for women. And in Mexico, nonemployed women were more likely to be among the income-poor: 50 (56) compared to 43 (49) percent for nonemployed men. Two striking implications of accounting for time deficits in the measurement of poverty become apparent. First, employed persons constituted a greater proportion of the poor under the LIMTIP poverty line than the official poverty line. Second, women account for a larger share of the employed poor when time deficits are taken into account.

In all three countries, workers facing the double deprivation of time and income poverty were concentrated in the lowest two quintiles of the earnings distribution, and since women are at a disadvantage in earnings, the majority was women. Yet, as measured by LIMTIP, poverty extends its reach beyond employed individuals in the bottom quintiles of the earnings distribution, at least much more so than the official poverty measure: adjusting official poverty lines for time deficits means that more of the employed LIMTIP income-poor will be from higher up in the earnings distribution. In Argentina, 89 percent of officially income-poor individuals were from the bottom two quintiles of the earnings distribution, while only 74 percent of the LIMTIP income-poor were. By implication, 24 percent of the LIMTIP poor are from higher income brackets. A similar story is evident in Chile, where 90 percent of the officially poor but 71 percent of the LIMTIP income-poor were from the bottom 40 percent of the earnings distribution. Finally, in Mexico, where poverty is more widespread, the numbers were much closer: 62 versus 58 percent. Breaking these numbers down by sex, we found that women were overrepresented in the lower earnings quintiles, and so, even though their income poverty rates were lower, they comprised a majority of the income-poor among the bottom quintile, except in Mexico, where an almost equal share of employed men and women in the bottom quintile results in an almost equal share of the income-poor in the lowest quintile.

Turning to consideration of the incidence of time and income poverty by employment type, we find that while there are relatively small differences in poverty rates between men and women in the different employment categories in Argentina, own-account women workers are more likely to suffer from the combination of income and time poverty, though they are outnumbered by men since men make up a majority of own-account workers, while among casual-wage workers, the number of income-poor women is higher than that of men, though their poverty rate is smaller. Also, the largest single group among the LIMTIP income-poor population was regular workers, while among the official income-poor the largest single group was casual workers. In Chile, by contrast, the rates of time poverty were higher for women than for men in all three employment types, and the official and LIMTIP poor were both concentrated among the regular-wage workers (although casual workers did comprise

a larger share of the LIMTIP than of the official income poor). In Mexico, income poverty rates were lowest for regular-wage workers, by a wide margin (34 percent of regular-wage workers suffered from LIMTIP income poverty compared to between 56 and 61 percent, respectively, of own-account and casual workers). The gender differences in poverty rates were highest among casual-wage workers, while the incidence of the double-bind of time and income poverty was lowest among regular-wage workers, and roughly similar for unpaid family workers, own-account, and casual-wage workers.

## Full Employment Simulation

The aim of this exercise is to explore the ability of households to transition out of poverty should adults of working age - currently underemployed or in nonemployment status-become employed. While gaining access to paid work increases the income of the newly employed individual and household they belong to, some are liable to experience time deficits. Transitioning out of poverty will therefore depend not only on their prior income gap and the sufficiency of newly earned income to close it, but also on redressing time deficits, if and when they emerge. Given prevailing labor market conditions should their hourly wages prove too meager, i.e., so low that they cannot replace the monetized value of their newly emerging household production time deficit, their disadvantage and deprivation will certainly not be addressed through paid work alone. An even more counterintuitive outcome of falling deeper into poverty or becoming poor exists: for example, if a member of income-nonpoor household becomes employed and receives wages below the wage of a domestic worker, time deficits can potentially prove to be poverty inducing.

Approximately 80 percent of the adults with incomplete hours of employment or in non-employment status—in other words, 80 percent of those who were shifted to full-time employment in our simulation—were women. Given our previous findings, we know that when women are employed, they are prone to higher levels of time poverty, and therefore we can anticipate that while earnings will be reducing poverty, time deficits will be pulling quite strongly in the opposite direction. Furthermore, the majority of potentially employable women (approximately 60 to 65 percent) turned out to be mothers living with children under 18 years of age. Among the employable income poor their rate was as high as 66-68 percent. As we have seen before, households with children are more vulnerable than households without children to income and time poverty in all three countries. This raises doubts about whether additional earnings can be sufficient for a substantial number of households to escape income poverty, unless intermediation to redress time deficits becomes available.

