

Low-skilled labor shortages contribute to forced labor — Evidence from Myanmar and Thailand

Joann F. de Zegher^{a,c,1}, Boyu Liu^{b,1,2}, Lisa Rende Taylor^c, and Mark Taylor^c

^aOperations Management, Sloan School of Management, Massachusetts Institute of Technology, Cambridge, MA 02142; ^bInstitute for Data, Systems, and Society, Massachusetts Institute of Technology, Cambridge, MA 02142; ^cIssara Institute, Bangkok 10110, TH

This manuscript was compiled on June 3, 2021

1 **Over 25 million people are victims of forced labor globally; the vast**
2 **majority are low-skilled migrant workers who migrated from a differ-**
3 **ent country or region. Evidence so far indicates that much of labor**
4 **exploitation has roots in the recruitment process. This motivates**
5 **the question of whether there are characteristics common to labor**
6 **recruitment that can serve as reliable indicators of forced labor risk**
7 **in the workplace. Leveraging unique data sets from the Myanmar**
8 **Government and the Issara Institute on weekly demand for Burmese**
9 **migrant workers in Thailand by Thai companies, and worker voice**
10 **hot-line data from 2018-2020, we find that shortages in low-skilled la-**
11 **bor significantly increase migrant worker abuse. Using an Instrumen-**
12 **tal Variable (IV) approach, we find that an increase of one standard**
13 **deviation in low-skilled labor shortage leads to a 34.5% or higher in-**
14 **crease in worker-reported labor abuse in the weeks that follow, with**
15 **significant heterogeneity across provinces. Importantly, shocks of**
16 **such magnitude occur about 10% of the time. We find a visible corre-**
17 **lation between the magnitude of the effect and the frequency of large**
18 **shortages across provinces; the effect dampens as labor shortages**
19 **happen less frequently, suggesting that labor markets that are less**
20 **stressed are less prone to abuse when being stressed. Overall, this**
21 **research suggests that operational inefficiencies in the low-skilled la-**
22 **bor market that contribute to labor shortages play an important role**
23 **in determining labor abuse outcomes, and that reducing these inef-**
24 **ficiencies in the labor recruitment process could help mitigate labor**
25 **abuse.**

forced labor | informal labor supply chains | human trafficking

1 *“A half-dozen other captains acknowledged that forced*
2 *labor is common. It is unavoidable, they argue, given*
3 *the country’s demand for laborers. Short-handed at*
4 *the 11th hour, captains sometimes take desperate*
5 *measures. “They just snatch people,” one captain*
6 *explained.”* – Ian Urbina, New York Times, Sea Slaves:
7 The Human Misery That Feeds Pets and Livestock,
8 2015

9 **T**he International Labor Organization (ILO) esti-
10 mates that over 25 million people are currently
11 victims of forced labor, an extreme form of exploita-
12 tion akin to modern slavery. Forced labor is defined
13 as work or services that a person performs under the
14 threat of a penalty and for which the person has not
15 offered himself or herself voluntarily.

16 The vast majority of forced labor victims are low-
17 skilled migrant workers that migrated from a different
18 country or region, to escape poverty and lack of job
19 opportunities in their home regions/countries. Their
20 price elasticity of labor supply is close to infinite;
21 even if the working conditions are sometimes poor in
22 the destination region, they likely still are (or appear

better than the alternatives at home. 23

24 Concurrently, rising living standards and employment
25 expectations in regions and countries with growing
26 economies and large demand for low-skilled labor lead
27 to local shortages of labor in destination regions. As
28 a result, documented incidents of forced labor occur
29 in countries with relatively high per capita wealth
30 compared to the country of origin of the victims
31 (Chantavanich et al. 2016). For example, Tickler et
32 al. (2018) find that the economic disparity (*e.g.* as
33 measured by GDP per capita) between labor demand
34 and labor supply countries creates fertile ground for
35 modern slavery.

36 Since there are no online job markets for low-skilled
37 labor in destination countries, search costs are large
38 and both employers and jobseekers (prospective mi-
39 grant workers) rely on informal brokers, who typically
40 burden recruitment costs onto prospective migrants.
41 The difficulties in efficiently recruiting low-skilled
42 workers locally is well documented globally, across
43 a wide range of industries and countries, and this
44 burdening of costs and debts onto migrants can trans-
45 form the labor recruitment process into a process of
46 human trafficking (INSERT REFERENCE). Indeed,
47 evidence so far indicates that much of the labor ex-
48 ploitation in the workplace has roots in the recruit-
49 ment process and the practice of deception, extortion,

Significance Statement

Over 25 million people are victims of forced labor globally. Research and interventions to date have mostly focused on identifying and remediating harms to workers after they have occurred, *e.g.* through audits, inspections, and criminal justice. Here, we study whether operational inefficiencies in labor markets and labor recruitment systems influence forced labor risk experienced in the workplace. Leveraging unique datasets from 2018-2020, we find that shocks in low-skilled labor shortages significantly increase incidence of worker-reported labor abuse. We also provide evidence that labor markets that are less stressed are less prone to abuse when being stressed. This research sheds new light on the role of pro-active market-based interventions to reduce forced labor risk before workers experience harm in the workplace.

J.d.Z., B.L., L.R.T and M.T. designed research; J.d.Z. and B.L. performed research; and J.d.Z., B.L., and L.R.T wrote the paper.

The authors declare no conflict of interest.

¹To whom correspondence should be addressed. E-mail: jfz@mit.edu

50 and debt burdening often used therein. Difficulties
51 in meeting demand for labor might further increase
52 the use of deception in recruitment, a key means of
53 human trafficking (UNOHCHR 2000).

