Why Time Deficits Matter: Implications for the Measurement of Poverty

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Introduction

Household production, defined in the narrow sense as production of services by members of the household for own consumption (such as cooking, cleaning, and childcare), have long been considered as an essential activity for maintaining living standards (Kuznets et al 1946:432−433; Reid 1934). [1] In the latest UN System of National Accounts (SNA), the international statistical standard for the national accounts, these activities are recognized as making "an important contribution to economic welfare." [2] This recognition resonates well with the efforts that have been undertaken in various countries to develop methodologies to construct satellite accounts of household production (see, e.g., Eurostat 2003; United States National Research Council 2005).

Most of the services resulting from household production can, at least in principle, be substituted by market equivalents; hence, such production by households has been considered as a type of in-kind income in studies of household income distribution (see, e.g., Bonke 1992; Jenkins and O'Leary 1996; Frazis and Stewart 2011). Typically, the approach is to add an imputed value of the time spent on household production to a relatively simple definition of pre-tax or post-tax money income and then examine its impact on measures of inequality. Research undertaken at the Levy Economics Institute since 2001 has focused on new methods of valuation and incorporating household production in a comprehensive measure of economic well-being rather than in a simple measure of money income (see, e.g. Wolff, Zacharias and Caner 2004; Wolff, Zacharias and Masterson 2011). Recently, the 2009 report of the Sitglitz-Sen-Fitoussi Commission

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[1] The broader definition of household production would include production of goods (including fetching water and firewood) for own use or sale by households and own-account production of housing services by owner occupiers. According to the SNA, the above-mentioned activities should be included in national accounts (SNA 2008, paragraphs 6.27-6.28, p.98). Throughout this paper, we are using the term "household production" in its narrow sense.

[2] However, as in the previous editions of the SNA, the recommendation is to exclude them from the main body of national accounts because national accounts are not designed "simply, or even primarily, to produce indicators of welfare" (SNA 2008, paragraph 6.29, p.98). In addition, measurement and valuation issues involved in the inclusion of household production are considered as impervious to any sort of reasonably agreeable resolution. Further, its inclusion could have an adverse impact on the usefulness of standard accounts for various analytical and policy purposes; for example, such inclusion would also, it is argued, necessitate the inclusion of those who perform household production activities (in the narrow sense) among the economically active population leading to a situation where "virtually the whole adult population would be economically active and unemployment eliminated" (SNA 2008, paragraph 6.31, p.99).

emphasized the role of household production by arguing for a satellite account of household production in national accounts, comprehensive measures of household economic well-being that incorporate household production, and quality of life indicators that includes the time spent on household production (Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi 2009: 23, 35 and 174). The OECD is conducting work on household production in its program on Measuring Progress and National Accounts Working Party (see, e.g. Ahmad and Koh 2011).

In spite of the attempts made in taking household production into account in measures of aggregate economic activity and household economic well-being, official measures of poverty neglects the links between household production and living standards. This omission would not be troublesome if the time necessary to engage in such production were always amply available. But this need not be the case.[3]

To the degree that some households and individuals face time constraints that prohibit them from performing basic housework tasks such as cooking, cleaning, and caring for children; and insofar as they do not have the wherewithal to obtain substitutes (e.g., paid child care), official poverty estimates do not capture the full extent of deprivation. Further, it is quite plausible that the joint distribution of time and income deficits differs systematically across population subgroups (e.g., families with children versus single-adult households). Should this prove to be the case, the reported data on the incidence and depth of poverty would be inaccurate. It also follows that poverty trends can be biased, and hence highly misleading. If we accept the proposition that household production contributes to the standard of living, taking time deficits into account makes for better measurement of income poverty: tracking both can reveal vulnerabilities that have so far remained hidden.

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[3] The problematic nature of poverty lines that neglect time requirements was first outlined by Claire Vickery several decades ago in a critique of the official poverty thresholds used in the United States. She demonstrated that the official thresholds implicitly assumed "that a household with income equal to the poverty standard must have a person working full time in the home to be nonpoor" (Vickery 1976: 30). We build here on the approach outlined by Vickery. Other important contributions include, inter alia, Harvey and Mukhopadhyay 2007; and, Goodin et al. 2005. For a comparison of different approaches to the issue, see Zacharias (2011). The discussion in the remainder of this paper is drawn from Antonopoulos, Masterson and Zacharias (2012).

