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## New Skills, New Jobs: Return Migration, Skill Transfers, and Business Formation in Mexico

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### Abstract

Numerous studies have documented a high propensity for self-employment and business formation among return migrants relative to non-migrants. The literature points to the importance of remitted savings, migration duration, and number and types of jobs abroad for business formation upon return. Implicit in this scholarship is the assumption that migrants acquire not only financial capital, but also human capital, which expands their opportunities upon return. Empirical work has demonstrated how the transfer of formal human capital, such as language skills and professional credentials, influences the mobility pathways of professional return migrants. More recent research has also found that the transfer of informal human capital, such as social and technical skills learned on the job, shape the mobility pathways of return migrants with little schooling. Absent from this scholarship, however, are studies that directly test the relationship between the transfer of informal human capital and the odds of business formation among return migrants. In this paper, we address this gap. Using a multidimensional skills variable, which includes social, technical, and English language competences, we measure and test the relationship between skill acquisition and transfer and business formation among return migrants. Drawing on findings from a survey of 200 return migrants and 200 non-migrants in Mexico, we show that return migrants who successfully acquire and transfer new skills across the migratory circuit often leverage their new knowledge to launch businesses. Our findings have wide implications for how social scientists conceptualize and measure human capital formation across the migratory circuit.

### Keywords

human capital; labor markets; return migration; self-employment; skills

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Hernando was born and raised in Heredia, a small agricultural community in central Mexico with an established history of emigration to the United States. He left school at the age of eight to help his father farm their land; ten years later he landed an entry-level position at a nearby General Motors auto plant where he went through a six-month training program.

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Despite the auto-making skills that Hernando learned on the production line, he grew tired of the repetitive nature of the work and, seeking adventure, decided to migrate to the United States, to Georgia where he had friends laboring in carpet manufacturing. However, after tiring of this similarly repetitive work, he found an apprentice position with a master carpenter. Through observation and informal on-the-job learning, Hernando became a skilled craftsman. After four years of working under the supervision of his mentor, Hernando had saved enough money to return home and launch his own woodworking business. Today he is the proud owner of a wood-working enterprise that provides U.S.-style cabinetry and furniture to the growing return migrant population in his community. Like many other return migrants who launch entrepreneurial activities, Hernando mobilized new technical and social skills acquired in the U.S. labor market to train his employees and carve a new niche in the local Mexican economy.

Though Hernando has a distinctive migration history, we argue that his labor market experience exemplifies the upward occupational trajectory of many Mexican return migrants. They leave school at young ages and find entry-level positions in their local economies. The on-the-job tacit skills they learn offer some mobility, but by and large opportunities for higher wages and job advancement are limited. Consequently, they emigrate to *el norte*, sojourning in the United States to accumulate enough savings to start a business back home or to earn higher wages and pay off a debt, or to improve their skills or sometimes just for adventure. Once in the U.S. labor market, many migrants achieve these goals by mobilizing skills learned in the Mexican labor market and by learning new ones in their U.S. jobs. It is probable, for example, that Hernando's experience at a General Motors assembly line facilitated his learning in an assembly line position in Georgia's carpet industry.

When these migrants return to Mexico, their new skill sets acquired abroad can lead to wage growth and occupational mobility. Some, like Hernando, optimize their time in the United States to achieve specific migration goals, accumulating new technical and social skills, and sufficient savings to form their own businesses. The valuable skills and new approaches to work that migrants acquire in the United States not only facilitate the creation of businesses upon return home, but also permit these entrepreneurs to contribute to the growth and diversification of their local economies through job creation and the development of new economic niches. In this way, migrants like Hernando are pioneers and innovators, what Francesco Cerase (1974) termed "carriers of change."

In this paper, we develop and test a *lifelong human capital* perspective to explain how migrants with little schooling like Hernando, are able to mobilize skills learned informally before migration and while abroad in the United States to start new businesses and create jobs upon return. Drawing on findings from interviews with 200 return migrants and 200 non-migrants in Guanajuato, Mexico, we engage two research questions on return migration and business formation. First, does informal on-the-job skill learning in U.S. workplaces facilitate business formation among return migrants? Second, which types of skills acquired in the U.S. labor market enable migrants to create new businesses? Then, adopting our lifelong human capital perspective, we introduce a new theoretical research question: do pre-migration skills acquired in source communities facilitate the acquisition and transfer of

skills across the migratory circuit, from Mexico to the United States and then back to Mexico?

A number of studies have documented a high propensity for self-employment and business formation among return migrants relative to non-migrants. Together, the empirical literature points to the importance of remitted savings, time abroad, and number and types of jobs abroad, for business formation upon return (Démurger and Xu 2011; Dustmann and Kirchkamp 2002; Massey and Parrado 1998; Woodruff and Zenteno 2007). Implicit in this collective body of scholarship is the assumption that migrants acquire not only financial capital, but also human capital, which expands their opportunity structures upon return. Empirical work has demonstrated how the transfer of formal human capital attributes from abroad, such as language capital and credentials, influences the mobility pathways of professional return migrants (Dustmann 1999; Williams and Baláz 2005). More recently, research has identified and measured the transfer of informal human capital from abroad, including social and technical skills, that shapes the mobility opportunities of return migrants with little schooling (Hagan, Hernández-León, and Demonsant 2015). However, absent from this empirical scholarship are studies that directly test the relationship between the transfer of formal and informal human capital and the odds of business formation among return migrants. In this paper, we address this gap. Building on existing scholarship, we treat skills as a multi-dimensional variable that includes social, technical, and English language abilities learned on and off the job throughout migrants' lives. Using this more comprehensive variable, we measure and test the relationship between skill acquisition and transfer and business formation among return migrants.

We recognize that the implications of business formation for migrants' social mobility and local development remain debated. Studies have found that migrants' international labor market experiences and savings accumulated abroad are important sources of capital, which can be used to start successful businesses (Dustmann and Kirchkamp 2002; Papail 2002). Others, however, contend that return migration leads to self-employment not because of financial and human capital acquired abroad but because of barriers in the local labor market, which might limit return migrants' access to salaried employment (Fields 2013; Levy 2008). Because we are interested in the implications of skill transfers and return migration for successful businesses that facilitate individual economic mobility, job creation and thus, local development, we count as self-employed only non-migrants and return migrants who have formed their own businesses and hired employees, whom we interchangeably term *patrones* or entrepreneurs.

## **INTEGRATING MIGRATION, HUMAN CAPITAL, AND BUSINESS FORMATION WITH KNOWLEDGE AND LEARNING APPROACHES**

To explain how migrant workers with little schooling and few formal credentials are able to acquire skills in the United States and mobilize them upon return to Mexico to launch new businesses, we engage two scholarships which have had limited exchange of ideas: the empirical literature on international migration, human capital transfers, and business formation and studies of knowledge and learning in the labor process. From this engagement

we propose a lifelong human capital perspective. The standard human capital model of socioeconomic attainment sees migration as an investment in which returns are balanced against costs (Harris and Todaro 1970; Sjaastad 1962). Within this framework immigrant economic incorporation generally follows a broad U-shaped pattern across a number of outcomes, including wages and occupational mobility (Akresh 2006; Borjas 1989). Recent immigrants in foreign labor markets generally experience occupational downgrading because the human capital acquired in countries of origin is undervalued or unrecognized in places of destination. With the acquisition of country-specific human capital such as language proficiency, education, and professional credentials, however, immigrants tend to experience occupational mobility and wage growth (Akresh 2006; Borjas 1990; Chiswick and Miller 1996).

The acquisition of formal human capital abroad, including schooling and English language, can also enable economic mobility and business formation for migrants upon return (Dustmann 1999; Dustmann and Kirchkamp 2002; Williams and Baláz 2005). However, there is reason to believe that migrants also benefit economically both abroad and upon return from the accumulation of skills and abilities learned informally in foreign workplaces (Hagan et al. 2015; Hagan, Lowe, and Quingla 2011; Reinhold and Thom 2013; Sanderson and Painter 2011).