54 In this paper, we examine how mismatches between
55 demand for low-skilled labor and supply of local labor
56 contribute to instances of forced labor and human
57 trafficking. In a sense, we study a “snatching effect:”
58 does human trafficking and labor abuse peak when it
59 is difficult for companies to meet their labor demand?
60 This is an important hypothesis to examine because
61 it means that even if a company’s typical labor con-
62 ditions might be good, they can become poor when
63 the company faces large pressures on its labor force
64 and is unable to efficiently find relief due to strug-
65 gles in overcoming labor shortages. Additionally, if
66 a company’s typical labor conditions are poor, they
67 can become extremely poor when the commercial
68 and labor pressures on the company are high.

69 In examining this hypothesis, this paper sheds new
70 light on the role of pro-active market-based interven-
71 tions to reduce forced labor outcomes. Previous lit-
72 erature has primarily stressed how increasing factory
73 productivity, *e.g.* through lean manufacturing, has a
74 significant impact on forced labor outcomes and vice
75 versa (see, *e.g.*, Distelhorst et al. 2017, Moon et al.
76 2020, Stanford GSB 2015). Case-based research has
77 also shown that unpredictable variability in purchase
78 orders leads to labor abuse, as companies scramble
79 to keep up (*e.g.*, Locke 2013). Evidence from the
80 field indicates that production targets can at times
81 become unrealistic for the existing workforce, leading
82 to forced and unpaid overtime, or unfair punishments
83 for not reaching production targets.

84 In examining the role of labor markets in forced labor,
85 and how market dynamics might influence the labor
86 recruitment process, we hope to inform market-based
87 interventions that can identify and reduce forced la-
88 bor risk before workers experience any harm in the
89 workplace. This is a critical practical contribution
90 to the ethical sourcing and anti-trafficking communi-
91 ties, which have traditionally have focused more on
92 identifying and remediating harms to workers after
93 they have occurred.

94 We recognize that other drivers of labor abuse exist
95 outside the labor shortage pathway we test here, for
96 the population of migrant workers in Thailand and
97 globally – *e.g.*, physically abusive line supervisors
98 whose behavior is unchanged by economic conditions
99 (reference this paper). Indeed, our aim is not to
100 develop a predictive model of labor abuse; we only
101 seek to test the hypothesis that market forces are a
102 significant contributor.

103 We focus our analyses on Burmese migrant workers
104 in Thailand. Economic migration from Myanmar to
105 Thailand is the largest in the ASEAN region (World
106 Bank 2017), and the prevalence of forced labor in
107 Thailand is significant. Across Thailand, it was esti-
108 mated that in 2018 approximately 610,000 people are
109 living in modern slavery, an increase from 425,500

110 people in 2016 (Walk Free Foundation 2019).

111 We leverage a unique data set from the Issara Insti-
112 tute, in collaboration with the Myanmar Government,
113 on weekly demand for Burmese migrant workers by
114 companies in Thailand and combine this with worker
115 voice data from the Issara Institute from 2018-2020
116 (see 3). The worker voice channels operated by Is-
117 sara are the ones most prevalently used by migrant
118 workers in Thailand. To remedy potential endogene-
119 ity concerns, we use an Instrumental Variable (IV)
120 approach with the (lagged) Thai Baht-Chinese Yuan
121 exchange rate as our instrument. To account for het-
122 erogeneity in demand across provinces in Thailand
123 and capture that a given absolute amount of labor
124 shortage does not represent the same level of “shock”
125 across different provinces and weeks, we transform
126 the demand data into standardized *shocks in labor*
127 *shortage* (see equation 1). To account for an un-
128 even penetration of the worker voice channels across
129 different provinces and the overall distribution of
130 Burmese migrant workers across Thai provinces, we
131 use a relative (%) *measure of worker-reported labor*
132 *abuse*; specifically, we use the percentage of worker
133 voice calls that report clear exploitative situations
134 relative to the total number of worker voice calls in
135 a province and week (see equation 2).

136 We find that a positive shock of one standard devia-
137 tion in low-skilled labor shortage leads to a significant
138 increase in worker-reported labor abuse of at least
139 34.5% in the weeks that follow such a peak in la-
140 bor shortage. Importantly, such a shock in weekly
141 low-skilled labor shortage occurs for nearly 10% of
142 the weeks in our dataset. We also find significant
143 heterogeneity across provinces and we find a strong
144 correlation between the magnitude of the effect of a
145 shock and the frequency of shocks across provinces;
146 the effect dampens as shocks in low-skilled labor
147 shortages occur less frequently. This suggests that
148 labor markets that are less stressed are less prone to
149 abuse when being stressed.

150 The evidence therefore suggests a critical role for
151 interventions that reduce labor search and matching
152 frictions in markets for low-skilled labor, in order
153 to reduce pressures on existing work forces during
154 unexpected peak periods and therefore reduce the
155 risk of labor abuse in the workplace.

156 1. Results

157 Table 1 reports our main result, using ordinary least
158 squares (OLS) regression and the instrumental vari-
159 able (IV) approach with the shocks in labor shortage
160 lagged by four weeks relative to when worker-reported
161 labor abuse occurs (*i.e.* $x = 4$ in equations 3, 4 and
162 5), using three different regression specifications. Ta-
163 ble 2 shows further results for lower or higher lags of
164 shocks in labor shortage relative to worker-reported
165 labor abuse.

166 We find a consistent effect: for every lag x from
167 two to four weeks, the exchange rate in the previous