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## HOW JOB CHARACTERISTICS AFFECT INTERNATIONAL MIGRATION: THE ROLE OF INFORMALITY IN MEXICO

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### Abstract

Despite the importance given to employment opportunities as a primary motive for migration, previous studies have paid insufficient attention to the kinds of jobs that are more likely to retain workers in their countries of origin. We use information from a panel survey of Mexican adults to examine how job characteristics affect the risk of international migration. The sampling strategy and overall size of the survey allow us to analyze the effect of employment characteristics on migration from urban areas, which have much greater labor market diversity, and to separate our analysis by gender. We also distinguish migrants according to whether they migrate for work or for other reasons. We find informality to be a significant predictor of international migration. Even after controlling for individual factors including workers' wages, as well as various household- and community-level predictors, we find that workers employed in the informal sector have significantly higher odds of migrating than their counterparts in the formal sector. The pervasive nature of informality in many developing countries from which a high proportion of international migrants originate may therefore create a constant supply of workers who are predisposed to migrate. Our findings thus have important implications for a proper understanding of the effects of economic development on migration.

### Keywords

International migration; Informality; Mexico

### Introduction

Theories of international migration often emphasize the lack of economic opportunities in home countries as a primary motive for migration. The absence of good jobs at home is thought to push individuals into the migration stream. Yet, surprisingly, very little is known about the specific kinds of jobs that retain workers in their countries of origin or those that will encourage them to migrate. For example, how does an individual's occupation, the

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industry, or the type of establishment in which he or she works affect his or her propensity to migrate? If some types of jobs discourage migrants more than others, then it follows that not all job creation will have the same effect on deterring migration from sending countries. These questions therefore also have important implications for our understanding of the effect of economic growth on migration.

An individual's job may affect his or her odds of migrating most directly through its effect on current or expected earnings. Workers who earn lower wages in their country of origin or who may expect to earn higher wages in another country for the same set of skills will be more likely to migrate (Borjas 1999; Grogger and Hanson 2011; Todaro 1969). Long-term considerations may also play an important role. Jobs that provide greater opportunities for career advancement and promotion may retain workers in their countries of origin even if they do not currently pay higher wages. However, nonpecuniary factors associated with an individual's job, such as the level of autonomy, may also affect his or her propensity to migrate. Job stability may also be valued by workers independently of long-term wage expectations and may discourage them from migrating. Conversely, individuals who are less risk-averse and more enterprising may be more dissatisfied with a subordinate job and may seek to migrate as a way to satisfy their entrepreneurial ambitions.

The dearth of knowledge about the selectivity of migrants based on their employment characteristics is partially attributable to a scarcity of suitable data sources with detailed information about the jobs held by migrants and nonmigrants from a sufficiently large sample of individuals, particularly residents of urban areas where there is greater labor market diversity. In this article, we use information from a nationally representative panel survey of Mexican adults to examine the kinds of job conditions that encourage individuals to migrate. Because the survey is representative not only at the national level but also of individuals living in cities or towns of four different sizes, we are able to test models of migration for urban residents. We also separate our analysis by gender because Mexican men and women generally occupy different positions in the labor force. A final innovation of our study is that we are able to distinguish migrants' reasons for migrating: that is, whether they migrate for work or family reasons. This is an important consideration because employment conditions may have a different effect on individuals' decisions to migrate in search of jobs than on decisions to migrate for other reasons.

Given the importance of the informal sector in developing countries such as Mexico, we pay particular attention to the effect that informal employment has on individuals' odds of migrating. Although estimates vary, the informal sector in Mexico has been measured to be as high as 60 % nationally (Perry et al. 2007: Fig. 1.3). Jobs in the informal sector include a wide variety of activities such as retail sales, small-scale manufacturing and professional services. They are typically characterized by lower wages, greater instability, a lack of benefits, and poor working conditions. These characteristics may make informal sector workers more likely to migrate. However, recent work suggests a greater diversity in informal work than previously thought (Maloney 1999, 2004; Perry et al. 2007). According to this research, many workers in the informal sector, particularly those who are self-employed, are there voluntarily because of the greater autonomy it affords. Such informal workers may be less likely to migrate compared with salaried workers in the formal sector.

