The State of Jobs in Post-Conflict Areas of Sri Lanka

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Abstract

Although Sri Lanka has made significant progress in social and economic development over the past decade, the Northern and Eastern provinces that faced the brunt of the decades-long conflict remain disproportionately poor. To understand the labor market dimensions of poverty in these regions, this paper examines a range of job-related indicators, using data from 2011 to 2015. The overall labor force participation rate in these provinces is significantly lower than in the rest of the country. Much of the difference can be attributed to adult women, although the participation rates of youth and those with lower educational attainment are also low. The distribution of wages for male and female wage workers in these provinces is similar to that in other parts of the country. The pattern of low employment rates and comparable wages is consistent with a combination of low demand for labor and greater reluctance to work in these regions, which each depress employment but have counteracting effects on equilibrium wages. Skills are an issue, as adults in these provinces tend to score lower on literacy tests and have lower self-reported skills in reading, writing, and numeracy. Households in these provinces have less access to formal finance, which may also contribute to a lack of self-employment opportunities.

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The State of Jobs in Post-Conflict Areas of Sri Lanka

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1 Introduction

Sri Lanka has made significant progress in social and economic development over the past decade, as GDP growth has averaged over 5 percent a year since 2000. This progress is reflected in significant reductions in poverty, amid equitable growth. The national poverty headcount ratio declined from 22.7 to 6.7 percent between 2002 and 2012/13, much of which was driven by growth in labor income (Ceriani et al. 2015). However, progress has lagged in the Northern and Eastern Provinces, where an armed conflict between a Tamil dominated separatist group and the Sri Lankan security forces spanned over 30 years (Sarvananthan 2007). With the end of the conflict in 2009, the Sri Lankan government has made efforts towards reconstruction and reconciliation with the Northern and Eastern Provinces. With a new government elected in 2015, there is a renewed focus on the post-conflict development agenda as a means to economic revival, social re-integration, and ethnic reconciliation for these regions.

This paper reviews the state of labor force participation and jobs in the Northern and Eastern provinces of Sri Lanka. These provinces are compared with two other regions: Western Province, which consists of the capital city Colombo and is the most highly developed in Sri Lanka, and provinces other than Western (see Appendix Figure 1 for geographic definitions). Data for this exercise come from the following four sources: The 2011 through 2015 rounds of the Labor Force Survey (LFS), Household Income and Expenditures Survey (HIES) 2012/13, Skills Towards Employability & Productivity Survey (STEP) 2012, and the Enterprise Survey 2011. Differences between these sources are noted in Appendix Table 1. Although each of these data sets has its strengths and weaknesses, taken together they allow a rich examination of various aspects of labor outcomes in the Northern and Eastern provinces.

Low rates of labor force participation distinguish the Northern and Eastern provinces from the rest of the country. Most of the gap in labor force participation is due to extremely low rates of labor force participation of women, although youth and those with lower educational attainment also contribute to this gap. Low participation of women in the labor force is a national issue that has persisted for decades (Solotaroff et al. 2018, Gunewardena 2015), but it is especially pervasive in the Northern and Eastern provinces. Although female employment is very low in these provinces, wages among both men and women are similar to non-western provinces. We interpret this as reflecting a combination of weaker demand for labor in these provinces as well as social and cultural factors that discourage women from working, which would each reduce employment but would have opposite effects on equilibrium wages. Residents of these provinces (especially, women) score poorly on reading, writing, and numeracy skills, which may contribute to weaker demand for labor in these areas. Households in these provinces have less access to formal finance, which may also contribute to a lack of self-employment opportunities.

We contribute to the literature on employment in post-conflict situations by using nationally representative household surveys to conduct a comprehensive stocktaking of labor market outcomes in
Sri Lanka and a thorough analysis of female and youth labor force participation. Existing reviews of post-conflict areas (Blattman and Ralston 2015, Stewart 2015, Cramer 2015) barely mention studies that document labor market outcomes in conflict or post-conflict situations. The few studies that exist on this issue examine narrow, although important, aspects of the labor market. For example, Kondylis (2010) finds higher unemployment levels in the early 2000s among Bosnians who were displaced during the war in the country in the early 1990s. Similarly, Bozzoli et al. (2013) examine the relationship between exposure to conflict and self-employment in Colombia. This is the first study we are aware of that examines multiple, complementary aspects of the labor market in a post-conflict setting.

This paper is organized as follows. The next section summarizes a variety of job-related outcomes in the Northern and Eastern Provinces compared with the Western and other provinces. It identifies low rates of labor force participation of women in particular, as well as youth, as distinctive features of the labor markets in these provinces. The following section examines in detail which types of workers and jobs are missing in these regions as compared with the rest of the country. Section 4 examines selected potential demand and supply factors that may explain these low rates of labor force participation of women and youth. Section 5 provides a summary and concluding thoughts.

2 The structure of employment in the Northern and Eastern provinces

Demographically, the Northern and Eastern provinces are distinguished by their younger population and ethnic diversity. Individuals younger than 15 years represent 26.7% and 30.4% in the Northern and Eastern provinces, respectively, compared with 22.7% and 25.6% for the Western and other provinces, respectively (Figure 1a). Ethnic composition varies considerably between the North and the East (Figure 1b) and the rest of the country. Although three-quarters of Sri Lanka’s population is Sinhalese, the Northern province is predominantly Tamil (93%), whereas the Eastern province has many more Tamils (39%) and Moors (37%) than Sinhalese (23%).

1 According to Stewart (2015), “These studies also reveal a negative impact [of conflict] on private investment and exports... There is no comparable information about employment or unemployment, partly due to lack of data.”
The Northern and Eastern regions also have lower levels of economic well-being than the Sri Lanka average (Table 1). The GDP per capita of these regions is lower than that of the Western and all other provinces. The poverty headcount in 2012/13, according to the national definition, of these provinces is higher (10.9% and 11.0%) than in the country as a whole (6.7%). Poverty rates in some Divisional Secretariat Divisions, administrative areas smaller than districts, are estimated to exceed 30% (Doan and Deepawansa, 2015).

Table 1: GDP, poverty, and consumption levels in Sri Lanka

|                        | Northern Province | Eastern Province | Western Province | Other Provinces | Sri Lanka |
|------------------------|-------------------|------------------|------------------|----------------|-----------|
| GDP per capita 2014, '000 Rs. | 345               | 391              | 732              | 420            | 503       |
| Poverty rate           | 10.9%             | 11.0%            | 2.0%             | 8.1%           | 6.7%      |
| Per capita consumption, 25th percentile | 4,619             | 4,692            | 7,150            | 5,143          | 5,462     |
| Per capita consumption, 50th percentile | 6,325             | 6,255            | 10,542           | 7,211          | 7,805     |
| Per capita consumption, 75th percentile | 9,501             | 8,542            | 15,800           | 10,760         | 12,025    |

Notes: GDP data from Economic and Social Statistics of Sri Lanka 2016, Central Bank of Sri Lanka.

Poverty and per capita consumption numbers are computed from the HIES 2012/13.
Figure 2: LFP is lower in the Northern and Eastern provinces than in much of the rest of Sri Lanka

|                | Sri Lanka | Northern Province | Eastern Province | Western Province | Other Provinces |
|----------------|-----------|-------------------|------------------|------------------|-----------------|
| Employed       | 15%       | 14%               | 11%              | 16%              | 15%             |
| Unemployed     | 22%       | 27%               | 31%              | 23%              | 20%             |
| Student        | 5%        | 2%                | 3%               | 9%               | 9%              |
| Housewife      | 2%        | 2%                | 2%               | 3%               | 3%              |
| Others not working | 51%  | 44%               | 42%              | 50%              | 54%             |

Source: Labor Force Survey 2015 (Sample: 15+ year-olds)

Labor markets in the North and East are characterized by low rates of employment and labor force participation. Labor force participation is much lower in the Northern and Eastern provinces, at 46% and 44%, respectively, than the national average of 53% (Figure 2). These low rates of participation are driven by low employment rates in the Northern and Eastern provinces, rather than differences in unemployment. Furthermore, the low employment rates in the Northern and Eastern provinces have only slightly improved in recent years (Figure 3). The gradual upward trend in employment rate of the Northern province is smoother than the trend for the Eastern province.