The alternative measure we propose, the Levy Institute Measure of Time and Income Poverty (LIMTIP), is a two-dimensional measure of income and time poverty. Time poverty, especially when coupled with income poverty, imposes hardships on the adults who are time-poor as well as their dependents, particularly children, the elderly, and the ill. Income poverty alone does not convey enough useful information about their deprivation. Our measure can shed light on this phenomenon. In this brief, we contrast the picture of poverty that emerges between the LIMTIP and official measures in Argentina, Chile, and Mexico, and articulate the policy lessons those differences disclose.

In addition to reevaluating existing poverty, we also develop a microsimulation framework to assess the impact of actual or potential poverty-reduction policy strategies. In this brief, we investigate the poverty reduction implications—using official and LIMTIP poverty thresholds—of a hypothetical scenario in which every employable adult who is currently not employed 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 likelihood that each household would escape poverty in the event that every adult in the household were employed full time. This is especially relevant because much of the policy debate on inclusive growth centers around the growth-employment–poverty alleviation nexus. What the simulation reveals is that full-time employment, if not accompanied by other policy changes, proves to be insufficient as a poverty alleviation strategy. While some escape poverty, many others trade one form of deprivation (time-based) for another (income-based). Accordingly, we conclude with a discussion of the broader range of policies that are imperative for jointly addressing time and income poverty.

Methodology and data

We begin with an accounting identity: 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 (sleeping, eating, bathing), and everything else (leisure, volunteer work, and so on). We next define the *committed time* of the individual as the sum of (1) *required* weekly hours

of personal care, (2) *required* weekly hours of household production, and (3) the *actual* weekly hours the individual spends on income generation. An individual suffers from a time deficit if their committed time is greater than the number of hours in a week.

We assume that the threshold value for personal care is equal to the average weekly hours spent by adults on personal care activities. The threshold is set at the individual level and applies uniformly to every adult.

In contrast, the thresholds for household production hours 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. The logic behind setting the poverty-level time requirement at the household level is that we consider certain household-level characteristics (specifically, size and composition) as the crucial factors in shaping such requirements. We estimated thresholds for 12 types of households, differentiated by the number of adults and children in each. For each type of household, the threshold is equal to the average weekly hours of household production for households that possess two specific characteristics: (1) their incomes are near the official poverty line, so as to gauge what we described earlier as poverty-level time requirements for household production; and (2) they have at least one nonemployed adult present, so as to ensure that the threshold hours are derived from households that are not as likely to be constrained by exorbitant allocations of time to paid work activities.

Once the household-level time requirements are estimated, we need to determine the intrahousehold distribution; that is, the portion of the household-level requirements that falls upon each individual in the household. Common sense and research suggest that the individual's characteristics (e.g., labor force status and educational attainment) and relationship to other members of the household (e.g., husband or wife, parent or child) would greatly influence the time spent by them on household production activities. Accordingly, it is reasonable to suppose that, in general, the portions of the household-level time requirement that fall upon each individual in the household can differ.

Translating this reasonable supposition into empirical estimates is rather difficult, since the proportions in which the household-level time requirement would be split among the

members of the household cannot be directly observed. But what can be observed directly from the data is the actual total hours of household production performed by each individual member of the household. With this information at hand, whatever the revealed division of total time (among household members) turns out to be, we assumed that the same identical proportions would also apply to the division of the household-level threshold time requirements (among household members).

After the threshold values for personal care and household production were determined for each individual, we could calculate their time deficit or surplus because the weekly hours of income-generation activities (i.e., employment) were available in the data. Since the total physically available hours in a week (168 hours) and required hours of personal care are uniform across individuals, the differences in time deficits derive from the differences in required weekly hours of household production and actual weekly hours of employment.