## Labor Market Characteristics in Sending Countries and International Migration

Existing theories of international migration are insufficiently explicit about the labor market characteristics that will encourage individuals to migrate, beyond income and employment status (being employed or not). In particular, none of them explicitly discuss how informality may encourage emigration from sending countries. In this section, we extend the insights from three theoretical perspectives to address the role that informal employment may have on individuals' risk of migration.

### Neoclassical Economics

An early theory of international migration derived from neoclassical economics sees the likelihood of migrating as a function of the difference between expected earnings in the countries of origin and destination (Borjas 1999; Harris and Todaro 1970; Todaro 1969; Todaro and Maruszko 1987). Although the decision to migrate is thought to be based on calculations regarding expected earnings over the long term, an individual's current employment status and income will weigh heavily in his or her calculations, among other reasons because they serve as proxies for future earnings. Typically, employment status is defined as a dichotomous variable (employed vs. not employed), which enters the migration function multiplied by wages as a measure of expected earnings (see Massey et al. 1993:434–436).<sup>1</sup>

Because, in the standard neoclassical model, migration is posited to be solely a function of employment status and income, the effects of any other job characteristics must necessarily be mediated by their effect on individuals' current or expected employment status and earnings. Thus, insofar as workers in the informal sector earn lower wages than their counterparts in the formal sector with the same set of skills, they will be more likely to migrate. Future considerations may also play a role. Because informal jobs generally afford workers less employment stability and fewer opportunities for promotion, and do not include benefits such as Social Security benefits in old age, being employed in the informal sector will reduce future earnings, thus increasing the likelihood of migrating (Sana and Massey 2000). However, the neoclassical perspective does not take into account how other aspects of informal employment may affect migration. These include, for example, a desire among some individuals for the greater job autonomy afforded by self-employment in the informal sector.

### New Economics of Migration

In contrast to neoclassical theory's emphasis on individuals as the locus of decision making, the new economics of migration theory assumes that migration decisions are made based on considerations of entire households (Stark 1991; Stark and Bloom 1985; Taylor 1987). Moreover, whereas neoclassical economics sees migration choices as exclusively a function of expected earnings, the new economics of migration theory takes into account households'

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<sup>1</sup>Neoclassical theory of migration focuses primarily on the economically active population. Individuals who are not employed because they are voluntarily out of the labor market—such as students, homemakers, and retired persons—do not fit well into this account.

needs to minimize risk and overcome market imperfections, such as a lack of properly functioning credit, insurance, and futures markets (Durand et al. 1996; Lindstrom 1996; Stark and Bloom 1985). The lack of properly functioning credit markets in developing countries such as Mexico may, for example, encourage households to send migrants abroad to finance improvements on dwellings or expand family businesses. Although the new economics of migration theory does not make any specific predictions regarding the effect of informality, following this theory's emphasis on household-level coping strategies, we may expect informality to influence decisions made at the household level: regardless of individuals' own employment conditions, those living in households in which a larger number of adults derive their income from informal employment may be encouraged to migrate to provide greater stability to the household finances. Similarly, households that derive their income from informal family enterprises may finance the expansion of such businesses by securing capital through the remittances of family members working abroad (Lindstrom and Lauster 2001). In sum, according to the new economics of migration theory, the effect of informality should be mediated by its effect on the household-level decision-making process rather than an individual's own employment preferences.

### **Segmented Labor Market Theory**

In contrast to both neoclassical and new economics theories, which focus on decisions about migration made at either the individual or the household level, segmented labor market theory takes a more macro-level perspective, focusing instead on market-level forces. According to this theory, migration is a result of the labor market demands of advanced industrialized countries (Dickens and Lang 1985; Piore 1979; Sassen 1988). Labor markets in these countries are hypothesized to be divided into two distinct sectors: a primary sector made up of secure, high-paying jobs that afford a full range of benefits and possibilities for promotion; and a secondary sector comprising unstable, low-paying jobs with poor (often hazardous) working conditions. Movement between these two sectors is thought to be relatively rare. Because of a systematic shortage of low-educated workers willing to take jobs in the secondary sector, advanced industrialized economies create a constant demand for immigrants for whom these jobs are preferable to those available to them in their countries of origin (Portes and Bach 1985; Taylor 1992).