Unlike the empirical literature on migration and human capital, which relies on easy-to-measure skills such as formal education, professional credentials, and language facility, the scholarship on learning and knowledge recognizes that there are many different types of skills and knowledge and makes a fundamental distinction between tacit and codified knowledge. Introduced by Michael Polanyi (1966), tacit knowledge refers to all forms of embodied personal knowledge, including the practical knowhow needed to finish a task. Unlike codified knowledge, which is easily measurable through formal credentials, tacit know-how is often invisible and difficult to demonstrate in explicit ways. Tacit skills are learned in informal contexts through interaction and observation. Scholars who study the labor process refer to tacit skills as working knowledge, competences, social skills, and also soft skills to distinguish them from technical skills. Tony Manwaring and Stephen Wood (1984) argued that tacit skills are often overlooked or taken for granted because they are not consciously deployed. Ken Kusterer (1978) furthered the argument, contending that the “working knowledge” that goes into “unskilled” jobs remains invisible and hidden. Tacit skills have both individual and social dimensions. Although they allow workers to carry out tasks, solve problems, and make decisions, they are also mobilized collectively to accomplish tasks.

Codified and tacit knowledge acquisitions and transfers have been documented among professional migrants (see Williams 2006, 2007; Williams and Baláz 2005). But as we argue in this paper, the acquisition of competences is dispersed across educational levels, jobs, and labor markets. So-called “unskilled” and “low-skilled” migrants possess multiple tacit skills, which they develop across the migratory circuit to advance their labor market careers. For many migrants, accumulation of these hidden skills starts in the home communities where they learn technical skills informally on and off the job and deploy them in the United States. Yet, source country skills and transfers among those with little schooling are

surprisingly absent in human capital models of immigrant incorporation (Akresh 2006; Hagan et al. 2015, 2011; Sanderson 2014; Sanderson and Painter 2011; Waldinger 1996). In response to this flaw, the economists Harriet Duleep and Martin Regets created a more inclusive theoretical model of human capital investment. Duleep and Regets (2002) highlighted the importance of home country skills for learning new skills. Although technologies between source and destination places may differ, they argue that the materials and aims of the skills are comparable. Drawing on the experiences of a Cambodian carpenter, they explain how “his experience with a hand saw comes into use when learning to use an electric saw.” To quote from their summary, “People who have learned one set of skills, even if those skills are not valued in the destination country’s labor market, have advantages in learning a new set: in learning a previous skill, one learns how to learn” (p. 4–5).

More recently, sociologists have documented the implications of source-country transfers for immigrant mobility in foreign labor markets. Rubén Hernández-León (2004), for example, found that Mexican immigrants laboring as machinists in Houston’s petrochemical industry brought machinist skills learned on the job in Mexico to their U.S. jobs and used this working knowledge to bargain for higher wages and improved working conditions. In Roger Waldinger’s (1996) study of Caribbean and Korean immigrants in the construction and building trades in New York City, he found that pre-migration experience in construction gave immigrant business owners an advantage over their native-born counterparts. Jacqueline Hagan and colleagues (2011) similarly found that undocumented immigrant construction workers laboring in the building and trades industry in North Carolina had previously acquired many of their skills on construction worksites in Mexico. Once in the United States – after learning to work with more advanced technologies and developing new approaches to work – some mobilized these new skills to “job jump” to better positions.

As in the source country, most of the skills that Mexican migrants acquire in the U.S. labor market are learned on the job through observation, imitation, practice, trial and error, and informal instruction from co-workers and supervisors. On-the-job learning, be it at home or abroad, is especially important for working-class immigrants whose jobs require little formal education (construction, hospitality, landscaping, manufacturing, auto repair, agriculture) and who depend on learning through observation and practice (Hagan et al. 2015, 2011; Light 1972; Pisani and Yoskowitz 2005; Ramirez and Hondagneu-Sotelo 2009; Valenzuela 2001).

In response to the burgeoning literature on tacit skill learning and transfer at different stages of the migratory circuit, scholars have begun to incorporate proximate indicators of development formation into analyses of business formation among return migrants. In their study of rural-urban migration and return migration in China, Silvie Demurger and Hui Xu (2011) found that in addition to remitted savings, the number of jobs held during migration increased the odds of entrepreneurship following return. Analyses of return migrants in Tunisia (Mesnard and Ravallion 2006) and Pakistan (Ilahi 1999) have employed migration duration as an indicator of skill acquisition, finding that migrants’ time abroad positively associates with their odds of business formation upon return. In the case of Mexico, Steffen Reinhold and Kevin Thom (2013) found that Mexican return migrants experienced the

greatest wage gains when they worked in the United States in industries they could re-enter upon their return to Mexico. Collectively, these studies document numerous instances in which skills acquired in foreign work sites have enabled economic mobility and business formation in home communities. However, no studies directly measure and test the association between the acquisition of specific skills in foreign labor markets and business formation among return migrants with little schooling and few formal credentials.

Migrants with little schooling often return home with enhanced technical and social skills developed in foreign work environments. Drawing on the concept of lifelong human capital, we will show that these skills are an important but thus far neglected factor in explaining the high rate of business formation among returnees. We further argue that the accumulation of human capital skills is a lifelong process, embedded in labor markets at both ends of the migratory stream. Within this broader framework, skill acquisition represents an independent mobility pathway; skills acquired at one stage of the migratory circuit can enable labor market opportunities at another stage, creating new opportunities for skill learning. In this paper we explicitly test whether Mexicans' total human capital acquired in the United States, through reskilling and acquisition of new skills, predicts business formation upon return to Mexico. We then test whether the learning of skills in the United States and subsequent transfer back to Mexico is enabled by skills learned in Mexico prior to migration.

Based on our review of the theoretical and empirical literature on skill development in the labor process, international migration, and business formation, we propose four hypotheses to guide our analysis of the relationship between lifelong human capital, migration, and business formation.

*Hypothesis 1:* Skills learned informally on the job in the United States and transferred to the Mexican labor market will increase the odds of business formation following return relative to non-migrants and to return migrants who do not transfer skills.

*Hypothesis 2:* Distinct skill types and different combinations of skill types acquired in the U.S. labor market will differentially affect returnees' odds of business formation relative to non-migrants and to return migrants who do not transfer skills.

*Hypothesis 3:* Lifelong learning and skill transfers across the migratory circuit will mediate the effects of commonly used measures such as time abroad or number of jobs on business formation following return.

*Hypothesis 4:* Pre-migration human capital formation will facilitate reskilling in the U.S. labor market and the application of these new skills to work upon return to Mexico.

## DATA AND METHODS

The mixed methods project on which this paper is based included two stages of exploratory fieldwork in North Carolina and Mexico, followed by a 2010 survey of return migrants in León, a sprawling city with 1.3 million inhabitants in Guanajuato, Mexico. We selected León as our research site because its diverse industrial base captures a range of total human capital, which allowed us to examine opportunities for skill transfers, economic mobility,



and business formation. Unlike the traditional, predominantly rural migration stream initiated in the 1970s that has attracted young men with limited skill sets – e.g., agricultural experience – migrants from León and other urban and industrial centers in Mexico develop diverse skill sets before migration, which enable reskilling and the acquisition of new skills in the United States (Durand, Massey, and Zenteno 2001; Fussell 2004; Hernández-León 2008).

Because the proportion of return migrants in Leon was less than 1% in 2010, we purposively identified and sampled neighborhoods that had high concentrations of return migrants according to the 2010 Mexican Census. In each neighborhood our research team went door-to-door to identify and interview return migrants. Each time a return migrant was interviewed, a non-migrant on the same block was randomly selected to participate in the study. We visited a total of 77 *manzanas* to obtain a sample of 200 return migrants and 200 non-migrants. Migrant respondents who were retired, homemakers, seeking work, or in school upon return (18) or did not provide skill narratives (7) were excluded from our analysis, yielding a sample of 375 observations, including 200 non-migrants and 175 return migrants.

Interviews lasting approximately 1.5 hours were conducted in respondents' homes. They included 150 close-ended questions, which captured demographic data and complete migration and work histories, including skill acquisition and transfers from job to job across the migratory circuit. Additionally, 30 open-ended questions probed the social contexts and learning processes of skill development. To end the interview, each respondent relayed a personal narrative of lifelong work experience and skill development and transfers. These biographical narratives were transcribed and then organized by gender, occupation, industry, and by additional themes as they emerged from review and analysis of the data. Recognizing the importance of workplace learning and industrial context of skill transfers, we also conducted more than a dozen worksite observations of return migrant businesses, which ranged from small and medium sized sundry stores, auto repair shops, cyber cafes and restaurants, and shoe and leather workshops and factories. These different techniques yielded rich statistical and observational data along with textual narratives.