The next step in our measurement framework is to derive the time deficit of the household. This step is essential to determine whether the household has a time deficit and, if so, the magnitude of the deficit. To obtain the household time deficit, we add up the time deficits of individuals in the household, ignoring possible time surpluses of the individuals in the same household. This procedure of obtaining the household time deficit is a consequence of our methodological choice of the individual—rather than the household—as the unit of analysis in our measurement of time deficits. On the other hand, if we were to add up the time surpluses and time deficits of individuals in the household, it would be equivalent to choosing the household as the unit of analysis in the measurement of time deficits.

Once we have the time deficits for each 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 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.

Our measure can identify the households and individuals that are in time deficit and/or in LIMTIP income poverty. A household is said to be 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) status for both individuals and households: (1) income-poor and time-poor; (2) income-poor and time-nonpoor; (3) income-nonpoor and time-poor; and, (4) income-nonpoor and time-nonpoor. With these thresholds and this classification we can analyze populations and subgroups based on the incidence and depth of both time and income poverty.

In order to produce the data set required to estimate the measure for each country, we first combine, using the method of statistical matching, two distinct surveys: a time use survey and a household income survey (see Masterson 2011 for a discussion of the matching procedure and quality evaluation). The table below provides information on the specific surveys used in this study.

Table 1 Surveys used in the study

Country	Income Survey	Time use Survey
Argentina	Encuesto Annual de Hogares (EAH), 2005	Encuesta de Uso del Tiempo de la Ciudad de Buenos Aires (UT), 2005
Chile	Encuesta Caracteristización 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

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 LIMTIP poverty line, was considerable in all three countries (Table 2). 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 2 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	6.2	107	11.1	47	4.9
Chile	165	10.9	271	17.8	106	6.9
Mexico	10,718	41.0	13,059	50.0	2,341	9.0

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 (Figure 1). The proportion of households (poor and nonpoor combined) with time deficits was 52, 61, and 65 percent, respectively, in Argentina, Chile, and Mexico.

Figure 1 LIMTIP classification of households by income and time poverty status (percent)
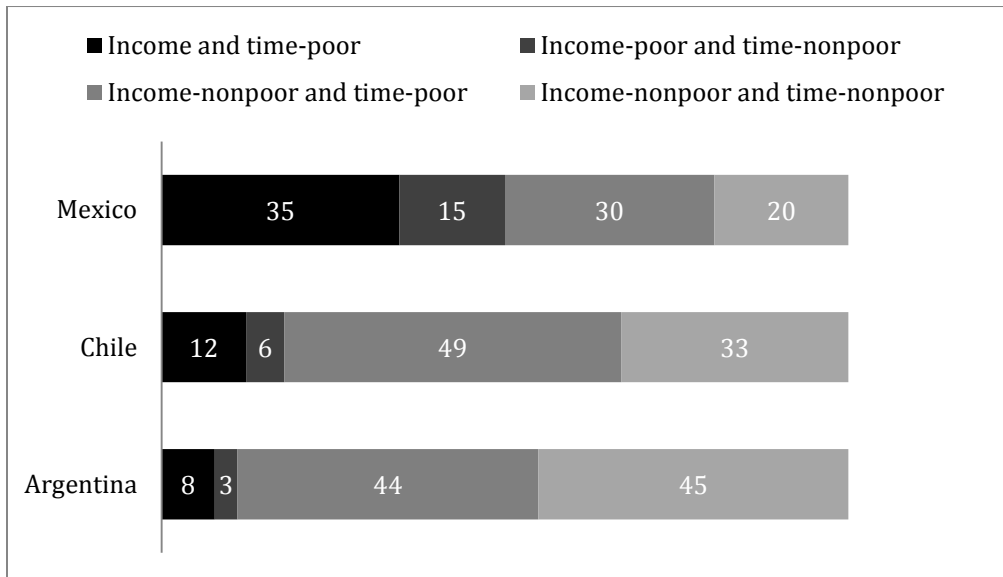
Interestingly enough, we also found that the incidence of time deficits was higher among the income-poor than the income-nonpoor households *in all three countries*. The gap was the widest in Argentina (70 versus 49 percent). It was somewhat smaller in Chile (69 versus 60 percent) and Mexico (69 versus 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. 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. 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 time deficits they face are indeed staggering: between 50 and 60 hours a week.

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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.