Segmented labor market theory has been used primarily to explain how conditions in receiving countries attract international migrants and limit their employment opportunities after they arrive. International migration is therefore seen solely as a result of pull factors in advanced industrialized countries—particularly factors inherent to their labor markets—rather than push factors in sending countries (Massey et al. 1993:440–441). Researchers have not considered how labor market segmentation in sending countries may affect emigration. This is an important gap in the research literature on international migration because many developing countries that send a large number of migrants abroad have large secondary markets, particularly if we define informal sector jobs as belonging to the secondary market (Maloney 1999; Perry et al. 2007).

The informal sector is, of course, not completely coterminous with the secondary labor market. Some formal sector jobs may be considered to be part of the secondary sector

(Portes and Sassen-Koob 1987). Nevertheless, because of their inherent instability, low pay, lack of benefits, and poor working conditions, informal sector jobs clearly fit standard definitions of the secondary sector. These same job characteristics will make international migration a more appealing option for informal sector workers. A large informal sector will therefore be associated with a higher rate of emigration from sending countries.

Although informality is hardly unique to developing countries, it is in these countries where higher rates of informal market participation are found (Harris and Todaro 1970; Loayza 1996). A recent report by the World Bank, for example, found a clear negative relation between gross domestic product (GDP) per capita and the size of the informal market for a large sample of countries (Perry et al. 2007:37). In particular, numerous studies have documented the presence of a large informal sector in many Latin American countries (Maloney 2004; Perry et al. 2007; Portes and Haller 2005:414). As discussed earlier, informality may arise precisely because of limitations in capital and labor markets in less-developed countries.

Extending segmented labor market theory's framework, we may therefore argue that a large secondary or informal sector is an inherent characteristic of developing countries, which encourages emigration. This large informal sector creates a constant supply of workers ready to leave their jobs, just as the demand for secondary sector workers in advanced industrialized countries like the United States creates a constant demand for immigrant workers. Emigration may therefore be seen as the result of labor market conditions inherent to developing countries rather than individual- or household-level factors, even though the effect of these market conditions may be mediated through individual- and household-level decisions.

Implicit in this formulation of the effects of informality on emigration is the assumption that informal employment is an undesired condition—that it is a refuge for those left out of formal sector jobs. However, recent work by Perry et al. (2007) and Maloney (1999, 2004) has demonstrated that informal employment may often be a voluntary choice by individuals who value the nonpecuniary benefits of informal work, such as greater flexibility and autonomy. A key distinction made by these authors is that between informal workers who are self-employed and those who work as salaried workers in informal establishments. Perry et al. (2007:62–68) and Maloney (1999) found that a majority of self-employed workers are voluntary; they choose such informal jobs because they provide greater autonomy. By contrast, salaried workers are more likely to be in such jobs because they are excluded from more desirable jobs in the formal sector. In our analysis of migrant selectivity, it will therefore be important to distinguish informal workers according to whether they are self-employed or are employed by others in informal establishments.

To summarize, existing theories of international migration are not sufficiently explicit about the job characteristics that will encourage individuals to migrate, beyond income and (un)employment status. In this section, we extended the insights from three theoretical perspectives to derive some key predictions about the effects of informality on emigration from developing countries. First, according to neoclassical economics, the effect of informal employment will be mediated through its effects on earnings. Informal workers will be more

likely to migrate than their counterparts in the formal sector insofar as they earn lower wages and have less job security that will afford them consistent earnings in the future. Second, following the new economics of migration theory's emphasis on household-level coping strategies, we may expect informality to influence migration decisions made at the household level. Individuals will be encouraged to migrate to provide a greater stability to household finances when a large number of household members are employed in the informal sector. Individuals may also migrate to finance the expansion of family enterprises through remittances. Finally, extending segmented labor market theory, we argued that high emigration rates may be seen as a result of the labor market conditions in developing countries, which have high levels of informality. Informality leads to high emigration rates because informal workers are more dissatisfied with their working conditions. However, we must distinguish between self-employed workers, who often choose such informal jobs voluntarily for the greater autonomy and flexibility that they provide, and salaried workers in the informal sector, who are indeed often excluded from more desirable jobs in the formal sector and are therefore more likely to migrate.