Based on systematic analysis of the surveys, in-depth interviews, and worksite observations, we inductively identified skill levels and multi-dimensional skill types. The definitions of skill levels, skill types, and learning contexts are presented in Table 1. Because only two percent of the migrants in our sample transferred skills acquired via formal education in the United States back to their work in Mexico, we concentrated our analysis on the most commonly transferred skill types: English skills, social competences, and technical knowledge.

### **Analytic Strategy**

Because our research questions suggest multiple outcomes of interest – business formation and skill learning and transfer – we separated our analyses into two phases. In Phase I, we addressed Hypotheses 1–3, which are concerned with the relationship between skill learning and transfer and business formation. Phase I was comprised of three stages. In Stage 1, we estimated two logistic regressions that included return migrants and non-migrants to test the

association between skill transfer and business formation with and without controls for traditional human capital: education and work experience. In Stage 2, we estimated two additional regressions, which also included non-migrants and return migrants, using detailed categorical variables to identify how different skill types and combinations affect business formation. Finally, in Stage 3, we omitted non-migrants from the regression analysis in order to include other aspects of the migration experience beyond skill transfers, such as migration duration, documentation, and occupational mobility in the United States.

In Phase II, we leveraged our unique cumulative skill measures to test whether pre-migration skills and knowledge increase the odds of acquiring new skills in the U.S. labor market and transferring them to work upon return to Mexico. Thus, within our return migrant sample, we estimated three logistic regressions that each predict the odds of acquiring and transferring one of the three skill types that we examined (English language, social, and technical). Because extensive research demonstrates distinct migration experiences between men and women (Cerrutti and Massey 2001; Hagan 1998; Hondagneu-Sotelo 1994), we replicated all the models among only the men in our sample (not shown). Results among men were consistent with those estimated on the full sample of women and men, which we present and discuss below. Drawing on respondents' job and skill narratives, we identified ways in which gender modifies skill learning and transfer among Mexican migrants.

In both Phases, we used logistic regression to estimate the associations between skill transfers and business formation because it is the preferred method when the outcome of interest is a dichotomous variable: i.e., did a respondent start a business or not. A positive coefficient ( $X > 0$ ) indicates a positive association between a given independent variable ( $X$ ) and the odds of business formation ( $Y$ ) – i.e., as  $X$  increases,  $Y$  increases. All regression tables present log odds. We exponentiated select coefficients to quantify the key associations.

### Outcome and Explanatory Variables

Our dependent variable in Phase I was a dichotomous measure of current labor market status that distinguished business owners with employees, which we call *patrones* (=1), from all other workers, including self-employed persons without workers (=0). We initially estimated multinomial logistic regression models to distinguish the associations between skill transfer and the odds of self-employment with employees and self-employment without employees, both relative to wage labor. However, a Wald test revealed no significant difference between self-employment without employees and wage labor (Long and Freese 2006). Thus, given our interest in return migration, business formation, and local development, we combined the self-employed without employees and paid workers into a single category.

Our key explanatory variables in Phase I included three measures that captured the multidimensional nature of skills learned informally on the job in the United States and transferred back to the Mexican labor market. To test Hypothesis 1 – skill acquisition and transfer will increase the odds of business formation – we used a categorical variable that indicated whether a respondent transferred any on-the-job skills acquired in the United States to their current work in Mexico (transferred skills=3, no skill transfer=2, non-migrant=1). To test Hypothesis 2 – different skill types and combinations differently affect



the odds of business formation – we transformed our measure of skill acquisition and transfer into two categorical variables that captured each respondents' skill transfers: 1) no transfer, English only, technical only, social only, two or more skills; and 2) no transfer, English only, technical only, social only, English and social, technical and social, and all three. These categorizations distinguish the importance of distinct skill types and combinations.

In Phase I, we also included three variables to adjust for traditional human capital. Our first measure, years of education, captures respondents' formal human capital. Because workers throughout Latin America often view wage labor, rather than education, as preparation for entrepreneurship (Jütting, Parlevliet, and Xenogiani 2008; Maloney 2004), we included a continuous measure of work experience in years. To capture occupational mobility within a firm and the potential for acquiring and applying leadership skills, we identified respondents who had ever been promoted to a supervisory role within a specific job (1=ever promoted).

In the third stage of Phase I, to test Hypothesis 3 – skill acquisition and transfer will mediate the effect of proximate indicators of skill acquisition on business formation – we restricted our analysis to the migrant portion of our sample and incorporated several aspects of their migration experiences into the regression models. To account for exposure to new skills, we included a continuous measure of total years spent in the United States. However, we suspect that migrants' acquisition of skills will be determined by the quality, as well as quantity, of their U.S. migrations. To account for upward occupational mobility during migration we included a dichotomous variable that indicated respondents who transitioned to higher skilled jobs in the U.S labor market (=1). Because unauthorized Latino migrants are often directed to the unregulated sector of the U.S. labor market where conditions may be exploitive with limited opportunities for mobility, (Catanzarite and Aguilera 2002; Flippen 2012; Rivera-Batiz 1999; Zolniski 1994), we also included a variable to adjust for the effect of legal status on business formation (1=undocumented, 0=work visa, green card, or citizen). We grouped all authorized migrants into a single category due to their small number. Finally, recognizing that deported persons may be less prepared for return and re-entry into the local labor market than those who went home voluntarily (Berger Cardoso et al. 2016; Cassarino 2004; Hagan, Eschbach, and Rodriguez 2008; Wheatley 2011), we also included a dummy variable that indicated whether respondents were deported back to Mexico (1=deported).

Because studies document a positive association between accumulated remittances and business formation among Mexican return migrants (Durand, Parrado, and Massey 1996; Massey and Parrado 1998), we included measures of migrants' U.S. average wages and remittance behavior to capture their savings potentials. Migrants reported their wages in U.S. dollars at their last job in the United States. We adjusted these values for inflation according to migrants' year of return to Mexico and include the variable as a natural logarithm. Our measure of remittance behavior is a dummy variable that indicated those migrants who remitted money to Mexico specifically for savings and/or investment.

Building on the concept of lifelong human capital, in Phase II we tested Hypothesis 4: skills and knowledge acquired before migration will enable migrants' acquisition and transfer of

new skills while working abroad. Because we expected that the mechanisms that predict skill acquisition could vary by skill type (i.e., English, social and technical), we treated each type of skill transferred as a distinct dichotomous dependent variable. Our primary explanatory variables in Phase II were the aforementioned measures of human capital (education, work experience, and job mobility) and migration (time in the U.S., moved to a more highly skilled job, immigrant status, wages, and remittance behavior), as used in Phase I. To investigate the cumulative nature of skill learning and transfer across the migratory circuit, we also created a dummy variable that indicated whether or not migrants transferred technical skills learned in Mexico to their work in the United States. Like our measures of U.S. - Mexico skill transfers, we based this measure on respondents' skill narratives. Fewer than five percent of the migrants in our sample transferred non-technical skills (i.e., English language or social), reflecting their limited education in Mexico and the fact that many of the migrants worked alongside co-ethnics in their U.S. jobs, where there was no need to use English (Waldinger and Lichter 2003). Thus, we did not include these non-technical transfers in our models.

Finally, because skill learning and human capital formation is a lifelong process that varies by life stage, family context, and gender (Beckett and Hager 2001; Hagan et al. 2015; Williams and Baláz 2005), all models included demographic controls for age (continuous in years), married (1=married/civil union), and gender (1=male).

## RESULTS

### Descriptive Results

Table 2 presents descriptive statistics for our Leon sample. Migrants and non-migrants differed on several important demographic and human capital indicators. In contrast to the balanced sex ratio among non-migrants we interviewed, most of the return migrants in our sample were male, a finding consistent with prior research on migration and gender, which shows that while Mexican men frequently engage in circular, work-based migration, women are more likely to stay longer or settle permanently in the United States, often joining spouses and family members (Hondagneu-Sotelo 1994; Ruiz-Tagle and Wong 2009). Consistent with recent estimates from Mexico's National Survey of Population Dynamics (INEGI 2011), on average, return migrants were also several years older than non-migrants.