Time and Income Poverty of Individuals

Just as for households, we found that the LIMTIP poverty rate for individuals was higher than the official poverty rate. The share of hidden poor individuals in the total population is noteworthy (Table 3): 7 percent (183,000) in Buenos Aires, 7 percent (432,000) in Gran Santiago, and 9 percent (9.5 million) in Mexico. While there are clearly more women than men who were LIMTIP income-poor, this is mostly a reflection of demographics, because 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 LIMTIP poverty rate for children was more than twice that for adults, with 65,000 children in hidden poverty; adding this to the official poverty head count for children brings the total to 150,000 in LIMTIP income poverty. In Chile, the official and LIMTIP income poverty rates for children were 19 and 29 percent, respectively, corresponding to 9 and 12 percentage points above the rate for adults. In Mexico, the gap was even larger at 15 and 17 percentage points for official and LIMTIP income poverty, respectively, though the relative increase was smaller, given Mexico's high poverty rates.

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
	All	**9**	**16**	**7**
Chile	Men	9	15	6
	Women	11	18	7
	Children	19	29	10
	All	**13**	**20**	**8**
Mexico	Men	40	49	9
	Women	43	51	8
	Children	57	67	10
	All	**47**	**56**	**9**

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.

Addressing differences in time-poverty rates between men and women by employment and income (poverty) status sheds additional light on the composition of time poverty. In income-poor households, among women, most of the time poverty is that of employed women; still, 20 percent of the time-poor women in Argentina and Chile and 33 percent in Mexico were nonemployed, and hence in the grips of the housework time bind. This is

true of almost none of the nonemployed men. In income-poor households, men had lower time-poverty rates in Mexico (33 versus 38 percent for women) but slightly higher overall rates of time poverty than women in Argentina (41 versus 39 percent) and Chile (36 versus 34 percent). But all of the male time poverty in Chile and Mexico and most of it in Argentina is that of employed men: they are facing an employment time bind.

In income-nonpoor households, time-poverty rates were found to be 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, we found that employed men and women had similar rates of both official and LIMTIP income poverty. In Mexico, however, employed men had higher rates of official (and LIMTIP) income poverty than women: 40 (49) percent compared to 33 (45) percent. For the nonemployed, the situation varies across the three countries. In Argentina, nonemployed men had higher rates of official (and LIMTIP) income poverty than women: 15 (21) percent compared to 11 (15) percent. In Chile, the nonemployed men were slightly more likely to be income-poor: 18 (23) percent, compared to 16 (22) percent for women. And in Mexico, nonemployed women were more likely to be among the income-poor: 50 (56) percent, 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 constitute 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 mostly concentrated in the lowest two quintiles of the earnings distribution, and since women are at a disadvantage in earnings, the majority were 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 in 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, 26 percent of the LIMTIP poor are from higher earnings 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 down these numbers by sex, we found that women were overrepresented in the lower earnings quintiles in all three countries. Thus, 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.

A 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 who are currently underemployed or not employed become employed full time (25 or more hours per week). While gaining access to paid work increases the income of the newly employed individual and the 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 wages prove too meager, their deprivation will certainly not be addressed through employment alone. Some individuals may even become poor or fall deeper into poverty in this full-time employment scenario. For

example, if a member of an income-nonpoor household should become employed and receive wages below the wage of a domestic worker, time deficits could potentially prove to be poverty inducing (see, Masterson 2012 for a discussion of the simulation procedure).

Approximately 80 percent of the adults with part-time hours of employment or in nonemployment 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 reduce poverty, time deficits will pull quite strongly in the opposite direction. Furthermore, we found that the majority of potentially employable women (approximately 60–65 percent) were mothers living with children under 18 years of age; among the employable income-poor, this rate was as high as 66–68 percent. As we have seen in all three countries, households with children are more vulnerable to income and time poverty than households without children. This raises doubts about whether additional earnings can be sufficient for a substantial number of households to escape income poverty if interventions to redress time deficits are not forthcoming.

Table 4 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
LIMTIP minus official (hidden poor)	5	5	7	8	9	19

Our findings suggest that, in fact, job creation can lead to a very substantial reduction in the official poverty rate: by 83 percent in Buenos Aires, 72 percent in Gran Santiago, and 48 percent in Mexico, in our hypothetical scenario. 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 4). In fact, when we compare the before-and-after simulation results, 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 contained only nonemployable adults; that is, adults who were disabled, retired, in school, or in the military.[4] 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 would be officially income-poor, while the others would belong to the hidden poor.