## Data Structure and Analytical Strategy

In the following analysis, we rely on information extracted from the Mexican National Occupation and Employment Survey (*Encuesta Nacional de Ocupación y Empleo*, ENOE), which is the primary employment survey in Mexico (INEGI 2010). The ENOE has a rotating panel structure in which individuals are interviewed each quarter for five consecutive quarters. Panels are staggered such that each quarter, 20 % of the sample exits after completing five interviews and is replaced by a fresh panel. Thus, at any given time, 20 % of respondents in the sample are in their first, second, third, fourth, or fifth interviews, respectively. In each wave, basic sociodemographic information is collected from each household member. A separate questionnaire is then used to collect information about the employment characteristics of every household member aged 12 years or older.

Each time a household is reinterviewed, the roster of current residents is compared against the one from the previous quarter. For every former household member who no longer resides in the household, a reason for their absence is noted. One of the reasons is international migration; other reasons are internal migration within the state, internal migration to another state, and death. In the following analysis, we consider only those individuals who were part of the household in the first interview and who are, therefore, potentially at risk of migrating for an entire year. We use data from all panels in the ENOE that are observed for five full quarters from the first quarter of 2005 (when the ENOE series began) to the last quarter of 2010. This period spans 24 quarters and includes 20 complete panels (those that are observed for a full year).<sup>2</sup> Because we are interested in examining the

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<sup>2</sup>As in any survey involving the reinterview of respondents in multiple waves, some cases are lost because of sample attrition. The percentage of cases lost to attrition between consecutive waves of the ENOE is comparable to or lower than that in major longitudinal studies conducted in the United States (e.g., Fitzgerald et al, 1998). On average, 2.8 % of individuals from our analytical sample are lost between each of the consecutive waves (i.e., quarters). Some of these cases are due to refusals or incomplete interviews, while others may be due to the relocation of the entire household to another location within the country or abroad. In order to test the sensitivity of our analysis to sample attrition, we replicated our baseline models using an observation period of three quarters instead of four (i.e., four survey waves instead of five). The results were consistent with those presented in the tables in this article.



effect of job characteristics on the odds of emigration, we limit our sample to individuals of working age (age 15 to 55).

All independent variables included in the statistical models are drawn from the first interview. A dependent variable is created that captures not only whether a particular individual migrated abroad during the course of the following year (four additional quarters) but also whether he or she migrated for work or other reasons. The ENOE distinguishes eight possible reasons for migrating: work, study, marriage, separation or divorce, health reasons, reuniting with family, public safety reasons, or other reasons. Because of the relatively small number of cases in some of these categories, all reasons other than work are grouped. As we mention earlier, distinguishing the reason for migrating is important because we may expect the selectivity of migrants based on their current job characteristics to be substantially different for those who leave in search of work than for those who move to reunite with family members or to study abroad.

Multinomial logit models are used to test the effect of individuals' job characteristics on their odds of migrating for work and for other reasons, with nonmigrants as the baseline category. Separate models are tested for men and women because a considerable body of research suggests that they are differently selected for migration (Cerrutti and Massey 2001; Curran and Rivero-Fuentes 2003; Donato 1993, 1999; Kanaiaupuni 2000). Distinguishing migrants by gender is especially important in this case not only because women occupy very different positions in the labor market than men but also because informality may mean something qualitatively different for women (Cunningham 2001). For example, informal employment may provide women with greater flexibility to balance work and family life (Chant 2003; Maloney 2004; Perry et al. 2007), leading to a higher job satisfaction and a lower risk of migration compared with formally employed women. Our statistical analysis is limited to urban areas—defined as cities and towns with 15,000 or more residents—because they have much more complex labor markets with substantially more industrial and occupational diversity than rural areas. Informality is also a less meaningful distinction in rural areas where a large proportion of the population is engaged in production for self-consumption.

Finally, although our analysis focuses on the effect that job market characteristics have on the risk of international migration, in models available in Online Resource 1, we include domestic interstate migration for work and other reasons as alternative outcomes to international migration. The regression coefficients for international migration in these models are consistent with those presented in the article. Excluding domestic migration from the choice set, therefore, does not affect the substance of our findings. Differences in the effect of informal employment between domestic and international migration for women are briefly noted in our discussion of the results.