The migrants in our sample left school to enter the workforce at younger ages than non-migrants, a finding documented elsewhere (Kandel and Massey 2002). Given their earlier workforce entry, it is not surprising that the migrants we interviewed had accumulated substantially more labor market experience than their non-migrant counterparts. Therefore, although they had relatively low levels of formal human capital, the return migrants we interviewed had had substantially greater opportunity to develop informal skills and techniques on the job. Interestingly, despite their fewer years of work experience, the non-migrants in our sample experienced greater intra-firm mobility than non-migrants. This may indicate recognition of accumulated years of education – formal human capital – or their greater job stability relative to international migrants.

As Table 2 shows, and consistent with prior research (Dustmann and Kirchkamp 2002; Mesnard and Ravallion 2006; Sheehan and Riosmena 2013), the proportion of business owners was higher among migrants than non-migrants. Respondents with prior migration experience were nine percentage points more likely to become self-employed, and six percentage points more likely to own a business with employees. At the same time, the proportional difference in self-employment with employees was not statistically significant, suggesting that potential associations between skill transfer and business formation do not result from general migrant selection processes.

Table 3 presents migration experiences and skill transfers of the return migrants in our sample. Our respondents averaged roughly four years in the United States, where they held approximately two jobs. The respondents extended time in the United States allowed them to accumulate and remit financial savings, which 41 percent put towards savings and investment upon return. A quarter of the sample experienced occupational mobility in the U.S. labor market, and it is likely that through these job transitions, they reskilled and were exposed to new techniques and approaches to work. On average our respondents had been back in Mexico for more than eight years, sufficient time to re-enter Mexican labor markets and apply skills learned abroad.

Unlike other urban migrant streams, in which migrants often secure tourist visas or work permits to enter the United States legally (Hernández-León 2008), the vast majority of our migrant sample (93%) traveled to the United States without any form of documentation. In the U.S.-Mexico migratory circuit, legal status is generally associated with repeated trips and older flows, while unauthorized migration tends to be more characteristic of newer flows (Massey and Espinosa 1997). Thus, we attribute the lack of documentation to the nascent character of this urban stream, which emerged during the 1990s as a part of Mexico's "great migration" (Hernández-León 2008). Seventeen percent of the migrant sample were deported back to Mexico, a figure that is slightly higher than other recent estimates of involuntary returns to Mexico (MATT 2013).

Table 3 also shows that over half of the migrants in our sample transferred at least one of the four skill types from their U.S. jobs back to the Mexican labor market. Interestingly, traditional forms of human capital, including formal education and language acquisition, constituted only one sixth of the total skills transferred. We found that a majority of the skills that migrants' successfully transferred were acquired informally on the job and included task-specific techniques, forms of social interaction and customer service skills, and new approaches to business organization – tacit skills not captured by most quantitative measures. We also found these skill transfers to be gendered, reflecting the occupational concentrations of men and women in the U.S. labor market. Forty-one percent of the return migrants (all male) we interviewed described applying at least one new technical skill learned on their U.S. jobs to their current work in Mexico. Among these transfers, construction and auto repair skills ranked highly, probably because they are valued in both the U.S. and Mexican labor markets. Twenty percent acquired new interpersonal competences on their U.S. jobs, including social skills such as customer service and teamwork and leadership skills. Customer service and teamwork skills ranked highly among transfers of female return migrants, who acquired these interpersonal competences in their

U.S. jobs as food preparation workers, chambermaids, and care workers. Fifteen percent of respondents applied multiple types of skills simultaneously. Women regularly reported transferring both English language skills and interpersonal competences from their U.S. jobs as live-in domestics where they learned these skills through interaction with employers and their children. Indeed the simultaneous transfer of English and customer service skills has important implications for the mobility pathways of female return migrants as it allows some to bypass traditional domestic work and locate jobs in the tourism sectors of the urban economy where demand for such skills is high. The abundance and diversity of these tacit skill transfers illustrates the importance of adopting more sophisticated measures of skill formation and transfer than commonly used proxy indicators, such as time abroad, when exploring labor market outcomes, business formation, and local economic development among return migrants.

### Phase I, Stage 1: Skill Transfer and Business Formation

Table 4 presents the results from three logistic regressions predicting the odds of business formation. Demographic characteristics were statistically insignificant in all three models. Yet, the coefficients suggest that the odds of business formation increase with age and that men are more likely to start businesses than women. Model 1 presents the bivariate association between migration and business formation, net of marital status, age, and gender. As in our descriptive analyses, migration was associated with a modest, but statistically insignificant increase in the odds of owning a business.

Model 2 presents the bivariate association between tacit skill transfer and business formation. The results are striking. Among migrants we interviewed, the application of skills learned in the United States to work in Mexico was associated with a 148 percent increase ( $\exp(0.91)=2.48$ ) in the odds of owning a business with employees. Failure to transfer skills was actually associated with lower odds of business formation relative to non-migrants. The results shown in Model 1 support our argument that tacit skill transfer is essential to understanding the association between migration and business formation.

In Model 3, we incorporate traditional human capital. Both education ( $p<0.052$ ) and intra-firm mobility, but not years of work experience, were positively and significantly associated with the odds of business formation. The inclusion of education, intra-occupational mobility, and work experience actually strengthened the association between skill transfer and business formation. We explored potential interactions between skill transfer and our other predictors, but identified no significant effects. Our results support Hypothesis 1 – that skills transferred from the U.S. labor market increase the odds of business formation – suggesting that migration and skill transfer provide an alternative avenue to advancement among individuals with low levels of formal human capital. Our findings also demonstrate that traditional human capital variables provide incomplete measures for predicting social mobility among migrants with little schooling.

Take the case of Anna. Before migrating to the United States, she left school at age 15 and later found work as an assistant receptionist in a hotel catering to American tourists in San Miguel de Allende. In 1996, an American woman approached Anna and asked if she would move to Manhattan to care for her children. Thus, in her early twenties, Anna migrated to

New York, where she worked as a live in and then day domestic in Manhattan for four years. As a day domestic she learned how to clean with new technology, care for children, and navigate public transportation; she also improved her English and developed interpersonal skills from interacting with her employers. By performing these multiple tasks, she developed a set of management skills. Upon return, she found work as a sales manager in a high-end store that sells handcrafted furniture to tourists and Americans living in Mexico. In the shop, she mentioned that she earns 200 pesos more a week than her coworkers because of her social and management skills and English language proficiency, which she learned informally through her U.S. work as a domestic and nanny.

### **Phase I, Stage 2: Are All Skills Created Equal?**

To test Hypothesis 1, we assumed the association between skill transfer and business formation to be constant across different skill types. However, our respondents' skill narratives illustrated the heterogeneous manners in which returnees applied new and improved skills to the formation of their new businesses. To test Hypothesis 2 – different skill types and combinations differentially affect the odds of business formation – we relaxed this assumption. Table 5 presents results from two models in which we regressed the odds of launching a new business on categorical indicators of skill acquisition.

Model 1 reveals that, only English language skills were independently significantly associated with the formation of new businesses. Our respondents' narratives revealed that in many cases new English language skills facilitated the initiation of businesses that catered to tourists and business travelers. For example, several of our respondents launched taxi businesses that targeted English speaking travelers and business persons, using the English language skills that they had acquired in the United States.

Perhaps the most striking result shown in Table 5 is the importance of transferring more than one skill and different types of skill sets. Model 1 reveals that the greatest association between skill transfer and business formation occurred among those who transferred multiple skills, for whom the odds of business formation increased nearly seven fold ( $\exp(1.9)=6.7$ ). This outcome suggests that central to the successful formation of new businesses among returnees is the strategic combination of multiple informally acquired skills and techniques.