Figure 3: Employment rate in the Northern and Eastern provinces is below the national average, but may be gradually catching up

Source: Labor Force Survey 2011-14 (Sample: 15+ year-olds)
Turning from participation to the nature of work, workers in the Northern and Eastern provinces on average participate in more productive sectors than workers in provinces other than Western. Compared to workers outside Western province, workers in the North and East are less likely to be in agriculture, which is the least productive sector. A common measure of productivity is value added per worker. According to data from the Central Bank of Sri Lanka, the value added per worker in 2014 was about SL Rp 40,000 in agriculture, compared with SL Rp 144,000 in industry and SL Rp 285,000 in services. The service sector is the largest employer in the Northern and Eastern provinces. The industrial sector employs less than a quarter of the population in the Northern and Eastern provinces, similar to provinces other than Western.

**Figure 4: Workers in the Northern and Eastern provinces are less likely to be in agriculture and in paid employment than provinces other than Western**

| Industry of employment | Type of employment |
|------------------------|--------------------|
| **a. Industry of employment** | **b. Type of employment** |
| Northern Province | Eastern Province | Western Province | Other Provinces | Northern Province | Eastern Province | Western Province | Other Provinces |
| Agriculture | Industry | Services | Paid employee/employer | Self-employed/non-paid employee |
| 47% | 48% | 61% | 38% | 64% | 41% | 29% | 46% |
| 20% | 23% | 33% | 39% | 6% | 23% | 39% | 33% |
| Source: Labor Force Survey 2015 (Sample: 15+ year olds) | Source: Labor Force Survey 2015 (Sample: 15+ year olds) |

Paid employment is more prevalent in the Northern and Eastern provinces than in the provinces other than Western, with 64% and 59% of employed individuals in the Northern and Eastern provinces reporting to be paid employees or employers, compared to 54% in provinces other than Western (Figure 4). Self-employment in the service sector includes jobs such as retail trade that do not provide regular income or are not as reliable as paid employment. The fact that these types of jobs are most common in the Northern and Eastern provinces suggests that although the level of employment in the Northern and Eastern provinces is poorer than the national average, those who are working in the North and East are generally working in more productive sectors of the economy than workers in other provinces besides Western. As discussed below in section 3, the occupations of workers in the Northern and Eastern provinces are largely similar to those in provinces other than Western. Roughly half and two-fifths of the working population in the Northern and Eastern provinces work in elementary occupations (such as farming or fishery); in provinces other than Western, the comparable share is about half. Finally, among wage workers, wage earnings in the Northern province are similar to the other provinces besides Western Province, with wage earnings in Eastern province slightly higher (Table 2). This pattern holds throughout the wage distribution.
Table 2: Median wage earnings in the Northern and Eastern provinces are slightly higher than in provinces other than Western

| Monthly wages (Rs.) | Northern Province | Eastern Province | Western Province | All other Provinces |
|---------------------|-------------------|------------------|------------------|--------------------|
| 10th percentile     | 4,929             | 6,074            | 9,355            | 4,830              |
| 25th percentile     | 9,858             | 10,124           | 15,572           | 9,585              |
| Median              | 15,773            | 17,818           | 24,297           | 15,457             |
| Mean                | 18,128            | 20,272           | 31,209           | 19,950             |
| 75th percentile     | 24,645            | 25,802           | 36,335           | 25,243             |
| 90th percentile     | 33,052            | 35,600           | 51,973           | 35,550             |

Source: Labor Force Survey 2015
Note: Wages are spatially deflated

The low employment rate in the North and East is largely explained by the low rates of female employment. Women in the Northern and Eastern provinces are just over half as likely to be employed (22% and 19%, respectively) as women in provinces other than Western (37%). If the employment rate of women in the Northern and Eastern provinces were the same as the national average, 132,000 more women would be employed in 2015, equal to about 2 percent of all workers. The employment rate of youth aged 15-24 in the Northern and Eastern provinces is also slightly lower than the national average, although the disparity is not as stark as that for the employment rate of women. An examination of the hours worked by individuals in the previous week, using data from LFS 2015, does not show significant differences between the Northern and Eastern provinces and the rest of the country. The average hours worked by individuals in the Northern and Eastern provinces is 41.67 hours, slightly lower than 43.80 hours for the Western province and higher than 39.47 hours in other provinces.

Figure 5: Employment rate in the Northern and Eastern provinces is low largely because of disparity in female employment

Source: Labor Force Survey 2015 (Sample: 15+ year olds)
Female employment rates in the Northern and Eastern provinces have made limited progress in the last 4 years. Figure 6a indicates that the disparity between female employment in the North and East and the Sri Lankan average has fallen roughly from 15 to 12 percentage points, with more rapid progress in Northern province. Meanwhile, for youth, there is a smaller geographic disparity in employment rates. In the North, the youth employment rate is similar to the national average, while the gap has largely remained constant in Eastern province (Figure 6b).

Figure 6: Employment rate for women and youth in the Northern and Eastern provinces vs. other parts of Sri Lanka (Source: LFS 2015)

To sum up, the most striking feature of labor markets in the Northern and East provinces is low employment rates, which mainly results from disproportionately low employment rates for women. In contrast, there is no evidence that these provinces have an unfavorable structure of employment. Agricultural jobs are less prevalent in these regions and a higher share of jobs are in the service sector. Workers in these provinces are more likely to be in wage employment and their wage earnings are no lower than in provinces other than Western. Given the importance of the gender employment gap, the next section probes in greater detail which types of women are not working in the North and East, compared to other regions, and which types of jobs are underrepresented among female workers.

3  Which workers and jobs are missing in the North and the East?

Here we further explore two demographic groups that appear to drive the employment gap between the Northern and Eastern provinces and the rest of the country: women and youth. Here we attempt to identify characteristics that may help us understand why these two demographic groups have lower employment rates. In Section 4, we will examine whether the level of these characteristics or their effect on employment rates is driving down employment rates for these groups.
3.1 Women

Because low female employment is a defining characteristic of the labor market in the North and East, we now examine which types of women are less likely to work in the North and East than in the rest of the country. Turning first to age, Figure 7 plots the probability of employment of women of different age groups. The employment rate of women (red lines) is lower than that of men (blue lines) for all age groups. The disparities between the North and East for women are pronounced, particularly for those who are at the middle of the age distribution. In contrast, the disparities among men are much smaller and not statistically significant.

Figure 7: Gender gap in the Northern and Eastern provinces is the largest in the middle of the age distribution (Source: LFS 2015)

Are women with higher or lower education abstaining from work in the North and East? Figure 8 shows that the employment gap between the North and East and other provinces excluding Western is highest for women with less than 12 years of education. The disparity changes little as education decreases below 12 years but shrinks sharply above 12 years of education. We do not see a similar disparity in employment rates for men as we do for women, suggesting that women with less than high-school education are driving some of the gap in employment rates between the Northern and Eastern provinces and provinces other than Western.
The Northern and Eastern provinces have a very different ethnic composition than the rest of the country. The population of Northern province is predominantly Tamil, whereas the Eastern province has much larger shares of Tamils and Moors. Figure 9a plots employment rates for women of different ethnic groups living in different parts of the country. The employment rate of Tamil women is much lower in the Northern and Eastern provinces compared to that of women living in the rest of Sri Lanka, outside Western province. Furthermore, the employment rate of others is also much lower. However, there are no similar differences for Moor or Sinhalese women. We also do not see substantial variation in employment rates for men across provinces (Figure 9b). This suggests that Tamil women may account for a substantial share of the participation gap between the North and East and other regions.

**Figure 9: Ethnic patterns of employment rates for women are similar in the Northern and Eastern provinces and other poor areas (Source: LFS 2015)**

- **a. Employment rate of women**

- **b. Employment rate of men**
Are the low rates of female labor force participation in the North and East larger for married women? Figure 10 suggests that the answer differs in the North and the East. In the East, married women are much less likely to work than in other parts of Sri Lanka. But in the North, there is a much smaller difference between married and never married women, as both are relatively unlikely to work. It is not clear what lies behind the low employment rates of married women in the East.

**Figure 10: Married women are less likely to participate in labor market than never-married women in the Northern and Eastern provinces (Source: LFS 2015)**

What kind of jobs are missing among women in the Northern and Eastern provinces? Fewer women in these provinces are employed in agriculture and industry, elementary occupations, and private sector jobs more generally. Table 3 describes the sector, occupation, and industry composition of jobs that men and women are engaged in different parts of Sri Lanka. The rows add up to 100 and the universe is all employed individuals.2 The second and fifth rows of Table 3 show that very few women in the Northern and Eastern provinces are employed in agriculture and industry. The services sector is the largest employer of women in the Northern and Eastern provinces, unlike provinces other than Western, where agriculture is. Because of the size of the service sector, a smaller share of women is employed in elementary occupations in the Northern and Eastern provinces than in provinces other than Western. Unlike men, women in the North and East are more likely to be employed in the public sector than in the private sector. In other words, women in the Northern and Eastern provinces are passing up elementary occupations and private sector jobs, leaving most female workers in public sector jobs in the service economy.