The majority of households in our case studies were the hidden poor, thus suggesting that monitoring 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 women's labor force participation rate 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 well-being of households is improving.

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

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[4] We describe these individuals as "nonemployable" only because we did not assign them jobs in our simulation.

interventions. What works for one group may not work for others. As can be seen in Table 5, 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 5 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 highlights 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 programs may have

undesirable effects on the well-being of the children of the working poor. And since in our simulation most children in income-nonpoor families would also live with at least one time-poor adult, policies specifically aimed at easing the time crunch faced by poor working parents may attract the support of middle-class working parents as well (if the policies proposed are adequately universal).

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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'.

Conclusion: Policy Considerations

Our findings are based on incomes, taking into account prevailing levels of redistributive social transfer payments (including conditional and unconditional cash transfers) and household production requirements (given existing levels of public goods and social care provisioning). What we have found is that, under these circumstances, the poverty-inducing effect of the time deficits with which individuals and households contend 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, their depth of poverty is largely underestimated, and current levels of interventions, including cash transfers (or earned-income tax credits), 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 size does not fit all. 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 sizable 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.

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. First, 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 route uses unconditional cash transfers to close income gaps; but to be effective, transfer levels must be based on accurate calculations of the depth of poverty, such as those provided by LIMTIP. The second route 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 for effectively reducing long hours of paid work. This labor market transformation must be accompanied by a comprehensive approach to address the time deficits that the employed face. We will now discuss the ways in which different aspects of this sort of transformation addresses the needs of different groups among the poor.

We begin by considering the nonworking poor. As we have seen, full employment can produce a dramatic reduction in the incidence of income poverty among the nonworking poor, even without altering the current structure of earnings; efforts to steer economic development toward inclusive growth via policies that encourage employment generation are clearly central to poverty alleviation. This creates space for innovative and flexible "employment guarantee" policies. These policies are helpful when labor market conditions are slack, in that they effectively put in place a wage floor, regulated work hours, and a minimum benefits package while providing part-time employment. But policy cannot stop at getting people into jobs, because the employed also face both income and time poverty.

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 labor market faced by women and men. 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 a vigorous program to create decent jobs for all. Thus, women were the majority of the group that was the worst off among the employed according to our measure: members of income-poor households, the individually time-poor, and those belonging to the bottom of the earnings distribution. In addition, a large portion of poor, 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 the time deficits faced by the employable adults in income-poor households are likely to be less effective in terms of poverty alleviation.

Therefore, both poverty reduction and improvement of gender equity require an integrated policy agenda. The first policy area involves moving women gradually toward full-time paid work, which should be incorporated as a main goal of labor market transformation. However, in order to make employment a truly winning proposition for nonemployed women, as well as to improve the conditions of working-poor women, two further areas require just as much policy attention. To alleviate the time deficits faced by working women with children under 18, and by working parents in general, early childhood development and afterschool programs offering hours of operation that are appropriate for the work schedules of parents, and especially of women, must be made available. The co-responsibility of the state in care provisioning is central to enabling women to allocate more time to employment. Once that is achieved, leveling the playing field for women both inside and outside the home requires ameliorating gender pay disparities. Without attention to these areas, increased labor force participation among women will merely increase their time deficits, and likely erase any income gains made through employment.

The fact that in our study 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 policymakers' radar. While the poverty situation of own-account and casual workers is considerably bleaker when time deficits are taken into account, a substantial segment of regular (registered) workers were also found to be among the hidden poor and therefore similarly vulnerable, 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 that implied by the official poverty measure.

Public action to alleviate the burdens of time and income poverty can and should be based on alliances that cut across gender and class lines, since our estimates indicate that workers suffering from income and time deficits were divided nearly equally across the sexes and included workers from the middle quintile (and in Mexico, even higher quintiles) of the earnings distribution. 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 60–70 hours of employment weekly.

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 (e.g., 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 policy and public action cannot afford to wait for positive outcomes to magically "trickle down," nor 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.

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