In Model 2, we examine specific skill sets or combinations. Every observed skill combination was associated with a substantial and significant increase in the odds of business formation (English plus social skills only marginally so,  $p<0.095$ ). To illustrate the value of multiple skill transfers and alternative skill combinations for social mobility pathways upon return, we turn to the narratives of Joaquin and Rosalio, two migrants who applied multiple skill types to new and successful business ventures after returning to Mexico.

In the United States, Joaquin worked as a semi-skilled auto mechanic. Through on-the-job observation and interaction with his co-workers he learned to replace broken car parts with new ones, a strategy rarely used in Mexico where mechanics more commonly attempt to repair worn out or damaged components. Joaquin also picked up some English from his

coworkers, which he used to read English language manuals on the installation of replacement car parts. Upon return to Leon, Joaquin found work as a mechanic in an auto repair shop. There, his boss, after observing the efficiency gains realized by the use of replacement parts, actually altered the auto shop's processes to incorporate what Joaquin had learned about using replacement parts. After working as a paid mechanic for several years, Joaquin used his savings to open his own repair shop. In his new business, Joaquin and his employee continue to rely on the multiple competences that he transferred from the United States – technical and English language reading skills – to install replacement car parts

Other returnees, like Rosalio, learned more efficient approaches to business organization, which allowed them to mobilize new technical skills to form businesses. A carpenter by trade, Rosalio found work in Denver, Colorado, crafting and assembling drum sets. From his coworkers, Rosalio learned to use *garlopitas eléctricas* (electric jack planes) to precisely measure and cut musical drums' individual components. He also reported learning new social skills and approaches to work, such as meeting deadlines and attentiveness to quality. Returning to Leon, Rosalio opened a drum manufacturing business, where he believes that he benefits from the technical, social and organizational skills he picked up in the United States. When we interviewed him in 2010, he had successfully expanded his operation to include exports of musical drums throughout Mexico.

### Phase I, Stage 3: Migration, Skill Transfer and Business Formation

Table 6 presents the results from analyses in which we restricted our sample to the 175 return migrants to incorporate multiple migration characteristics. Because of our interest in skill transfer as a mediating variable for more traditional proxies of migrants' skill acquisition, Model 1 omitted skill transfer to observe whether the other migration characteristics predicted business formation. Total U.S. work experience did not significantly affect the odds of business formation. Although one might expect time abroad to be an important predictor of migrants' accumulation of human and financial capital, other studies of the labor market experiences of Mexican return migrants have found only a minimal association between tenure abroad and entrepreneurship upon return (Massey and Parrado 1998; Sheehan and Riosmena 2013). Consistent with and actually exceeding our expectations, occupational mobility in the United States nearly tripled the odds of business formation among returnees ( $\exp(1.05)=2.9$ ), suggesting that those who are more successful abroad are more successful upon return. Somewhat surprisingly, and perhaps owing to our small sample size, there was no association between wages and business formation or remittances and business formation. The odds of business formation were substantially lower among the undocumented migrants in our sample (not statistically significant). Similarly, although the coefficient was insignificant, deportation was associated with a substantial reduction in the odds of business formation, perhaps reflecting the challenges to labor market reintegration faced by migrants who are forcibly repatriated.

In Model 2 we assess whether skill transfer attenuates the association between proximate indicators of skill acquisition and business formation, as proposed in Hypothesis 3. The addition of skill transfer reduced the effect of U.S. occupational mobility by more than half, rendering it non-significant. This outcome corroborates prior research on Mexican



immigrants in the U.S., which has found that job jumping – moving from a less skilled to a more highly skilled occupation – leads to reskilling and exposure to new technology and new approaches to work (Hagan et al. 2011).

In Model 3, we replaced the dichotomous measure of skill transfer with the categorical variable from Model 2 of Table 5. The more detailed skill transfer variable further weakened the association between occupational mobility and business formation. The effects of total U.S. work experience and occupational mobility were further attenuated and remained insignificant. The results in Table 6 lend support to our third hypothesis. Informal on-the-job skill learning and transfer appears to mediate the association between proximate indicators of migrant human capital formation and business ownership upon return.

## Phase II: What Factors Enable Skill Acquisition among Mexican Immigrants?

Thus far, we have focused on identifying and understanding the relationship between skill transfers from the United States and business formation upon return to Mexico. However, we know that skill learning and human capital formation are lifelong processes (Beckett and Hager 2001; Hagan et al. 2015; Williams and Baláz 2005). It is likely, therefore, that migrants' informal acquisition and transfer of U.S. skills and techniques to Mexico is enabled by pre-migration skill development and human capital formation. To measure this process, we conclude our analysis with a consideration of pre-migration human capital attributes and aspects of the migration experience that may enable skill learning and transfer across the Mexico-U.S. migratory circuit.

Table 7 presents results from three separate logistic regressions estimating the odds of skill transfer from the United States back to Mexico by skill type. As Model 1 in Table 7 shows, formal education in Mexico was most important for the acquisition and transfer of English language skills in the United States back to Mexico. For each additional year of education that our respondents received in Mexico prior to migration, their odds of acquiring English language skills in the United States and transferring them back to Mexico increased by 23 percent ( $\exp(0.21)-1=0.23$ ). Respondents with more education may have learned basic English language skills in school before migrating, thus enabling them to pick up the language more easily in the United States. In contrast, as shown in Models 2 and 3, none of our measures of source-country human capital were significantly associated with the odds of learning and transferring either social or technical skills in the United States back to Mexico.

Two of the three demographic characteristics shown in Table 7 were significantly associated with respondents' odds of transferring skills from the United States back to Mexico. First, women were significantly more likely than men to transfer social skills, reflecting the types of jobs they held in the United States (domestic workers, chambermaids, assistant clerks), which required regular interactions with their employers and clients. Second, age was positively the odds of transferring technical skills, reflecting the longer exposure to on- and off-the-job learning among older migrants.

Turning to the migration experience, we can see from Table 7 that occupational mobility in the U.S. labor market was significantly associated with the odds of skill transfers to Mexico. In models without the control for technical skill transfer from Mexico to the U.S. labor

market, occupational mobility abroad was also significantly associated with technical skill transfer from the U.S. to Mexico – coefficient=0.82,  $p<0.05$  (available upon request). These results support the mediating story shown in Table 6. That is, migrants who successfully job jump to better jobs in the United States are exposed to new skills and approaches to work, which, as we have shown, create opportunities for business formation upon return to Mexico.

The final section of Table 7 includes our dummy variable measuring the transfer of technical skills learned informally on and off the job in Mexico to U.S. occupations. The non-significant coefficients on both English and social skills indicate that we are not merely observing differences in individuals' overall abilities to learn skills. Rather, the results indicate that acquisition of specific skill types is a lifelong process in which previously acquired competences enable the formation of future skills and abilities. Indeed, among migrants who transferred technical skills learned informally on the job in Mexico to the U.S. labor market, the odds of acquiring new technical skills abroad were nearly twelve times higher relative to those who did not ( $\exp(2.50)=12.2$ ). Moreover, the effect of occupational mobility on skill development decreased by half and became non-significant. This suggests a process by which migrants who arrive in the United States with pre-migration skills are able to transition from entry-level occupations to positions requiring more skills. These transitions provide opportunities to learn new techniques and work with more advanced machinery.

Take the case of Jaime, who landed his first U.S. job as a picker on a farm that harvested tomatoes and raised cattle. One day, his supervisor asked if any of the workers had the skills to construct a corral. Jaime came forward and said that he had woodworking skills, having helped his father build a doorframe and a cabinet for their home. When the owner saw the corral that Jaime built, he was so impressed by Jaime's craftsmanship, that he referred him to his neighbors, and eventually to a residential builder, who recruited Jaime from his agricultural job to the construction and building trade. In his new job, Jaime reskilled, learning new woodworking techniques. As Jaime stated, "I learned to be more efficient and precise."

For many international migrants, like Jaime, the process of skill development begins in home and community settings in the country of origin, where individuals at a young age participate in the building of a family home, or the repairing of a family automobile or household appliance. Unfortunately, owing largely to a reliance on easily accessible secondary data, which too often lacks detailed measures of tacit skill formation and application, the process of lifelong human capital formation, and its implications for business formation and economic development, has been largely neglected by migration scholars.