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2 Appendix Table 2 also includes a row of not working adults to facilitate comparisons among all working-age individuals.
Table 3: Industry, occupation, and sector of workers by gender (Percent)

| Industry          | Northern Province | Eastern Province | Western Province | Other provinces |
|-------------------|-------------------|-------------------|------------------|-----------------|
|                   | Men   | Women | Men   | Women | Men   | Women | Men   | Women |
| Industry self-employed | 3.0   | 6.1   | 5.0   | 17.1  | 5.3   | 12.2  | 5.4   | 8.3   |
| Industry wage-employed | 17.7  | 6.0   | 16.4  | 7.8   | 23.8  | 22.9  | 17.2  | 13.1  |
| Service self-employed | 12.3  | 9.1   | 14.1  | 19.8  | 19.7  | 14.6  | 14.4  | 10.7  |
| Service wage-employed | 30.3  | 45.3  | 29.9  | 37.5  | 39.0  | 41.2  | 24.5  | 23.3  |
| Agriculture self-employed | 21.1  | 19.4  | 18.8  | 15.1  | 3.5   | 4.6   | 24.9  | 30.0  |
| Agriculture wage-employed | 11.4  | 13.5  | 13.7  | 2.7   | 2.1   | 2.5   | 10.3  | 13.8  |
| Other sectors     | 4.2   | 0.7   | 2.1   | 0.0   | 6.6   | 2.1   | 3.2   | 0.8   |
| **Total**         | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |

| Occupation        | Northern Province | Eastern Province | Western Province | Other provinces |
|-------------------|-------------------|-------------------|------------------|-----------------|
|                   | Men   | Women | Men   | Women | Men   | Women | Men   | Women |
| Professional      | 14.8  | 32.4  | 12.3  | 29.4  | 25.6  | 31.5  | 12.9  | 17.6  |
| Clerks/sales      | 12.3  | 14.8  | 18.1  | 21.1  | 17.6  | 20.6  | 12.6  | 13.3  |
| Craft/machine workers | 20.2  | 12.1  | 25.9  | 24.2  | 33.4  | 23.6  | 25.7  | 17.6  |
| Elementary        | 52.0  | 40.3  | 42.8  | 24.8  | 22.7  | 24.2  | 48.1  | 51.3  |
| Others            | 0.7   | 0.4   | 1.0   | 0.5   | 0.7   | 0.1   | 0.7   | 0.2   |
| **Total**         | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |

| Sector            | Northern Province | Eastern Province | Western Province | Other provinces |
|-------------------|-------------------|-------------------|------------------|-----------------|
|                   | Men   | Women | Men   | Women | Men   | Women | Men   | Women |
| Public sector     | 34.3  | 64.5  | 40.0  | 61.6  | 20.0  | 28.8  | 31.0  | 40.3  |
| Private sector    | 65.8  | 35.6  | 60.0  | 38.4  | 80.0  | 71.2  | 69.0  | 59.7  |
| **Total**         | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |

Source: Labor Force Survey 2015 (Sample: Employed adults 15 years and older)

Table 4 shows the geographic disparity in the wages of wage workers by the type of industry. In Industrial sectors and agriculture, wages in the North and East are slightly less than those in other provinces. Meanwhile, wages in the private sector and in elementary occupations, where women are also greatly underrepresented, are also moderately lower than in other provinces. Wages in the public sector are broadly similar across the provinces, although we see much more variation in public sector wages. The variation in private sector jobs is driven by the fact that distribution of employment across industries differs geographically as do their wages.\(^3\) Overall, we see that wage disparities are much smaller than employment disparities between the North and the East provinces and provinces other than Western.

\(^3\) Median private sector wages in other provinces are marginally higher (about SL Rs 10,000 vs. SL Rs 8,000) for women. But women in the private sector in the North and the East are less likely to work in agriculture (with lower wages) compared to women in provinces other than Western. These two counteracting factors result in average wages that are approximately equal between North and the East and provinces other than Western.
Table 4: Women in the North and East earn lower wages in manufacturing and in the private sector

| Industry          | Northern | Eastern | Western | Other provinces |
|-------------------|----------|---------|---------|-----------------|
| Manufacturing     | 10,218   | 11,908  | 17,129  | 12,634          |
| Service           | 28,921   | 28,346  | 25,986  | 27,795          |
| Agriculture       | 7,393    | 10,124  | 10,395  | 9,087           |
| Sector            |          |         |         |                 |
| Public sector     | 31,166   | 33,000  | 34,198  | 29,973          |
| Private sector    | 10,218   | 10,124  | 17,129  | 11,593          |
| Occupation        |          |         |         |                 |
| Professional      | 32,019   | 32,250  | 34,302  | 31,906          |
| Clerks/sales      | 18,730   | 24,809  | 20,789  | 17,572          |
| Craft/machine     | 10,218   | 9,924   | 16,112  | 12,655          |
| workers           |          |         |         |                 |
| Elementary        | 7,437    | 10,000  | 13,305  | 9,661           |
| Other occupations | 24,789   | 39,000  | 26,321  | 16,423          |
| All wage workers  | 18,592   | 20,247  | 20,763  | 14,018          |

Source: Labor Force Survey 2015 (Sample: 15+ year olds)

The finding that wages of women and men in the Northern and Eastern provinces are not necessarily lower than the rest of the country may result from both supply and demand factors working to limit employment opportunities for women in the North and East. In other words, women may both be more reluctant to work in these areas, and simultaneously in less demand by employers, either because they are less productive or actively discriminated against. The resulting shift inward in the supply curve and shift downward in the demand curve would greatly depress employment in certain sectors, while the wage effects work in opposite directions and may largely negate each other.

In conclusion, residents of the Northern and Eastern provinces are less likely to work than those in the rest of the country, particularly if they are women in the middle of the age distribution, have less than 12 years of education, or are Tamil. Women in these provinces are also underrepresented in agricultural and industrial jobs, and in the private sector.

3.2 Youth

So far, the analysis has focused on gender differences in employment between the North, East, and regions other than Western Province. While low employment rates for women explain most of the low employment rates in these regions, the employment rates for youth in the Northern and Eastern provinces have also stagnated at rates below the national average. Figure 6b plots the trends in employment rate of youth of ages 15-24 years for 2011-15. The employment rate for youth in the Northern and Eastern provinces is either at or below the national average for the entire period. The employment rate of youth in the Eastern province is the lowest, consistently below that of youth in the Northern province. Since the Northern and Eastern provinces have larger shares of youth population than the rest of the country, it is worthwhile investigating the sources of low youth employment in these areas.
Low rates of youth employment are largely due to high rates of school attendance in the Northern and Eastern provinces and early marriage in the Eastern Province. Figure 11 shows the prevalence of different primary activities among youth in different regions. In the North and the East, a slightly higher proportion of youth report being in school than in areas outside Western province. In the Eastern province, the most commonly cited reason for not being in the labor market is marriage. This may reflect cultural differences between the Eastern province and the rest of Sri Lanka; in particular, the fact that this region has a large presence of Muslims (Sarvananathan 2015). Neither youth unemployment or other reasons for being unemployed seem particularly high in the North and East.

**Figure 11: Stated reason for youth not being employed**

Youth in the Northern and Eastern provinces are less likely to be self-employed than youth in provinces other than Western. Figures 12a and 12b describe the sectors and occupations that youth living in different parts of Sri Lanka are employed in. The lower share of self-employed youth in the North and East may reflect a greater preference for wage employment, or the greater difficulties in obtaining access to finance. The sectoral distribution of youth employment does not show much difference between provinces other than Western, where youth are much less likely to be in agriculture than in the rest of the country due to the urban nature of the Western province. The sectoral differences were more significant for women in the Northern and Eastern provinces, where they were much less likely to be in agriculture than women in provinces other than Western, than for youth.
Explaining employment gaps: Supply or demand?