Our findings suggest that in fact job creation can lead to a very substantial reduction in the poverty rate: by 83 percent in Buenos Aires, 72 percent in Gran Santiago, and 48 percent in Mexico. Nonetheless, job creation was not the answer to poverty reduction for all households. As measured by LIMTIP, the decline in income poverty rates is less robust: 45, 38 and 22 percent for Buenos Aires, Gran Santiago and Mexico respectively (Table 3). When we compare the before and after simulation results, in fact, hidden poverty—the difference between the official and LIMTIP rates—stayed almost the same for Argentina and Chile but increased considerably in the case of Mexico.

Among the households that remain in income-poverty—the hard-core poor—it is important to distinguish between three different groups. The first group of households did not experience any change in their poverty status because they contain only ineligible adults,

i.e., adults who were disabled, retired, in school, or in the military. Poverty alleviation for these households cannot be effectively accomplished via job creation. The second group of households did not experience any change in their poverty status because all the eligible adults were already employed full-time. The third group consists of households that, even though they have employable adults who were assigned full-time employment in the simulation, remain below the LIMTIP poverty line. Some households in this third group will be officially income-poor while the others would belong to the hidden poor, i.e., households with incomes above the official threshold but below the LIMTIP poverty line. The majority of households in our case studies were the hidden poor, thus suggesting that monitoring the incidence of poverty via official measures can be fraught with problems. Besides biased results, official poverty estimates obscure an obvious policy recommendation: to redress time poverty among the working poor, efforts to promote job creation must be accompanied by social provisioning that reduces household production needs. Increasing the labour force participation rate of women is absolutely essential to promoting gender equality, inclusive growth and poverty reduction agendas, but unless an integrated approach is undertaken, we will only substitute one type of inequality with another, while at the same time misleading ourselves by presuming that the wellbeing of households is improving.

**Table 3 Actual and simulated income poverty rates (percent)**

	Argentina		Chile		Mexico	
	Actual	Simulation	Actual	Simulation	Actual	Simulation
Official income-poor	6	1	11	3	41	21
LIMTIP income-poor	11	6	18	11	50	39
<i>LIMTIP minus official (hidden poor)</i>	5	5	7	8	9	19

As expected, in all three countries full employment brought about the most dramatic and positive impact on those in income poverty but with time to spare; namely, the time-nonpoor. The share of such households in the total number of households fell from 3 to 0 percent in Buenos Aires, from 6 to 1 percent in Chile, and from 15 to 2 percent in Mexico. From a policy perspective, this reinforces the idea of custom tailoring interventions. What works for one group may not work for others. As can be seen in the table below, access to a job will not be a solution for households in time poverty. For them, (women, for the most part) their time poverty must be addressed if they are going to benefit from the new job opportunities created, for example, through a successful inclusive growth agenda.

**Table 4 Proportion of LIMTIP income-poor households in the total number of households by time poverty status, actual and simulated (percent)**

	Argentina		Chile		Mexico	
	Actual	Simulation	Actual	Simulation	Actual	Simulation
Income-poor and time-poor	8	6	12	10	35	37
Income-poor and time-nonpoor	3	0	6	1	15	2

In our scenario, the overall time-poor segment of income-poor women actually grew in Chile and Mexico, indicating that a proportion of the newly employed women ended up being time-poor and income-poor, while in Argentina, this segment showed no change in its size. On the other hand, the time-poor segment of income-poor men stayed constant in Argentina and Mexico, while it showed a slight decline in Chile. A notable gender disparity in the proportion of people with neither time nor income deficits emerged with full employment because the time poverty among income-nonpoor people rose faster for women than for men. This inequity highlights the hard choices women in nonpoor households are called on to make between paid and unpaid work.

Among the employed, women had higher rates of time poverty than men on both sides of the poverty line in the actual situation. This disparity widened in a marked fashion with full-time employment. The disparity in time poverty rates between income-poor and income-nonpoor women also widened considerably with full-time employment.