## DISCUSSION AND CONCLUSION

Our findings have wide implications for how social scientists conceptualize and measure human capital and socioeconomic mobility among international migrants. While the connection between international migration, skill development, and social mobility is not

new, it has not been sufficiently theorized or analyzed. As our study shows, the labor market trajectories of migrants with little schooling are intertwined with the development and application of tacit skills and techniques at home and abroad. We find that the process of *lifelong human capital* development across the migratory circuit is essential to business formation among return migrants.

Unlike migrants whose human capital is primarily acquired via formal education leading to credentialed and codified knowledge, migrants with little schooling acquire most of their skills informally through observation, interaction, and trial and error, both on and off the job. Engaging the literature on learning and knowledge transactions illuminates the social, methodological, and practical competences that migrants acquire in their workplaces and homes. It is therefore especially important that human capital models designed to assess migrants' economic and social gains account for the lifelong accumulation of unobservable or hidden human capital, including tacit technical skills and interpersonal competences, along with traditional human capital measures such as English language ability and formal education. As we have shown in this article, skill acquisition is dispersed across educational levels, jobs, and labor markets.

Measuring the skills of the "unskilled" would have been impossible had we relied solely on secondary databases that capture only easily observable and quantifiable aspects of individuals' international sojourns, as is usually done by migration and labor scholars. By systematically researching modes of learning and transferring skills across the migratory circuit, our study overcomes the methodological nationalism permeating theories of international migration, human capital, and social mobility. Relying on surveys, in-depth interviews, and worksite observations on both sides of the border, enabled us to examine the cumulative process of skill development and transfer across occupations at all stages of the migratory circuit: before migration, while abroad, and upon return. Employing this approach revealed that the transfer of tacit skills learned informally, both at home and abroad, is an important and thus far ignored, factor in understanding the high level of business formation among return migrants.

This is not to say that all migrants fare well upon return. Many struggle to reintegrate into their home labor markets (Mezger Kveder and Flahaux 2012). A number of our respondents, especially women, reported encountering barriers such as age discrimination and limited job networks upon return. Some migrants who had been deported or were unable to plan their returns were eking out a living on the margins of the economy. We also found that while some skills are easily transferable (e.g., metalworking, automotive repair, and English language acquisition), others, such as the techniques used in roofing in the U.S., are not applicable to work in Mexico. In some cases, migrants who had intended to capitalize on new skill sets by opening their own business lacked the financial capital necessary to realize their goals. But for many return migrants like Hernando, Anna, Rosalio, and Joaquin, new skills learned in the United States facilitated a unique mobility pathway upon return – business formation.

Although our study represents an important step forward in research on migration, human capital formation and transfer, and business formation, it also highlights the need for

additional research in several areas. First, we intentionally focused on Leon, a large urban center with a diverse industrial base, where English language skills are in high demand. Additional research is needed to understand how new or improved skills impact the economic fortunes of Mexican migrants returning to smaller and less diversified economies. Second, although we recognize the importance of U.S. earnings and cumulative remittances or “migradollars” to the formation of new businesses, we could only approximate these variables. Several of our respondents who accumulated new skills but not dollars while in the United States, reported saving money for a year or more after returning to Mexico in order to open new businesses. Thus, we expect that direct measures of accumulated U.S. savings might moderate the relationship between skills learned abroad and business formation upon return. And finally, to truly understand the relationship between U.S. migration, business formation, and long-term socioeconomic mobility among return migrants, longitudinal research is needed. We plan to continue gathering data in this direction.

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## References

- Akresh, Ilana R. Occupational Mobility among Legal Immigrants to the United States. *International Migration Review*. 2006; 40(4):854–84.
- Beckett, David, Hager, Paul. *Life, Work and Learning*. New York, NY: Routledge; 2001.
- Berger Cardoso, Jodi, Hamilton, Erin Randle, Rodriguez, Nestor, Eschbach, Karl, Hagan, Jacqueline. *Deporting Fathers: Involuntary Transnational Families and Intent to Remigrate among Salvadoran Deportees*. *International Migration Review*. 2016; 50(1):197–230.
- Borjas, George J. Immigrant and Emigrant Earnings: A Longitudinal Study. *Economic Inquiry*. 1989; 27(1):21–37.
- Borjas, George J. Self-Selection and the Earnings of Immigrants: Reply. *The American Economic Review*. 1990; 80(1):305–8.
- Cassarino, Jean-Pierre. Theorizing Return Migration: The Conceptual Approach to Return Migrants Revisited. *International Journal on Multicultural Societies*. 2004; 6(2):253–79.
- Catanzarite, Lisa, Aguilera, Michael Bernabé. Working with Co-Ethnics: Earnings Penalties for Latino Immigrants at Latino Jobsites. *Social Problems*. 2002; 49(1):101–27.
- Cerese, Francesco P. Expectations and Reality: A Case Study of Return Migration from the United States to Southern Italy. *International Migration Review*. 1974; 8(2):245–62. [PubMed: 12339170]
- Cerrutti, Marcela, Massey, Douglas S. On the Auspices of Female Migration from Mexico to the United States. *Demography*. 2001; 38(2):187–200. [PubMed: 11392907]
- Chiswick, Barry R., Miller, Paul W. Ethnic Networks and Language Proficiency among Immigrants. *Journal of Population Economics*. 1996; 9(1):19–35. [PubMed: 12291403]
- Démurger, Sylvie, Xu, Hui. Return Migrants: The Rise of New Entrepreneurs in Rural China. *World Development*. 2011; 39(10):1847–61.

- Duleep, Harriet, Regets, Mark. The Elusive Concept of Immigrant Quality: Evidence from 1970–1990. Institute for the Study of Labor (IZA); 2002. Retrieved April 10, 2015 (<https://ideas.repec.org/p/iza/izadps/dp631.html>)
- Durand, Jorge, Massey, Douglas S., Zenteno, Rene M. Mexican Immigration to the United States: Continuities and Changes. *Latin American Research Review*. 2001; 36(1):107–27. [PubMed: 17595734]
- Durand, Jorge, Parrado, Emilio A., Massey, Douglas S. Migradollars and Development: A Reconsideration of the Mexican Case. *International Migration Review*. 1996; 30(2):423–44. [PubMed: 12291750]
- Dustmann, Christian. Temporary Migration, Human Capital, and Language Fluency of Migrants. *The Scandinavian Journal of Economics*. 1999; 101(2):297–314.
- Dustmann, Christian, Kirchkamp, Oliver. The Optimal Migration Duration and Activity Choice after Re-Migration. *Journal of Development Economics*. 2002; 67(2):351–72.
- Fields, Gary. Self-Employment in the Developing World. 2013. Submitted to the High Level Panel on the Post-2015 Development Agenda
- Flippen, Chenoa A. Laboring Underground: The Employment Patterns of Hispanic Immigrant Men in Durham, NC. *Social problems*. 2012; 59(1):21–42. [PubMed: 22844159]
- Fussell, Elizabeth. Sources of Mexico's Migration Stream: Rural, Urban, and Border Migrants to the United States. *Social Forces*. 2004; 82(3):937.
- Hagan, Jacqueline, Eschbach, Karl, Rodriguez, Nestor. U.S. Deportation Policy, Family Separation, and Circular Migration. *International Migration Review*. 2008; 42(1):64–88.
- Hagan, Jacqueline, Lowe, Nichola, Quingla, Christian. Skills on the Move: Rethinking the Relationship between Human Capital and Immigrant Economic Mobility. *Work and Occupations*. 2011; 38(2):149–78. [PubMed: 23700356]
- Hagan, Jacqueline Maria. Social Networks, Gender, and Immigrant Incorporation: Resources and Constraints. *American Sociological Review*. 1998; 63(1):55–67.
- Hagan, Jacqueline Maria, Hernández-León, Rubén, Demonsant, Jean Luc. *Skills of the Unskilled: Work and Mobility among Mexican Migrants*. Oakland, CA: University of California Press; 2015.
- Harris, John R., Todaro, Michael P. Migration, Unemployment and Development: A Two-Sector Analysis. *The American Economic Review*. 1970; 60(1):126–42.
- Hernández-León, Rubén. Restructuring at the Source. *Work and Occupations*. 2004; 31(4):424–52.
- Hernández-León, Rubén. *Metropolitan Migrants: The Migration of Urban Mexicans to the United States*. Berkeley, CA: University of California Press; 2008.
- Hondagneu-Sotelo, P. *Gendered Transitions: Mexican Experiences of Immigration*. University of California Press; 1994.
- Ilahi, Nadeem. Return Migration and Occupational Change. *Review of Development Economics*. 1999; 3(2):170–86.
- INEGI. Encuesta Nacional de La Dinámica Demográfica 2009: Panorama Sociodemográfico de México Principales Resultados. Aguascalientes, Ags: Instituto Nacional de Estadística y Geografía (México); 2011.
- Jütting, Johannes Paul, Parlevliet, Jante, Xenogiani, Theodora. *Informal Employment Re-Loaded*. OECD Publishing; 2008. Retrieved April 28, 2014 (<http://econpapers.repec.org/paper/oecdevaaa/266-en.htm>)
- Kandel, William, Massey, Douglas S. The Culture of Mexican Migration: A Theoretical and Empirical Analysis. *Social Forces*. 2002; 80(3):981–1004.
- Kusterer, Kenneth C. *Know-How on the Job: The Important Working Knowledge Of “unskilled” workers*. Westview Press; 1978.
- Levy, Santiago. *Good Intentions, Bad Outcomes: Social Policy, Informality, and Economic Growth in Mexico*. Brookings Institution Press; 2008.
- Light, IH. *Ethnic Enterprise in America: Business and Welfare among Chinese, Japanese, and Blacks*. University of California Press; 1972.
- Long, J Scott, Freese, Jeremy. *Regression Models for Categorical Dependent Variables Using Stata*. StataCorp LP; 2006.