To better understand the causes of low employment rates for women and youth in the Northern and Eastern provinces, we next attempt to shed light on whether demand or supply factors are driving these differences. Factors that affect the demand for labor include variables, such as education or experience, that determine the value of the marginal product of labor. Factors that affect the supply of labor include variables that affect the reservation wage of women. These could include factors such as fertility, availability of child care, husband’s income, transfer income, substitutes for women’s time (such as household appliances), and preferences for work. Since the data available to us allow us to better examine demand-side factors, we leave close analysis of supply-side issues for future research.

4.1 Women

We begin this section by decomposing gender differences in employment rates into variables that determine employment rates. This will allow us to examine if gender differences in employment rates vary between the Northern and Eastern provinces and the rest of the country because of differences in the prevalence of characteristics or in their relationship with the probability of an individual being employed. We then examine some of these factors to shed light on the geographic differences that we observe.

4.1.1 Decomposing gender differences in employment rates

Female labor force participation in the North and East can be low either because women have different characteristics or because the returns to these characteristics are different. To shed light on this question, we consider an Oaxaca-Blinder decomposition, which can be used to decompose the source of differences in an outcome variable (such as the labor force participation rate) between groups of workers (Oaxaca 1973, Blinder 1973). In other words, it indicates what portion of the disparity in an outcome variable is due to differences in levels of observed characteristics, as opposed to returns to those characteristics.
Table 5 presents the results. The outcome variable is whether an individual is employed. Groups 1 and 2 are men and women, respectively, so the analysis explains gender differences in employment rates. The columns represent the regions for which this analysis is conducted; they allow comparison of the contribution of different variables by region. The average employment rate of men and women is 70.3% and 22.1%, respectively, in the Northern province, implying a gender difference of 48.1 percentage points. This female employment penalty in the North can be decomposed: negative 2.1 percentage points is due to endowments, or observed traits, and 49.8 percentage points is due to different returns to those traits. A tiny fraction of the differential (0.4 percentage points) is due to the interaction between the observed traits and their returns.

Table 5: Geographic differences in the levels of observed characteristics are not a factor (Outcome variable: Individual is employed)

|                  | Northern province | Eastern province | Western province | Other provinces |
|------------------|-------------------|-----------------|-----------------|-----------------|
| Men              | 0.703***          | 0.694***        | 0.709***        | 0.738***        |
| Women            | 0.221***          | 0.186***        | 0.311***        | 0.366***        |
| Total difference | 0.481***          | 0.508***        | 0.398***        | 0.372***        |
| Difference due to endowments | -0.021*** | -0.013*** | 0.004 | -0.001 |
| Difference due to coefficients | 0.498*** | 0.542*** | 0.395*** | 0.376*** |
| Difference due to interactions | 0.004 | -0.022** | -0.001 | -0.003 |

Endowments
- Age: -0.050***
- Age, squared: 0.044***
- Urban: -0.000
- Household size: -0.003**
- Married: 0.000
- Divorced or separated: -0.004**
- Widowed: -0.009*
- Years of education: 0.000
- Ethnicity: Sri Lankan Tamil: 0.001
- Ethnicity: Indian Tamil: 0.000
- Ethnicity: Sri Lankan Moor: -0.001

Coefficients
- Age: 1.432***
- Age, squared: -0.839***
- Urban: -0.006
- Household size: 0.068**
- Married: 0.093***
- Divorced or separated: -0.006
- Widowed: 0.007
- Years of education: -0.164***
- Ethnicity: Sri Lankan Tamil: 0.149*
- Ethnicity: Indian Tamil: 0.001*
- Ethnicity: Sri Lankan Moor: 0.007
- Constant: -0.243**

Interactions
The primary finding from this Oaxaca-Blinder decomposition is that observable differences in the levels of characteristics explain only a tiny fraction of the difference between the employment rate of men and women. In all regions, difference in the “returns” to those characteristics explains over 100 percent of the gender differences. This rules out some obvious explanations for the gender employment gaps, such as the prevalence of particular ethnic groups or differences in educational attainment.

Looking more closely at the estimated returns, the relationship between employment and education differs greatly for men and women, which is why the returns to education explain a large portion of the gender gap in employment in all regions. The same is true for age and being Tamil, and in the East, the returns to marriage. The estimated returns to these characteristics, in terms of explaining the gender gap in employment, differ significantly between regions. This decomposition analysis is restricted to a relatively small set of explanatory variables that are available in the labor force survey and is therefore only suggestive of key factors. We further investigate some of these factors in the next two sections.

4.1.2 Cognitive Skills

Lower productivity could stem from a shortage of skills among women in the Northern and Eastern provinces. A main source of information on cognitive skills in Sri Lanka is the Skills Towards Employment and Productivity (STEP) surveys, which asked skills-related questions in a variety of countries. Respondents are asked to read passages and answer simple questions about them to test their reading comprehension and are also asked to report how frequently they use reading, writing, and numeracy skills.

Analysis from the 2012 Sri Lanka survey suggests that women in the Northern and Eastern provinces have poorer reading skills, measured objectively, as well as lower self-reported writing and numeracy skills than in the rest of the country. Figures 13-15 present a comparison of self-reported and objectively measured skill levels in reading of men and women in Northern, Eastern, Western, and other provinces. The bars in Figure 13a represent the percentage of respondents that report never using a specific skill in the previous
12 months. We see that the Eastern province has the highest percentage of women that report never using reading skills. Although this percentage is also the same for men in the Eastern province, so there is no distinct geographic pattern in the gender gap in reading skills. We also see that fewer women in the Northern and Eastern provinces passed the objectively measured test of core reading skills than in the rest of the country (Figure 13b). Figures 13a and 13b do not allow us to examine how much these reading skills contribute to the gender gap in employment rates. However, it does suggest that lower skills may be hurting the productivity of women, thus hurting their chances of being employed in jobs that require those skills.4

Figure 13: Women in the Eastern Province have poorer self-reported and objectively-measured reading skills (Source: STEP Survey 2012)

Analysis based on data from the STEP Survey 2012 suggests that women in the Northern and Eastern provinces also have poorer self-reported writing skills. The bars represent the percentage of working-age respondents that report to have never used writing skills in the previous year. We see that much more women in the Northern and Eastern provinces (70% and 65%) report to have never used writing skills in the previous 12 months, compared to 42% and 55% of women in the Western and other provinces, respectively. Writing skills are often critical in many occupations and not having these skills may be an automatic barrier to entry into these occupations for a large percentage of women in the Northern and Eastern provinces. Although we see similar geographic differences in writing skills for men, the differences are not as stark as they are for women.

4 We may need to take these results with some caution since there is only a moderate correlation (0.3) between self-reported reading skills and an objective measure of reading skills, based on a test administered to respondents. Unfortunately, these objective measures are not available for writing or numeracy skills in the STEP survey.
In addition to poorer reading and writing skills, women in the Northern and Eastern provinces also report poorer numeracy skills. In the Northern and Eastern provinces, 13% and 17% of women report to have never used numeracy skills in the previous 12 months, compared with 14% in the rest of the country. Instead of a significant geographic gap, we see a large gender gap in numeracy skills. Much more women than men in the Northern and Eastern provinces report never having used numeracy skills in the previous 12 months. Taken together, a lack of reading, writing, and numeracy skills may be hurting the employment possibilities of women in the Northern and Eastern provinces.

Another valuable perspective on skills shortages comes from employer surveys. Many employers in the Northern and Eastern provinces see skills shortage as a major constraint, as many report difficulty finding applicants to fill higher-skilled vacancies. Figure 14 reports results from the Enterprise Survey 2012 for Sri Lanka, which surveyed employers about various aspects of their business. When asked if finding an adequately educated workforce was a constraint they faced, employers in the Northern and Eastern provinces (25% and 59%) were the most likely of all provinces to respond affirmatively. Moreover, employers in the Northern and Eastern provinces report difficulty finding applicants to fill higher-skilled vacancies. All firms in the Northern and Eastern provinces report encountering difficulty finding
candidates that had the required skills in higher-skilled occupations such as managers and service workers. We do not see such a difference for lower-skilled occupations such as elementary occupations, craftsmen, and machine operators. These findings are also consistent with findings reported in Figures 13-15 that a lack of skilled workers is a distinguishing factor of labor markets in the Northern and Eastern provinces. One issue that Figure 14 does speak to is the gender difference in the skills shortage.