One of the most disturbing findings is that over 95 percent of income-poor children in all three countries would find themselves living with at least one time-poor adult in the full-time employment scenario. This finding suggests the importance of considering policies specifically aimed at children in poor, employed households as an integral part of job creation strategies. Without such policies in place, job creation programmes may have undesirable effects on the well-being of the children of the working poor. And since most children in income-nonpoor families would also live with at least one time-poor adult in our simulation, support for policies specifically aimed at easing the time-crunch faced by poor working parents may come from middle class working parents too if the policies proposed are adequately universal.

We can now see that poverty-reduction strategies that do not take into account the time required to reproduce the household will fall short of reducing deprivation, and indeed could exacerbate it in some extreme cases. The simulation confirms that the objective of increasing labour force participation of women, especially from low income quintiles, requires integrated policies. As long as low wages prevail and child or afterschool programs are sparse the goal cannot be met. It must also be recognized that if these challenges are not addressed, gender inequalities intersecting paid and unpaid work will remain entrenched. A multi-pronged approach, such as a progressive movement towards a living-wage guarantee, a better transportation system for easier commutes, and social care provision, is necessary to reduce poverty—both visible and ‘hidden’.

## Policy Considerations

The poverty-inducing effect of the *time deficits* that individuals and households contend with is, in fact, substantial. Neglecting to take this factor into account renders many households’ inability to meet basic needs invisible. Some, especially the employed, fall outside the radar of policy— these are the ‘hidden poor’. For others, the difficulty arises in that their depth of poverty is largely underestimated, and current levels of interventions, including cash transfers (or earned income tax credit) cannot truly lift them out of poverty. For those with incomes that hover around the LIMTIP poverty threshold, the risks and vulnerabilities they face are indiscernible by official poverty measures, and idiosyncratic or systemic shocks are bound to create hardships for them. Our framework usefully quantifies and makes these vulnerabilities visible.

Poverty-inducing time deficits in household production are distributed differently across households and individuals based on gender, household size, the presence of young children, and parental and worker status. Hence this study reinforces the idea that when remedial policies are contemplated, 'one shoe does not fit all sizes'. Finally, we have shown that inclusive growth policy interventions that aim at job creation can be effective for a large percentage of the income-poor population, but are likely to also leave behind a sizeable number of the income-poor. Unless policies are in place to counteract time deficits in household production and dismally low wages, many individuals, and women in particular, will remain excluded from the promise that remunerative work holds out.

Despite widely differing economic conditions and social and economic policy regimes across the three countries in our study, we are able to identify overarching themes in terms of poverty-reduction strategies that effectively and simultaneously address both time and income poverty. Most importantly, two groups present in large numbers in all three countries, the working poor and the nonemployed, must be approached very differently in terms of policy interventions. It is worth highlighting the following findings and their implications.

*A number of recommendations follow from our analysis of the working poor:*

First, public action to alleviate the burdens of time and income poverty can and should be based on alliances that cut across the gender line, since our estimates indicate that workers suffering from income and time deficits were divided nearly equally across the sexes and included the middle class and even the upper-middle class in Mexico. In this respect regulation of the length of the working day is important for all workers, but more so for men, whose hours of employment are 20-30 hours longer than those of women, with some of them reaching 60 to 70 weekly hours of employment.

Second, women workers formed the majority of the group that was the worst-off according to our measure: members of income-poor households, individually time-poor, and belonging to the bottom of the earnings distribution. Therefore improvement of overall gender equity requires an integrated three-pronged agenda of moving gradually towards full-time paid work, making early childhood development and after school programs available and ameliorating gender pay disparities.

Third, while the poverty situation of workers in own-account and casual work status is considerably bleaker when time deficits are taken into account, a substantial segment of regular (registered) workers were also prone to similar vulnerabilities because they belonged to the hidden poor, thus bringing to light a rather neglected aspect of deprivation in Latin America. Thus, policies to address time and income deficits can benefit regular workers as well as casual and self-employed workers to a much more equal extent than implied by the official poverty measure.

Fourth, the higher vulnerability of working parents—men and women—and households with young children to income and time poverty makes clear the need to either augment income-support programmes or expand greatly in-kind social provisioning of child care and early childhood development programmes offering hours of operation that are appropriate for the work schedules of parents and especially of women.