### **Predictors of Migration**

Our first predictor intended to capture an individual's labor market participation is employment status. Three categories are distinguished based on respondents' situation in the first interview: employed, unemployed, and not economically active. The last category

includes all those who are neither employed nor currently looking for a job: students, homemakers, retired persons, and those unable to work because of a disability.

Our second measure of employment status further distinguishes between those employed in the formal and informal sectors. A large research literature discusses the relative merits of various measurements of the informal sector (see Perry et al. 2007; Portes and Haller 2005). Two types of measurements are the most common. One relies on the size of the establishment in which a given individual is employed. Workers who are self-employed or who work in firms of five or fewer workers are often considered to be part of the informal sector. A variation of this definition has been used by the International Labour Organization (ILO) among others (Portes and Haller 2005:413–414). Another definition relies instead on workers' access to benefits mandated by law. Workers are considered to be employed in the informal sector insofar as they are excluded from healthcare and pension systems, for example. Perry et al. (2007:30) referred to this as the “legalistic” or “social protection” definition. Employers in the private sector in Mexico are required to register all workers in the national Social Security system, to which they must also make the necessary contributions. The Social Security system provides access to health services, and pensions in the case of disability or retirement, among other benefits.

In this study, we use the second definition of informality that relies on workers' access to Social Security benefits because it more closely captures standard definitions of the secondary labor market. However, both definitions overlap substantially and lead to similar estimates of the overall size of the informal sector in Mexico. Thus, only 7.1 % of urban workers in firms of five or fewer workers have access to Social Security from their job (or its equivalent in the public sector). Overall, 52.6 % of workers are employed in the informal sector in all waves included in our sample according to our definition based on access to Social Security, compared with 45.1 % based on the size of the firm.

As discussed in the theoretical section, an important distinction among informal sector workers is that between self-employed individuals and those employed by others in informal establishments. Perry et al. (2007) and Maloney (1999, 2004) argued that the former are more likely to be voluntarily in the informal sector, while the latter see informal employment as a coping strategy. Our third measure of employment status therefore further distinguishes informal workers according to whether they are self-employed or are employed by others.

Following the new economics of migration theory, we suggested that informality may influence migration decisions made at the household level. We therefore test the effect of household informality using two different measures: (1) the number of employed household members who are working in the informal sector (excluding the individual in question); and (2) a dichotomous variable indicating whether there are any self-employed workers in the household who also employ others—that is, head their own businesses (also excluding the individual in question). We also control for other household-level characteristics that may affect the odds of migrating: namely, the total number of household members and the total number of children in the household. Although members of larger households will tend to migrate at higher rates, having more dependent children may be expected to reduce the odds of migration for women (Cerrutti and Massey 2001; Kanaiaupuni 2000). The hypothesized



effect of all these household characteristics is net of household income because individuals in lower-income households will be more likely to migrate. We therefore control for the total household income in thousands of pesos per month.

Our multinomial logit models of migration include several other job characteristics that may account for the effect of informality on migration. However, because these job characteristics are available only for workers who actually have jobs, we test their effect in separate models including only employed individuals. First, consistent with the neoclassical theory of migration, informal workers may be more likely to migrate if they receive lower wages than their counterparts in the formal sector. We therefore control for workers' wages in thousands of pesos per month. Second, informal workers are more heavily concentrated in certain industries, such as construction, which pay workers much more in the United States than in Mexico for the same set of skills. Our models therefore also control for 11 industrial categories according to the North American Industry Classification System (NAICS) (see Table 4 for a list of the industrial categories). Finally, workers in the informal sector may be more likely to migrate because of the greater instability inherent in their jobs. Our models control for three indicators of job stability: union membership, job tenure, and firm size. Workers who are unionized or who are in jobs that they have held for many years will feel more secure about their future prospects and will be less likely to migrate. The higher unionization rates and average years of employment in formal sector jobs may in turn explain formal sector workers' lower migration rates. Similarly, jobs in larger firms will be considered more stable.