- Maloney, William F. Informality Revisited. *World Development*. 2004; 32(7):1159–78.
- Manwaring, Tony, Wood, Stephen. Recruitment and the Recession. *International Journal of Social Economics*. 1984; 11(7):49–63.
- Massey, Douglas S., Espinosa, Kristin E. What's Driving Mexico-U.S. Migration? A Theoretical, Empirical, and Policy Analysis. *American Journal of Sociology*. 1997; 102(4):939–99.
- Massey, Douglas S., Parrado, Emilio A. International Migration and Business Formation in Mexico. *Social Science Quarterly*. 1998; 79(1):1–20.
- MATT. The US/Mexico Cycle End of an Era: Quantitative Research Study Preliminary Findings and Insights. MATT; 2013.
- Mesnard, Alice, Ravallion, Martin. The Wealth Effect on New Business Startups in a Developing Economy. *Economica*. 2006; 73(291):367–92.
- Kveder, Mezger, Leonie, Cora, Flahaux, Marie-Laurence. Returning to Dakar: A Mixed Methods Analysis of the Role of Migration Experience for Occupational Status. *World Development*. 2012; 45:223–38.
- Papail, Jean. De Asalariado a Empresario: La Reinsercion Laboral de Los Migrantes Internacionales En La Region Centro-Occidente de Mexico. *Migraciones Internacionales*. 2002; 1:79–102.
- Pisani, Michael J., Yoskowitz, David W. Grass, Sweat, and Sun: An Exploratory Study of the Labor Market for Gardeners in South Texas\*. *Social Science Quarterly*. 2005; 86(1):229–51.
- Polanyi, Michael. The Logic of Tacit Inference. *Philosophy*. 1966; 41(155):1–18.
- Ramirez, Hernan, Hondagneu-Sotelo, Pierrette. Mexican Immigrant Gardeners: Entrepreneurs or Exploited Workers? *Social problems*. 2009; 56(1):70–88.
- Reinhold, Steffen, Thom, Kevin. Migration Experience and Earnings in the Mexican Labor Market. *Journal of Human Resources*. 2013; 48(3):768–820.
- Rivera-Batiz, Francisco L. Undocumented Workers in the Labor Market: An Analysis of the Earnings of Legal and Illegal Mexican Immigrants in the United States. *Journal of Population Economics*. 1999; 12(1):91–116. [PubMed: 12295042]
- Ruiz-Tagle, Juan C., Wong, Rebeca. Determinants of Return Migration to Mexico among Mexicans in the United States. *Population Association of America Annual Meeting; 2009. Population Association of American Annual Meeting*
- Sanderson, Matthew, Painter, Matthew. Occupational Channels for Mexican Migration: New Destination Formation in a Binational Context. *Rural Sociology*. 2011; 76(4):461–80.
- Sanderson, Matthew R. Networks of Capital, Networks for Migration: Political–economic Integration and the Changing Geography of Mexico–US Migration. *Global Networks*. 2014; 14(1):23–43.
- Sheehan, Connor M., Riosmena, Fernando. Migration, Business Formation, and the Informal Economy in Urban Mexico. *Social science research*. 2013; 42(4):1092–1108. [PubMed: 23721676]
- Sjaastad, Larry A. The Costs and Returns of Human Migration. *Journal of Political Economy*. 1962; 70(5):80–93. Part 2: Investment in Human Beings.
- Valenzuela, Abel, Jr. Day Labourers as Entrepreneurs? *Journal of Ethnic and Migration Studies*. 2001; 27(2):335–52.
- Waldinger, RD., Lichter, MI. *How the Other Half Works: Immigration and the Social Organization of Labor*. University of California Press; 2003.
- Waldinger, Roger. *Still the Promised City?*. Cambridge, MA: Harvard University Press; 1996.
- Wheatley, Christine. Push Back: U.S. Deportation Policy and the Reincorporation of Involuntary Return Migrants in Mexico\*. *The Latin Americanist*. 2011; 55(4):35–60.
- Williams, Allan M. Lost in Translation? International Migration, Learning and Knowledge. *Progress in Human Geography*. 2006; 30(5):586–607.
- Williams, Allan M. International Labour Migration and Tacit Knowledge Transactions: A Multi-Level Perspective. *Global Networks*. 2007; 7(1):29–50.
- Williams, Allan M., Baláž, Vladimir. What Human Capital, Which Migrants? Returned Skilled Migration to Slovakia from the UK. *International Migration Review*. 2005; 39(2):439–68.
- Woodruff, Christopher, Zenteno, Rene. Migration Networks and Microenterprises in Mexico. *Journal of Development Economics*. 2007; 82(2):509–28.



Zolniski, Christian. The Informal Economy in an Advanced Industrialized Society: Mexican Immigrant Labor in Silicon Valley. *The Yale Law Review*. 1994; 103(8):2305–35.

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**Table 1**

Skill types and levels and learning contexts created and used in analysis

Variable	Definition
Formal education	Years of completed schooling.
English	Sufficient knowledge of English such that a migrant recognizes it as a skill and may use it in a job.
On-the-job technical	Technical skills learned through observation, interaction, and other informal learning processes that can be transferred across occupations and industries (cooking, painting, framing, constructing a stone wall, auto body repair, operating and repairing machinery). In a few cases these involved on-the-job training classes, e.g., workplace safety classes.
Off-the-job technical	Technical skills similar to those above that migrants acquire in the home or in nonwork environments in communities of origin (working on a neighbor's home; appliance repair; working on the engine of a family car; specialized domestic activities, including the preparation of regional foods).
Social and organizational skills	Customer service skills, new ways of approaching work, new work habits (e.g., punctuality), entrepreneurial skills (e.g., initiative), self-confidence, leadership skills, teamwork, and follow-through. These are skills that migrants reported acquiring in specific occupational settings as a result of occupational change.
Skill level 1	Work that requires little training and involves one repetitive task, e.g. dishwasher, leather cutter, laborer who mows lawns.
Skill level 2	Requires experience and formal or informal training. Involves multitasking or the mastery of a specific skill, e.g., painter, ayudante (helper), gardener who can prune trees and build walls.
Skill level 3	Work based on extensive occupational mobility over time and mastering of all skills within an occupation through extensive formal or informal training, e.g., maestro albañil (master mason), shoe designer, factory floor supervisor, carpenter, nurse, teacher.