Fifth, from a gender perspective, the fundamental policy concern here is that the 'male breadwinner' model is being reconstituted and reinforced by the realities of the labour

market that women and men face. More often than not, among poor households, it does not 'pay' for women to be full-time workers due to a combination of wage differentials and precarious work for women, men working very long hours for slightly better pay, and the lack of vigorous decent job creation for all.

Sixth, in light of the fifth point, it is rather unreasonable to expect that gender-equitable redistribution of intra-household responsibilities is easily achievable in these three countries. The co-responsibility of the state in care provisioning is central to enabling women to allocate more time to employment. But for women who are currently nonemployed or underemployed job opportunities must be accompanied by active policies that reduce their household production time deficits or poverty reduction cannot become a reality.

Finally, our findings suggest a need for deepening the policy dialogue on a critical issue. In fighting income poverty (time adjusted) there are two obvious policy routes. The first is unconditional cash transfers: they can in fact close LIMTIP income gaps, especially if transfer levels are based on accurate calculations of the depth of poverty. The alternative requires a much more transformative approach that is based on institutional labor market interventions: the cornerstone here is the reduction of gender-based wage differentials, the progressive realization of living wages and a regulatory framework on how to effectively reduce distress-based long hours of paid work.

*For the nonemployed poor, a distinct but overlapping set of proposals is called for.*

First, given that a large portion of nonemployed adults were women with children under 18 years of age and only a high school degree or less, employment policies that do not take into account these crucial features of the employable adults in income-poor households are likely to be less effective in terms of poverty alleviation, and the need for early childhood care and afterschool programmes we discussed above is clearly equally pertinent here.

Second, because full employment can produce a dramatic reduction in the incidence of income poverty even without altering the current structure of earnings, efforts to steer economic development towards inclusive growth via policies that encourage employment generation are clearly central to poverty alleviation. This creates space for innovative and flexible 'employment guarantee' labor market/social protection policies. These policies are helpful when labor market conditions are slack, in that they effectively put in place a wage floor, regulation of work hours and a minimum benefit package while providing part time employment.

Third, the fact that with full employment the LIMTIP poverty rate was as high as the actual (i.e., pre-simulation) official poverty rate indicates that increases in employment would have to be accompanied by much of what was discussed earlier for the case of the working poor: labour market legislation (e.g., introduction of higher minimum wages); redistributive policies to expand social provisioning of care; government cash transfers; creation of jobs that pay living wages; and, probably a particular combination of all of the above depending on the circumstances of individual countries.

Fourth, the fact that half or more of the hard-core poor consisted of the hidden poor indicates that using the official poverty measure to monitor the impact of job creation on poverty alleviation can leave a substantial portion of the working poor off of the radar of policymakers.

Finally, the fact that the majority of the employable adults that were 'given' full-time employment in the simulation were mothers means that if early childhood development services were to be made available, the time deficits they are likely to encounter with full-time employment would be ameliorated and, at least for some, an exit from income poverty would be facilitated.

Our study has highlighted the *jobs deficit* (lack of job opportunities), *earnings deficit* (the inability of a substantial segment of employed households to attain an income above the poverty line), and the *deficit in the social provisioning of care and other essential services*, such as transportation, that interact to keep a considerable proportion of the population locked in the grip of poverty. A coherent set of interlinked interventions that address the triple deficit of jobs, earnings, and social provisioning must lie at the core of any inclusive and gender equitable development strategy that is worth its name. Public action and public policy cannot afford to wait for positive outcomes to magically trickle down. Neither can social development interventions be expected to deliver on the promise of poverty reduction in light of the interlocking nature of the triple deficits identified above. Appropriately sequenced policy interventions can improve if they are custom tailored to answer the question, "Who needs what?" so that initiatives match the sub-populations' needs. Of course, the choice of instruments to address each element of the triple deficit matters, because some interventions hold the potential of being deeply transformative while others leave embedded inequalities in social and economic life intact. Prioritizing the reduction of the deficits faced by the least privileged -even in the case of a 'universal' policy orientation - holds much promise for reducing inequalities and deprivations, for men and women alike.