All our models control for the sociodemographic characteristics of respondents, including their age, educational attainment, marital status, and whether they were born in another Mexican state. A respondent's age is entered as a series of dummy variables to allow for a nonlinear association between age and risk of migration (Cerrutti and Massey 2001; Donato 1993). Similarly, education is specified in five categories. Controlling for educational attainment is particularly important because informal sector workers may be expected to have lower levels of education, which might also affect their risk of migration. Four marital status categories are also specified: single (used as the baseline category); married; cohabiting; and separated, divorced, or widowed. Because individuals who previously migrated from another part of Mexico may be predisposed to migrate to the United States in a process often referred to as "step-migration" (Fussell 2004), we also include as a predictor in all our models a dummy variable indicating whether the individual was born in another state within Mexico. Controlling for previous migration experience is important because individuals who moved from another state are also more likely to be employed in the informal sector (Cole and Sanders 1985).

Our regression models for migration also control for several contextual variables: that is, those that measure the conditions in the communities of origin. First, because individuals' decisions to migrate may depend not only on their own economic conditions but also those of the communities in which they live, we control for the unemployment rate and average wages. Individuals in communities with low average wages and high unemployment rates are expected to be more likely to migrate. Because the ENOE contains representative samples of 32 major cities, we are able to obtain accurate estimates for these oversampled

cities for each quarter. The unemployment rate and mean wages for other locations are approximated by the state-level values for these variables. Second, to examine the effect that informality has at the community level, we also include the percentage of informal-sector workers as a predictor of migration. Finally, research on international migration has emphasized the importance of social networks in encouraging migration (e.g., Curran and Rivero-Fuentes 2003; Davis et al. 2002). Information obtained through contact with individuals with prior migration experience can reduce the cost of migrating. We therefore include the number of residents with international migration experience at the municipality level as a predictor. The proportion of the municipal population who were return migrants in 2000 is computed from the population census.<sup>3</sup>

Although our sample is restricted to urban areas, defined as cities or towns with 15,000 or more residents, we further distinguish three categories of individuals according to the population size of their communities of origin: those living in cities with 15,000 to 99,999 residents, cities with more than 100,000 residents, and oversampled cities. Research on international migration has also identified significant differences in emigration rates across regions of Mexico (Durand et al. 2001). We therefore control for regional differences in emigration in all our models using regional dummy variables for five regions defined by the Mexican National Institute of Statistics, Geography and Informatics (INEGI 2009): Northwest, Northeast, Center, Center-west and South. Finally, because the economic recession that began in December of 2007 is likely to have reduced the overall rate of Mexican migration to the United States, we also include as a predictor a dummy variable distinguishing whether the respondents were first interviewed after the onset of the recession.

## Results

### Descriptive Results

Table 1 compares the employment status and other sociodemographic characteristics of urban Mexican men and women according to whether they migrated during the year of observation and the reason for which they migrated. The breakdown of individuals by employment status corroborates the importance of informal employment in Mexican society. More than one-half of all employed men and women work in the informal sector. More importantly for our purposes, informal employment seems to be associated with a higher incidence of migration, especially for work migrants.

### Migration Models for Men

Table 2 shows the results of our multinomial logit models for men. As discussed in the previous section, these models treat international migration for work and for other reasons as competing risks, thus allowing us to compare how individuals' employment conditions affect their odds of migrating for different reasons. The results from Model 1 in Table 2 indicate that employed men are significantly more likely to migrate for work than those who

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<sup>3</sup>See Lindstrom and Lauster (2001) for the use of this type of measure. Return migrants are all those who were living abroad five years prior to the census: that is, in 1995.

are not economically active, while those who are unemployed are more likely to migrate for work than men in either of the two other categories. The higher odds of migration for employed men may seem counterintuitive insofar as having a job might be expected to retain individuals in their communities of origin. On the other hand, men who are already employed have a demonstrated desire to work and may seek to increase their income or improve their working conditions by searching for employment elsewhere, whereas those who are voluntarily out of the labor market (e.g., students, and retired men) will naturally be less interested in finding a job, whether at home or in a foreign country.