**Figure 16: Firms state inadequately educated workforce as a major or severe constraint**

|                      | Northern & Eastern | Western | Other provinces |
|----------------------|--------------------|---------|-----------------|
| Southern             | 4%                 | 5%      | 6%              |
| North-Western        | 6%                 | 6%      | 8%              |
| Sabaragamuwa        | 8%                 | 13%     | 22%             |
| North-Central       | 25%                | 22%     | 25%             |
| Central              | 59%                | 59%     | 59%             |

a. Firms state inadequately educated workforce as a major or severe constraint

b. Problems encountered by firms during hiring: Applicants lacked required skills (% of firms)

In sum, evidence from a skills survey and an employer’s survey suggests that skills are a greater constraint to productivity in the North and East than elsewhere in the country. However, we need to take these results with caution since the correlation between self-reported and objective reading skills is fairly low and more evidence is necessary to understand this relationship better.

### 4.1.3 Access to Formal Finance

Another factor that could explain lower employment rates in the Northern and Eastern provinces is difficulty in accessing formal finance. The low levels of self-employment observed in the service and industrial sectors in these provinces could stem from higher indebtedness. Table 7 summarizes the nature of debts taken by households in different parts of Sri Lanka. The three sections of this table describe the percentage of households that report debt, the share of total debt from different sources, and debt as a share of annual household consumption.

The first panel of Table 6 suggests that most of the debt taken by households tends to be from informal sources such as pawnshops and retail shops, although there are no significant differences between the different regions. About two out of three of all Sri Lankan households have loans from some source. Among indebted households, pawning of assets and debt from retail shops represent more than half of all debts of indebted households in the Northern and Eastern provinces. These are also the largest sources
of debt for households in the rest of Sri Lanka. What is of greater concern is that the loans from pawnshops and moneylenders are a much larger share of annual household consumption of households in the Northern and Eastern provinces than in the rest of the country. Loans from these informal sources often have higher interest rates than formal sources of finance such as banks or finance companies and could place a serious burden on household finances. Total household debt in the Northern and Eastern provinces is 56% and 47% of the annual household consumption, respectively, much higher than 36% in provinces other than these and Western provinces.5

Table 6: Debt is a larger share of household consumption in the Northern and Eastern provinces and tends to be informal

| Source of Debt | Northern Province | Eastern Province | Western Province | Other Provinces |
|----------------|-------------------|------------------|-----------------|-----------------|
| Banks          | 28                | 24               | 26              | 31              |
| Finance companies | 5                | 8                | 10              | 8               |
| Money lenders  | 10                | 16               | 8               | 6               |
| Pawning of assets | 36               | 41               | 44              | 39              |
| Retail shops   | 17                | 24               | 9               | 17              |
| Any kind of debt | 63               | 69               | 69              | 67              |

Indebted households only:

| Source of Debt | Northern Province | Eastern Province | Western Province | Other Provinces |
|----------------|-------------------|------------------|-----------------|-----------------|
| Banks          | 30                | 23               | 24              | 30              |
| Finance companies | 4                | 5                | 9               | 8               |
| Money lenders  | 8                 | 11               | 5               | 4               |
| Pawning of assets | 43               | 44               | 43              | 39              |
| Retail shops   | 8                 | 10               | 4               | 9               |
| Other (credit card, employer, instalment) | 7                | 7                | 15              | 10              |
| All household debt | **100** | **100** | **100** | **100** |

Debt as a share of annual household consumption (%)

| Source of Debt | Northern Province | Eastern Province | Western Province | Other Provinces |
|----------------|-------------------|------------------|-----------------|-----------------|
| Banks          | 16                | 11               | 14              | 12              |
| Finance companies | 4                | 6                | 7               | 5               |
| Money lenders  | 6                 | 5                | 2               | 1               |
| Pawning of assets | 28               | 22               | 16              | 13              |
| Retail shops   | 0                 | 1                | 0               | 0               |
| Other (credit card, employer, instalment) | 2                | 2                | 4               | 5               |
| All household debt | **56** | **47** | **43** | **36** |

Source: HIES 2012/13

Employers in the Northern and Eastern provinces also cite access to finance as the major constraint they face. Figure 17 presents a comparison of the fraction of firms that cite different factors as the biggest constraint in the Northern and Eastern provinces as well as in all of Sri Lanka. The most common constraint in the Northern and Eastern provinces is access to finance, which is cited by 32% and 47% of all firms in the Northern and Eastern Provinces. For all of Sri Lanka, the practices of competitors in the informal sector is cited as the most common constraint that firms face. Other common concern of firms in the Northern and Eastern provinces are related to government policies such as labor regulations, business licensing and

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5 We find a very weak correlation between employment status and indebtedness, although indebted individuals are slightly more likely to be employed (50%) than those that are not indebted (45%).

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In short, the investigation of factors underlying the low level of employment rates in the North and East revealed several suggestive findings. First, the source of the gender employment gap is not different endowments in easily observable characteristics such as age, ethnicity, or educational attainment. Second, since gender employment disparities are greater than wage disparities, both demand and supply factors are likely contributing to the gender gap in employment. Third, women in the North and East are particularly disadvantaged with respect to skills, which is likely to adversely affect their employment prospects. Finally, access to formal finance also appears to be an issue in the North and East, which could also impinge upon employment opportunities.

4.1.4 Supply factors

Supply factors that could affect the labor force participation rate could include variables such as fertility rates, availability of child care, husband’s income, transfer income, substitutes for women’s time (such as household appliances), and preferences for work. Although the data sets available to us do not allow us to address all these issues, we examine some of them to the extent possible. In the most basic labor supply model, an increase in non-labor income reduces labor supply (assuming leisure is a normal good) – resulting in a negative income effect (Borjas 2008). An increase in own wage, on the other hand, increases labor supply by making leisure more costly – resulting in a positive substitution effect. In Table 7, we present estimates of a model of the determinants of labor force participation of women to examine the
effect of non-labor income such as husband’s income. We fully recognize the presence of endogeneity in this relationship and thus present these as only descriptive correlations.

Table 7: Determinants of female labor force participation

| Dependent variable=> | (1) Spouse of male head is employed | (2) Female member is employed |
|----------------------|------------------------------------|-----------------------------|
| β s.e.               | β s.e.                             |
| Monthly wage of male head | -0.026* (-1.93) | -0.040*** (-3.16) |
| Province (Base: Provinces other than Northern, Eastern, Western) | | |
| Northern Province   | -1.607*** (-4.43) | -1.274*** (-4.12) |
| Eastern Province    | -1.605*** (-4.52) | -1.408*** (-4.60) |
| Western Province    | -0.038 (-0.16) | 0.062 (0.32) |
| Province X Monthly wage of male head | | |
| Northern Province X Monthly wage of male head | 0.144*** (3.38) | 0.112*** (3.08) |
| Eastern Province X Monthly wage of male head | 0.130*** (3.35) | 0.115*** (3.41) |
| Western Province X Monthly wage of male head | -0.012 (-0.48) | -0.014 (-0.69) |
| Age                 | 0.149*** (10.95) | 0.168*** (16.58) |
| Age, squared        | -0.002*** (-11.30) | -0.002*** (-16.07) |
| Urban               | -0.115** (-2.11) | -0.042 (-0.92) |
| Household size      | -0.026* (-1.77) | -0.014 (-1.21) |
| Years of education  | 0.043*** (6.96) | 0.046*** (8.56) |
| Share of children <5 years in household | -0.736*** (-4.39) | -0.758*** (-5.41) |
| Ethnicity (Base: Sinhala) | | |
| Sri Lankan Tamil    | 0.131 (1.61) | 0.043 (0.62) |
| Moor                | -0.465*** (-5.75) | -0.542*** (-7.73) |
| Others              | 0.784*** (9.46) | 0.628*** (9.78) |
| Relationship to head (Base: Spouse) | | |
| Child               | 0.285 (1.53) | |
| Parent              | -0.294 (-0.53) | |
| Other relative      | -0.183 (-0.58) | |
| Relationship to head X Monthly wage of male head | | |
| Child X Monthly wage of male head | -0.012 (-0.58) | |
| Parent X Monthly wage of male head | 0.022 (0.35) | |
| Other relative X Monthly wage of male head | 0.021 (0.59) | |
| Constant            | -3.289*** (-10.68) | -3.617*** (-15.94) |

N                              | 6,317                               | 9,731

* p < 0.10, ** p < 0.05, *** p < 0.01. Note: Estimation sample includes working age female spouses of head in (1) and working age females in (2). Coefficients are from a probit regression. The monthly wage of male head is in logged form. Dataset: Labor Force Survey 2015.