Source: Table 1.1, page 32 in Hagan, Hernandez-Leon, and Demonsant. 2015. *Skills of the "Unskilled": Work and Mobility among Mexican Migrants*. Oakland, CA: UC Press

**Table 2**  
Descriptive statistics for non-migrants and return migrants at time of interview, 2010 (N=375)

	Non-migrants		Migrants		T-test
	mean/%	(SD)	mean/%	(SD)	
<b>Personal &amp; household characteristics</b>					
Male (%)	54		90		p<0.05
Age in years (mean)	36	(14.2)	40	(13.5)	
Married/civil union (%)	81		84		
<b>Traditional human capital</b>					
Years of education (mean)	9	(4.6)	7	(4.3)	p<0.05
Years of age at first job (mean)	21	(8.6)	18	(6.3)	p<0.05
Years of work experience (mean)	16	(12.8)	22	(13.6)	p<0.05
Ever directed/supervised others (%)	42		37		
<b>Employment status</b>					
Employed (%)	65		56		
Self-employed without employees (%)	25		28		
Self-employed with employees (%)	10		16		
<b>Observations</b>	200		175		

**Table 3**

Migration and return migration experience and skill transfers (N=175)

	Mean/%	(SD)
<b>Migration characteristics</b>		
Total years spent in U.S. (mean)	3.8	(0.3)
Number of jobs in U.S. (mean)	2	(2.1)
Daily wage at last U.S. job in 2000 U.S. dollars (mean)	73	
Remitted money for savings and/or investment	41	
Moved to a higher skilled job in the U.S. (percent)	24	
Time in Mexico since most recent return (mean: years)	8	(0.7)
Entered U.S. without authorization (%)	93	
Deported back to Mexico (%)	17	
<b>Skills transferred by type (percent)</b>		
Formal education	2	
English language skills	10	
Technical skills	41	
Social skills	20	
Multiple skills	15	

Note: 53% of return migrants transferred at least one skill to their work in Mexico

**Table 4**

Log odds of business formation (N=375)

	Model 1	Model 2	Model 3
<b>Total Human capital</b>			
<i>Migration experience and skill transfers</i>			
U.S. Migration Experience	0.29 (0.34)		
<i>U.S.-Mexico skill transfer</i>			
Non-migrant (reference category)		0.00	0.00
Migrant, no skill transfer		-1.12 (0.58) †	-0.93 (0.59)
Migrant, transferred skills		0.91 (0.35) **	1.07 (0.37) **
<i>Education and work experience</i>			
Years of education		--	0.07 (0.04) †
Years of work experience		--	0.00 (0.02)
Ever directed/supervised others		--	0.84 (0.33) *
<b>Demographic characteristics</b>			
Married	-0.01 (0.40)	-0.02 (0.41)	-0.18 (0.60)
Age (years)	0.01 (0.01)	0.02 (0.01)	0.03 (0.04)
Gender= male	0.52 (0.42)	0.56 (0.42)	0.51 (0.85)
Constant	-2.78 (0.62) ***	-3.07 (0.64) ***	-4.53 (0.97) ***

\*\*\*  
p<0.001,

\*\*  
p<0.01,

\*  
p<0.05,

†  
p<0.1

Note: Standard errors are shown in parentheses.

**Table 5**

Log odds of business formation with detailed measures of skill transfer (N=375)

	<b>Model 1</b>	<b>Model 2</b>
<b>Total human capital</b>		
<i>Transferred skills from U.S. to current work in Mexico</i>		
Non-migrant (reference category)	0.00	0.00
	--	--
No transfer	-1.02	-1.03
	(0.59) †	(0.59) †
Transferred only English skills	1.65	1.66
	(0.82) *	(0.82) *
Transferred only technical skills	0.17	0.14
	(0.51)	(0.52)
Transferred only social skills	1.05	1.03
	(0.87)	(0.87)
Transferred multiple skills	1.90	--
	(0.49) ***	--
Transferred English and social skills	--	1.79
	--	(1.08) †
Transferred technical and social skills	--	1.62
	--	(0.60) **
Transferred English, technical, and social skills	--	2.71
	--	(0.94) **
<i>Education &amp; work experience</i>		
Years of education	0.04	0.03
	(0.04)	(0.04)
Years of work experience	0.00	0.01
	(0.02)	(0.02)
Ever directed/supervised others	0.93	0.94
	(0.35) **	(0.35) **
<b>Demographic characteristics</b>		
Married	0.19	0.22
	(0.45)	(0.45)
Age (years)	0.02	0.02
	(0.02)	(0.02)
Gender=male	0.60	0.59
	(0.45)	(0.45)
Constant	-4.42	-4.34
	(0.99) ***	(1.00) ***

\*\*\*  
p<0.001,



\*\*  
p<0.01,

\*  
p<0.05,

†  
p<0.1

Note: Standard errors are shown in parentheses.

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**Table 6**

Log odds of business formation among return migrants (N=175)

	Model 1	Model 2	Model 2
<b>Migration characteristics</b>			
Total time in U.S. (years)	0.01 (0.05)	0.00 (0.06)	0.00 (0.06)
Experienced U.S. occupational mobility	1.05 (0.50) *	0.51 (0.53)	0.46 (0.55)
Ln(daily wage)	0.07 (0.36)	0.01 (0.36)	0.05 (0.38)
Remitted money for savings and/or investment	0.00 (0.47)	-0.01 (0.49)	-0.20 (0.53)
Undocumented on most recent migration	-1.19 (0.75)	-1.94 (0.94) *	-1.35 (1.04)
Deported back to Mexico	-1.15 (0.81)	-1.12 (0.84)	-1.44 (0.91)
<b>Transferred skills from U.S. to current work in Mexico</b>			
No skill transfer (reference category)	--	0.00	0.00
Any skill transfer	--	2.363 (0.71) ***	--
Transferred only English skills	--	--	3.54 (1.14) **
Transferred only technical skills	--	--	1.47 (0.82) †
Transferred only social skills	--	--	2.60 (1.12) *
Transferred English and social skills	--	--	2.57 (1.30) *
Transferred technical and social skills	--	--	3.38 (0.95) ***
Transferred English, technical, and social skills	--	--	4.20 (1.35) **
Constant	-2.97 (2.39)	-3.52 (2.57)	-4.63 (2.93)

\*\*\*  
p<0.001,

\*\*  
p<0.01,

\*  
p<0.05,

†  
p<0.1

Note: Standard errors are shown in parentheses. All models include controls for years of education, years of work experience, ever promoted, age, gender, and married/in a civil union.

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**Table 7**

Log odds of applying skills learned in the U.S. to work in Mexico (N=175)

	<b>Model 1 English</b>	<b>Model 2 Social</b>	<b>Model 3 Technical</b>
<b>Traditional human capital</b>			
Years of education	0.21 (0.08) *	0.08 (0.06)	0.01 (0.05)
Years of work experience	-0.05 (0.08)	-0.06 (0.04)	-0.13 (0.04) **
Ever directed/supervised others	0.66 (0.66)	0.08 (0.45)	-0.32 (0.43)
<b>Demographic Characteristics</b>			
Married	0.13 (0.80)	0.74 (0.61)	0.03 (0.51)
Age (years)	-0.01 (0.07)	0.02 (0.04)	0.11 (0.04) **
Gender=male	-0.77 (0.97)	-1.49 (0.67) *	-0.63 (0.73)
<b>Migration characteristics</b>			
Total time spent in U.S. (years)	0.10 (0.07)	0.08 (0.05)	0.04 (0.05)
Experienced U.S. occupational mobility	1.34 (0.72) †	0.58 (0.50)	0.46 (0.46)
Ln(daily wage)	-0.43 (0.48)	0.28 (0.37)	0.29 (0.30)
Undocumented on most recent migration	-1.75 (1.04) †	-1.26 (0.82)	1.16 (0.82)
Deported back to Mexico	-1.23 (1.20)	-0.28 (0.61)	-0.24 (0.51)
<b>Transferred technical skills learned in Mexico to work in the U.S.</b>	0.56 (0.64)	0.53 (0.45)	2.50 (0.44) ***
Constant	-0.16 (3.26)	-1.55 (2.37)	-4.78 (2.16) *

\*\*\*  
p<0.001,\*\*  
p<0.01,\*  
p<0.05,†  
p<0.1

Note: Standard errors are shown in parentheses.