Interestingly, after we disaggregate respondents' employment status according to whether they are employed in the formal or informal sector, in Model 2, only those employed in the informal sector are significantly more likely to migrate than the non-economically active; those employed in formal establishments are no more likely to migrate compared with the reference group. This difference in the selectivity of migrants employed in the formal and informal sectors highlights the importance of taking into account informality when examining the effect of employment status on the risk of migration. Failing to do so leads to an incomplete assessment of the effect that having a job may have on an individual's risk of migrating. The effect of employment depends strongly on whether it is in the formal or informal sector.

Model 3 further separates informal workers according to whether they are self-employed or employed by others. Consistent with previous studies showing that self-employed workers are more likely to be in the informal labor market voluntarily and are therefore presumably more satisfied with their employment conditions (Maloney 1999; Perry et al. 2007), self-employed workers are less likely to migrate than other informal workers. However, self-employed workers are still more likely to migrate than those who are employed in the formal sector (the difference is statistically significant at the .05 level). Instead of being more tied down by their private enterprise, these informal entrepreneurs seem to be encouraged to migrate either by a desire for more job stability or by their greater entrepreneurial ambitions.

The employment conditions encouraging men to migrate for work contrast sharply with those encouraging them to migrate for other reasons, such as family reunification or to study. The odds of migrating for these other reasons is highest for the non-economically active, which includes students and retired men. In contrast with the odds of migrating for work, which suggest that employed men are significantly more likely to migrate, the results of Model 1 indicate that employed men are significantly less likely to migrate for other reasons compared with the non-economically active used as the baseline category. Having a job clearly discourages men from leaving the country to reunite with family members or to study. These opposite findings for men migrating for work and for those migrating to reunite with their family or to study highlight the importance of distinguishing the reason for migrating. Failing to separate the reason for migrating leads to the misleading conclusion that employment has no significant effect on the odds of migration. Interestingly, when we further distinguish the employment status of men according to whether they are employed in the formal or informal sector, in Model 2, informal workers are still more likely to migrate compared with formal sector workers even when they migrate for reasons other than work.

Formal employment clearly binds workers to their communities of origin more than informal employment regardless of the reason for migrating.

Contrary to our expectations derived from the new economics of migration theory, the presence of an informal family business does not seem to increase men's odds of migrating for work. A larger number of informal sector workers in the household also does not have a significant effect in any of the models. These findings suggest that household-level considerations do not explain the effect of informality. Our other measures of household composition have significant effects on men's odds of migrating. Men in larger households are more likely to migrate, but this effect is limited to the number of adults. Consistent with previous studies, a large number of children in the household has no effect on men's odds of migrating (Massey and Espinosa 1997). Similarly, controlling for the total number of residents, men living in households with higher income levels have lower odds of migrating for work.

The coefficients for the remaining predictors in our models are largely consistent across model specifications. Migrant men are generally younger than their nonmigrating counterparts, although they are not in the youngest category (ages 15 to 24). Consistent with previous findings, men's educational attainment does not have a significant effect on their odds of migrating after all other factors are taken into account (Curran and Rivero-Fuentes 2003; Massey and Espinosa 1997). Interestingly, the negative coefficients for the highest educational categories for men migrating for work in Model 1 become nonsignificant after informal sector employment is taken into account in Model 2, suggesting that educational selectivity may be largely explained by the lower education level of men employed in the informal sector. Contrary to findings from previous studies (Kanaiaupuni 2000; Massey and Espinosa 1997), marital status has no significant effect on men's odds of migrating for work. However, single men are much more likely to migrate to reunite with their family or to study. Finally, prior migration experience within Mexico significantly increases men's odds of migrating for work but not for other reasons.

The coefficients for the contextual variables indicate that men living in cities with higher wage levels are less likely to migrate for work, while the unemployment rate and the size of the informal sector appear to have no significant effect on the odds of migrating according to the results of the models presented in Table 2. Individuals living in communities with a higher prevalence of migration according to the 2000 census have higher odds of migrating, confirming the importance of community-level migration networks. The coefficients for the different levels of urbanization indicate that men living in cities with a population size of more than 100,000 and those who live in the oversampled cities have significantly lower odds of migrating for work but not for other reasons. Finally, as expected, the U.S. economic recession significantly reduces Mexican men's odds of migrating for work. Still, the recession has no significant effect on men's odds of migrating for other reasons, such as family reunification or to study, which are less sensitive to the recession's effects on labor demand.