The dependent variable in specification (1) is whether the spouse of a male head of household is employed. Specification (2) includes all working-age women in the household. We see that the coefficient on the (logged) monthly wage of the male head is negative and statistically significant, consistent with a negative income effect as predicted by economic theory. The interaction of the province on the monthly wage of the male head suggests that women’s employment is much more responsive to the wage of the
male head in the Northern and Eastern provinces compared with provinces other than Western. This is suggestive of the fact that women’s likelihood of employment in these provinces may be determined by the demographic and economic circumstances of their families rather than by their own opportunities. In addition to this, we observe that households in the Northern and Eastern provinces have slightly higher ratios of children younger than 15 years in the household than the rest of Sri Lanka (24.2% vs. 20.8%), suggesting that higher fertility may also explain the lower labor force participation of women in these provinces. Participation of women in the labor market in these provinces may be further reduced due to the social stigma against women working outside the home, which unfortunately cannot be directly measured with available data.

4.2 Youth

We next implement the Oaxaca-Blinder decomposition of the labor gap in LFP between youth and adults to better understand what explains the difference in youth employment. The outcome variable of the Oaxaca-Blinder decomposition presented in Table 8 is whether an individual is employed. Groups 1 and 2 are youth (15-24-year-olds) and adults (25+ year-olds), respectively. The columns represent the sub-populations for which this analysis is conducted separately; they allow comparison of the contribution of different variables by province.

|                     | Northern province | Eastern province | Western province | Other provinces |
|---------------------|-------------------|------------------|------------------|-----------------|
| Men                 | 0.496***          | 0.492***         | 0.542***         | 0.596***        |
| Women               | 0.263***          | 0.216***         | 0.294***         | 0.261***        |
| Total difference    | 0.233***          | 0.276***         | 0.248***         | 0.335***        |
| Difference due to endowments | 0.105***      | 0.146***         | 0.083***         | 0.105***        |
| Difference due to coefficients | 0.176***    | 0.274***         | 0.206***         | 0.247***        |
| Difference due to interactions | -0.048       | -1.144***        | -0.041*          | -0.018          |

Endowments

| Endowments         | Northern province | Eastern province | Western province | Other provinces |
|--------------------|-------------------|------------------|------------------|-----------------|
| Urban              | 0.000             | 0.001            | -0.000           | 0.000           |
| Household size     | 0.000             | 0.000            | 0.001            | 0.002           |
| Married            | 0.050             | 0.060**          | 0.083***         | 0.072**         |
| Divorced or separated | 0.004           | 0.001            | 0.004            | 0.004**         |
| Years of education | 0.049***          | 0.083***         | -0.007           | 0.026***        |
| Ethnicity: Sri Lankan Tamil | 0.000           | -0.000           | 0.000            | -0.000          |
| Ethnicity: Indian Tamil | -0.000         | -0.002           | -0.001           | -0.000          |
| Ethnicity: Sri Lankan Moor | 0.001         | 0.002            | 0.002*           | 0.001**         |

Coefficients

| Coefficients       | Northern province | Eastern province | Western province | Other provinces |
|--------------------|-------------------|------------------|------------------|-----------------|
| Urban              | -0.003            | -0.018**         | -0.019**         | -0.005***       |
| Household size     | 0.064             | 0.091**          | 0.042            | -0.004          |

6 The fact that the coefficient of husband’s wages is more positive in the North and East compared with the rest of the country suggests either different preferences of women in those regions or omitted variables in the regression model.
We see that the differentials in the employment rate can be explained partly due to the observed differences in the levels of the explanatory variables, their returns, and an interaction of these two. We find that observable differences in the levels of characteristics explain a larger share of the difference between the employment rate youth and adults than was the case for the gender differential. We see that the returns to education is the largest contributor to the youth-adult gap in employment rate in the Northern and Eastern provinces. In addition to this, we see that the lower education levels of youth in the Northern and Eastern provinces partly explains its lower employment compared to that of adults in these provinces.

4.3 What does not explain low employment rates in the Northern and Eastern provinces?

The above section identified factors that may contribute to low levels of female employment in the North and East. A variety of seemingly plausible explanations for low employment rates in the region, particularly for women, are less consistent with the evidence. The first of these is greater rates of disability. Figure 16a presents rates of disability across different provinces. The proxy for disability used here is the response to the question on the reason why an individual is not in the labor force. Although this is not an ideal measure for the prevalence of disability, this is the best that the data in the labor force survey allow. Although we see some areas of the country with higher rates of disability than others (such as Jaffna or the central parts of the country), it is not obvious that disability rates are much higher in the Northern and Eastern provinces than in the rest of the country. Disability rates are notably higher for men than for women, making it unlikely that disability is responsible for the significant gender gap in employment. The story is similar for the prevalence of mental illness (Figure 16b). Although there is variation in the prevalence of mental illness within Sri Lanka, it is not obvious that it is higher in the
Northern and Eastern province (Department of Census and Statistics 2016). It is, however, notable that both disability and mental illness are high in Jaffna district. One concern with these findings is that they rely on self-reported data on mental health, which may be unreliable. Jayasuriya et al. (2016) conduct a more rigorous study and find that the prevalence of depression and anxiety is greater in Sri Lanka’s post-conflict areas, among older, married, and individuals that spent time in camps for internally displaced people. World Bank (2017) also reports a high prevalence of mental health issues in Northern and Eastern provinces, based on discussions with community groups. This issue deserves more study and may help design future government policies and programmatic interventions in these provinces.

Figure 18: No large difference in disability rates and prevalence of mental illness across provinces

A second potential explanation for the low labor market participation in the Northern and Eastern provinces is that they are more reliant on remittances than the rest of the country. Appendix Table 6 and Figure 17 summarize the access to remittances using data from the HIES 2012/13, and show that this is unlikely to be a major factor. The first table suggests that households in Northern and Eastern provinces are more likely to have received remittances from abroad than households in other parts of the country. However, the second table suggests that remittances as a share of total household consumption are not significantly different between different provinces. Remittances as a share of total income, however, are slightly higher in the Northern and Eastern provinces. Figure 17 suggests that although there is some variation within the districts in Sri Lanka in the fraction of households receiving remittances, it is not obvious that the Northern and Eastern provinces are most likely to do so.
Although we do not find evidence in HIES 2012/13 that households in the Northern and Easter provinces were more likely to have received remittances, we find that those individuals in households that received remittances were much less likely to work than in other provinces (Appendix Figure 2). We see that individuals that live in households that reported receiving remittances were only 36% and 33% likely to be employed in the Northern and Eastern provinces, much lower than 45% in provinces other than Western.

Figure 19: Percent of households receiving remittances (Source: HIES 2012/13)

A third possible explanation for low rates of labor force participation in the North and the East is educational disruption due to the war. Although education levels are lower in these provinces, it is not obvious how much of this is due to the war. Figure 18 examines this hypothesis by plotting the probability of completing lower secondary education against the year in which the individual was expected to do so. The probability of completing lower secondary school has increased over time, particularly in provinces other than the Northern, Eastern, and Western. However, the gap in attainment noticeably increased around 1970, predating the war. There is a similar pattern for primary school, but not for higher secondary school. Furthermore, there are no major gender differences in the North and East education penalty. These results suggest that the armed conflict may have prevented the North and East from catching up to attainment levels elsewhere but cannot explain gender differences in employment rates.

Appendix Figure 3 compares the secondary school completion rates for the war cohort - individuals that were expected to have completed secondary school education during the conflict between 1980 and 2009 – and the older cohort. We see that the pre-war cohort had substantially lower school completion rates in the Northern and Western provinces than the rest of the country, suggesting that one reason behind the low educational attainment in these provinces may be a result of the differences that existed prior to the conflict.
5 Conclusions

Although Sri Lanka has made significant progress in social and economic development over the past decade, this masks several pockets of the country where progress is lagging, such as the Northern and Eastern provinces (Doan and Deepawansa, 2015, Newhouse et al. 2016). This note takes stock of employment outcomes in the Northern and Eastern provinces of Sri Lanka by using data from various sources, including household surveys and surveys of employers, in order to tease out possible explanations for why poverty rates remain high in this part of the country.

This study finds that lower rates of labor force participation distinguish the Northern and Eastern provinces from the rest of the country. Much of the gap in labor force participation is due to very low rates for women, although low rates of participation of the youth and those with lower education also contribute to this gap. Despite the progress Sri Lanka has made on various human development outcomes, such as education and fertility rates, it still has a one of the largest gender gaps in labor force participation in the world, and that gap has remained stubbornly high despite strong economic growth nationwide (World Bank 2016; Gunewardena 2010, 2015; Sinha 2012).

This study suggests that the depressed rates of labor force participation in the Northern and Eastern Provinces are not driven by systematic differences in observed worker characteristics, but instead reflect both weak labor demand and a greater propensity for women not to work. Women in these provinces score poorly on reading, literacy, and numeracy skills, which likely contributes to low rates of female labor force participation. Households in these provinces have less access to formal finance, which may also contribute to a lack of self-employment opportunities. What we are unable to understand fully is the role of factors that could affect women’s decision to participate in the labor market, such as fertility rates,
availability of childcare, responsiveness to husband’s income, transfer income, substitutes for women’s time such as household appliances (Goldin, 2006), and preferences for work. These factors deserve attention in future research given that our analysis does not yield solid evidence on the factors behind the geographic differences in the gender gap in employment rate.

A relevant comparison to Sri Lanka is the case of Nepal, which experienced a civil conflict during 1996-2006. Menon and Rodgers (2016) find that the labor force participation of women in conflict-affected areas of Nepal, in fact, increased as a result of the conflict. The authors view this as a survival strategy in the face of conflict, which displaced many working men. Although their study seemingly contradicts our study, these two studies are not quite comparable. While Menon and Rodgers (2006) examine the evolution of the employment likelihood of women during the conflict, our study examines this for the period after the conflict ended. Menon and Rodgers (2006) raise the possibility that post-conflict areas of Nepal may have experienced a drop in the employment rates of women after the war as the conflict-displaced men returned home. It is plausible that the North and East also experienced a similar increase in employment rates as a result of the conflict, although existing data do not allow us to test this hypothesis. The fact that employment rates of women in the North the East are extremely low also makes it unlikely that this was the case.

The low rates of labor force participation in the North and East, especially among women, is a complex issue that is not amenable to quick policy fixes. The evidence highlights remaining geographic disparities in skills and access to finance, since these are key constraints that both households and firms report facing. However, these in turn stem from the quality of education and the legacy of conflict and poverty in the area. Therefore, public policy can usefully spur development in these regions the same way it does in other parts of the country: by making or facilitating the investments in human capital and physical infrastructure that will increase productivity and better connect workers to more productive jobs.
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Appendix

Appendix Figure 1: Province definitions

Appendix Figure 2: Remittances and labor force participation rate

Source: Household Income and Expenditure Survey 2012/13
Appendix Figure 3: War cohort and the probability of completing secondary school

![Graph showing the probability of completing secondary school by war cohort and province.]

Source: Source: Labor Force Survey 2015

Appendix Table 1: Data used in the study

|                           | Labor Force Survey (LFS) | Household Income and Expenditure Survey (HIES) | Skills Towards Employability & Productivity Survey (STEP) | Enterprise Survey |
|---------------------------|--------------------------|-----------------------------------------------|----------------------------------------------------------|-------------------|
| **Survey date**           | 2011-15                  | 2012/13                                       | 2012                                                     | 2011              |
| **Sample size**           | 14-22,000 HH             | 20,000 HH                                     | 3,000 persons; 624 firms                                 | 610 firms         |
| **Strengths**             | Detailed questions on labor, annual data | Multi-topic survey, contains data on consumption and income | Questions on personality, behavior, and preferences | Questions on various obstacles firms face |
| **Weaknesses**            | No information on poverty or non-labor income | Can't examine trends | Relatively few households sampled in N&E (N=385) | Survey is relatively old. Small sample for N&E (N=54). |
| **Data used in this study** | 2011-15                  | Individual + employer survey                  | Yes                                                      | Yes               |
**Appendix Table 2: Industry, occupation, and sector of workers by gender (Percent)**

| Industry                     | Northern Province Men | Northern Province Women | Eastern Province Men | Eastern Province Women | Western Province Men | Western Province Women | Other provinces Men | Other provinces Women |
|------------------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|------------------------|---------------------|-----------------------|
| Industry self-employed       | 2.1                   | 1.4                     | 3.5                  | 3.2                    | 3.8                  | 3.9                    | 4.0                 | 3.1                   |
| Industry wage-employed       | 12.4                  | 1.3                     | 11.4                 | 1.5                    | 16.9                 | 7.3                    | 12.7                | 4.8                   |
| Service self-employed        | 8.7                   | 2.0                     | 9.8                  | 3.7                    | 14.0                 | 4.6                    | 10.7                | 3.9                   |
| Service wage-employed        | 21.3                  | 10.0                    | 20.8                 | 7.0                    | 27.7                 | 13.0                   | 18.1                | 8.5                   |
| Agriculture self-employed    | 14.8                  | 4.3                     | 13.1                 | 2.8                    | 2.5                  | 1.5                    | 18.4                | 11.0                  |
| Agriculture wage-employed    | 8.0                   | 3.0                     | 9.5                  | 0.5                    | 1.5                  | 0.8                    | 7.6                 | 5.0                   |
| Other sectors                | 3.0                   | 0.2                     | 1.4                  | 0.0                    | 4.7                  | 0.7                    | 2.4                 | 0.3                   |
| Not working adults           | 29.8                  | 77.8                    | 30.6                 | 81.3                   | 29.0                 | 68.3                   | 26.2                | 63.4                  |
| **Total**                    | 100                   | 100                     | 100                  | 100                    | 100                  | 100                    | 100                 | 100                   |

| Occupation                   |                       |                         |                      |                        |                      |                        |                     |                       |
|------------------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|------------------------|---------------------|-----------------------|
| Professional                 | 10.4                  | 7.2                     | 8.5                  | 5.5                    | 18.2                 | 10.0                   | 9.5                 | 6.4                   |
| Clerks/sales                 | 8.6                   | 3.3                     | 12.6                 | 3.9                    | 12.5                 | 6.5                    | 9.3                 | 4.9                   |
| Craft/machine workers        | 14.2                  | 2.7                     | 18.0                 | 4.5                    | 23.7                 | 7.5                    | 18.9                | 6.5                   |
| Elementary                   | 36.5                  | 8.9                     | 29.7                 | 4.6                    | 16.1                 | 7.7                    | 35.5                | 18.8                  |
| Others                       | 0.5                   | 0.1                     | 0.7                  | 0.1                    | 0.5                  | 0.0                    | 0.5                 | 0.1                   |
| Not working adults           | 29.8                  | 77.8                    | 30.6                 | 81.3                   | 29.0                 | 68.3                   | 26.2                | 63.4                  |
| **Total**                    | 100                   | 100                     | 100                  | 100                    | 100                  | 100                    | 100                 | 100                   |

| Sector                       |                       |                         |                      |                        |                      |                        |                     |                       |
|------------------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|------------------------|---------------------|-----------------------|
| Public sector                | 16.5                  | 8.5                     | 19.7                 | 5.4                    | 11.9                 | 6.7                    | 16.6                | 8.4                   |
| Private sector               | 31.7                  | 4.7                     | 29.5                 | 3.4                    | 47.5                 | 16.4                   | 37.0                | 12.5                  |
| Not working adults           | 51.7                  | 86.8                    | 50.8                 | 91.2                   | 40.6                 | 76.9                   | 46.4                | 79.1                  |
| **Total**                    | 100                   | 100                     | 100                  | 100                    | 100                  | 100                    | 100                 | 100                   |

**Appendix Table 3: Socio-economic differences between the Northern and Eastern provinces and rest of the country**

|                     | Sri Lanka | Northern province | Eastern province | Western province | Other provinces |
|---------------------|-----------|-------------------|------------------|------------------|-----------------|
| Age profile (%)     |           |                   |                  |                  |                 |
| <15 years           | 25.2      | 26.7              | 30.4             | 22.7             | 25.6            |
| 15-24 years         | 15.6      | 18.4              | 18.1             | 15.5             | 15.1            |
| 25-34 years         | 15.7      | 15.6              | 15.9             | 16.3             | 15.4            |
| 35-44 years         | 13.6      | 11.9              | 12.8             | 14.4             | 13.5            |
| 45-54 years         | 12.3      | 10.7              | 10.9             | 12.5             | 12.5            |
| 55-64 years         | 9.7       | 9.4               | 7.2              | 10.0             | 10.0            |
| 65+ years           | 7.9       | 7.2               | 4.7              | 8.7              | 7.9             |
| Ethnicity (%)       |           |                   |                  |                  |                 |
| Sinhalese           | 74.9      | 3.0               | 23.2             | 84.2             | 83.5            |
| Tamil (Sri Lankan)  | 11.1      | 93.1              | 39.2             | 5.8              | 2.8             |
| Moor                | 9.3       | 3.1               | 36.9             | 7.9              | 6.9             |
| Other               | 4.7       | 0.8               | 0.7              | 2.1              | 6.8             |
| Poverty headcount (%) | 6.7       | 10.9              | 11.0             | 2.0              | 8.1             |
| Urban (%)           | 16.5      | 14.9              | 23.2             | 37.5             | 5.7             |
| Household size      | 4.4       | 4.8               | 4.4              | 4.5              | 4.3             |
| Dependency ratio (%) | 35.4      | 34.9              | 36.5             | 34.2             | 35.8            |
| Population, millions (2011) | 20.4   | 1.1               | 1.6              | 5.9              | 11.9            |
| Population share (%) | 100.0     | 5.2               | 7.6              | 28.7             | 58.4            |

Sources: Labor Force Survey 2015, Household Income and Expenditure Survey 2012/13, Census of Population and Housing 2012
## Appendix Table 4: Socio-economic differences between within the Northern and Eastern provinces

|                    | Northern Province | Eastern Province |
|--------------------|-------------------|------------------|
|                    | Jaffna  | Mannar | Vavuniya | Mullaitivu Kilinochchi Batticaloa Ampara Trincomalee | Jaffna  | Mannar | Vavuniya | Mullaitivu Kilinochchi Batticaloa Ampara Trincomalee |
| **Age profile (% of individuals)** |                  |                  |          |                                              |                  |                  |          |                                              |
| <15 years          | 24.5    | 28.9   | 27.3     | 30.5    | 32.5    | 30.7   | 29.4   | 31.5    | 22.6 |
| 15-24 years        | 18.3    | 17.9   | 19.5     | 18.0    | 17.7    | 18.9   | 17.5   | 18.2    | 18.5 |
| 25-34 years        | 15.0    | 16.0   | 16.4     | 16.8    | 16.4    | 15.6   | 16.1   | 15.9    | 16.2 |
| 35-44 years        | 11.4    | 13.2   | 12.7     | 12.3    | 11.8    | 12.4   | 13.2   | 12.4    | 12.6 |
| 45-54 years        | 11.0    | 11.3   | 11.1     | 9.7     | 9.0     | 10.6   | 11.5   | 10.4    | 10.7 |
| 55-64 years        | 10.6    | 8.2    | 7.9      | 8.0     | 7.6     | 7.1    | 7.4    | 7.0     | 7.4 |
| 65+ years          | 9.2     | 4.6    | 5.1      | 4.8     | 5.0     | 4.5    | 4.9    | 4.5     | 4.8 |
| **Ethnicity (%)**  |         |        |          |          |                                        |                  |                  |          |                  |
| Sinhalese          | 0.4     | 2.3    | 10.0     | 9.7     | 1.2     | 1.3    | 38.9   | 26.7    | 26.8 |
| Tamil (Sri Lankan) | 98.9    | 80.4   | 82.0     | 85.8    | 97.3    | 72.3   | 17.3   | 30.7    | 30.8 |
| Moor               | 0.4     | 16.5   | 6.8      | 2.0     | 0.6     | 25.4   | 43.4   | 41.8    | 43.7 |
| Other              | 0.4     | 0.7    | 1.2      | 2.6     | 0.9     | 0.9    | 0.4    | 0.7     | 0.8 |
| **Poverty headcount (%)** | 8.3     | 20.1   | 3.4      | 28.8    | 12.7    | 19.4   | 5.4    | 9.0     | 2.2 |
| Urban (%)          | 20.8    | 12.4   | 0.0      | 0.0     | 15.2    | 26.7   | 23.0   | 18.5    | 16.6 |
| Household size     | 4.9     | 4.6    | 4.3      | 4.5     | 4.8     | 4.4    | 4.4    | 4.7     | 4.3 |
| Dependency ratio (%) | 34.1    | 35.8   | 33.3     | 40.1    | 33.5    | 37.7   | 35.9   | 36.0    | 35.8 |
| Population, mn (2011) | 0.6    | 0.1    | 0.2      | 0.1     | 0.1     | 0.5    | 0.6    | 0.4     | 0.4 |
| Population share (%) | 2.9     | 0.5    | 0.8      | 0.5     | 0.6     | 2.6    | 3.2    | 1.9     | 1.9 |

Sources: Labor Force Survey 2015, Household Income and Expenditure Survey 2012/13, Census of Population and Housing 2012

## Appendix Table 5: Socio-economic differences between within the Northern and Eastern provinces

|                    | Northern Province | Eastern Province |
|--------------------|-------------------|------------------|
|                    | Jaffna  | Mannar | Vavuniya | Mullaitivu Kilinochchi Batticaloa Ampara Trincomalee | Jaffna  | Mannar | Vavuniya | Mullaitivu Kilinochchi Batticaloa Ampara Trincomalee |
| **Labor market status (%)** |                  |                  |          |                                              |                  |                  |          |                                              |
| Employed           | 41.5    | 52.8   | 46.9     | 43.7    | 45.1    | 42.4   | 41.1   | 44.6    | 2.9 |
| Unemployed         | 2.5     | 2.5    | 1.4      | 2.4     | 2.8     | 2.0    | 3.0    | 2.0     | 2.0 |
| Not in labor force | 56.0    | 44.7   | 51.7     | 53.9    | 52.1    | 55.6   | 55.8   | 53.4    | 3.0 |
| **Reason why individual is not in labor force (%)** |                  |                  |          |                                              |                  |                  |          |                                              |
| Student            | 20.7    | 26.0   | 29.8     | 23.4    | 23.5    | 22.9   | 22.5   | 24.6    | 2.6 |
| Housewife          | 49.5    | 46.4   | 47.6     | 59.1    | 58.8    | 58.1   | 57.1   | 52.7    | 2.7 |
| Other              | 29.8    | 27.6   | 22.7     | 17.5    | 17.7    | 18.9   | 20.4   | 22.7    | 2.7 |
| **Type of employment (%)** |                  |                  |          |                                              |                  |                  |          |                                              |
| Paid employee      | 63.9    | 58.4   | 55.1     | 58.6    | 56.2    | 56.1   | 55.5   | 61.3    | 2.3 |
| Non-paid employee  | 2.9     | 3.5    | 2.3      | 1.5     | 5.2     | 2.0    | 6.0    | 2.8     | 2.0 |
| Employer           | 3.9     | 3.8    | 0.0      | 3.6     | 1.1     | 2.4    | 1.6    | 0.5     | 0.5 |
| Self-employed      | 29.4    | 34.3   | 42.6     | 36.3    | 37.4    | 39.6   | 36.9   | 35.4    | 2.9 |
| **Sector of employment (%)** |                  |                  |          |                                              |                  |                  |          |                                              |
| Agriculture        | 30.2    | 28.4   | 45.5     | 35.2    | 45.9    | 26.5   | 32.5   | 26.8    | 2.8 |
| Industry           | 21.0    | 19.4   | 21.0     | 21.2    | 8.8     | 28.2   | 20.7   | 19.3    | 1.9 |
| Services           | 48.9    | 52.2   | 33.5     | 43.5    | 45.2    | 45.3   | 46.8   | 53.9    | 2.3 |

Sources: Labor Force Survey 2015, Household Income and Expenditure Survey 2012/13, Census of Population and Housing 2012
Appendix Table 6: Access to remittances

Percent of households that received remittances:

| Province            | Domestic | Foreign | Total |
|---------------------|----------|---------|-------|
| Northern province   | 6%       | 13%     | 18%   |
| Eastern province    | 5%       | 11%     | 16%   |
| Western province    | 4%       | 8%      | 12%   |
| Other provinces     | 12%      | 6%      | 17%   |

Remittances as a share of household consumption/income:

| Province            | Share of income | Share of consumption |
|---------------------|-----------------|-----------------------|
| Northern province   | 29%             | 14%                   |
| Eastern province    | 36%             | 19%                   |
| Western province    | 24%             | 17%                   |
| Other provinces     | 26%             | 17%                   |

Source: Household Income and Expenditure Survey 2012/13