## Migration Models for Women

In contrast with men, women's employment status appears to have no significant effect on their odds of migrating internationally for work, according to the results presented in Table 3. Regardless of whether they are employed in the formal or the informal sector, employed women are no more likely to migrate abroad for work than those who are unemployed or not economically active. However, women's employment status does have a significant effect on their odds of migrating abroad for family reasons or to study. Being employed in the informal sector as opposed to the formal sector significantly increases the odds of migrating internationally for reasons other than work. Moreover, in models presented in Online Resource 1, in which domestic migration is included as an outcome, women employed in the informal sector also have significantly higher odds of migrating to other Mexican states for work.

Just as in the case of men, the presence of an informal family business does not seem to increase women's odds of migrating for work, although it does have a positive effect on their odds of migrating for other reasons. Having a greater number of children in the household has a significant negative effect on women's odds of migrating for work. Household income once again reduces women's odds of migrating for work, but not for other reasons.

The effects of individual demographic characteristics on the risk of migration for women are generally strong. Older women are much less likely to migrate than younger women. Contrary to men, whose risk of migration peaks at ages 25 to 34, women in that age group are no more likely to migrate than those in the youngest category (ages 15 to 24). Similarly, consistent with previous findings by Kanaiaupuni (2000), women migrants are positively selected by education. Marital status is also an important predictor of women's migration. Women who are separated, divorced, or widowed are more likely to migrate for work; married and cohabiting women in urban areas are less likely to migrate for other reasons compared with single women.<sup>4</sup>

## The Effect of Job Characteristics on Migration Among Employed Men

The results of the statistical models presented so far demonstrate that informal employment significantly increases the odds of migration for men relative to those employed in the formal sector as well as to those who are out of the labor market. In this section, we explore alternative explanations for the increased risk of migration among those who are informally employed. In order to examine whether the effect of informality is due to job-related factors, we limit our analysis to individuals who had jobs at the time of the first interview. Limiting our analysis to employed individuals allows us to more easily control for job characteristics—such as wages, union membership, and industrial sector—which are not applicable to individuals who are unemployed or out of the labor market. We also limit our analysis to men because their odds of migration were found to be more strongly associated with informal employment in the previous section.

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<sup>4</sup>The effects of educational attainment and marital status on the risk of migrating for work are generally stronger for women than for men. For every educational category except complete primary, the coefficients for women's educational attainment are significantly larger than those for men (at the .05 level).

Several alternative explanations for the effect of informality on migration were proposed in the theoretical section. First, extending neoclassical economics theory of migration, we suggested that informal workers might be more likely to migrate because of their lower earnings. We therefore control for workers' wages in all the regression models. Second, workers may be migrating not only in response to their absolute wage level, but also in response to the returns to their specific set of skills. Informal workers may feel underemployed given their marketable skills (Quinn and Rubb 2005; Riosmena 2009). All our models therefore also control for individual's level of education. In addition, workers may gain industry-specific skills that will be better rewarded in foreign markets. For example, a large proportion (77 %) of urban men in the construction industry are employed informally. These same workers with skills that are specific to the construction industry can earn substantially higher wages in the United States and may therefore be expected to migrate at higher rates. Our models therefore also control for the industry in which a worker is employed. Finally, we also suggested that informal workers may be more likely to migrate because of greater insecurity about their future job prospects. Our models therefore control for three indicators of job stability: union membership, job tenure, and firm size.

The results of the multinomial logit regression models for employed men are shown in Table 4. To conserve space, we show only the coefficients for the log odds of migration for work. Informality continues to be an important predictor of migration even when all other job characteristics are included as predictors in the regression models. Being employed in the informal market increases the odds of migrating for work by 65.4 % to 96.4 %, depending on the model in Table 4. Having lower wages, surprisingly, does not increase the odds of migration in any of the models. Workers' skills do not account for the effect of informality, although they do seem to affect the odds of migration. Male workers with a lower level of education, particularly those with only primary education, are slightly more likely to migrate abroad, where presumably they can receive greater returns to their limited skill set. Similarly, workers with certain industry-specific skills, such as those in agriculture and construction, are more likely to migrate. Finally, job stability as measured by a greater number of years an individual has worked in a firm, is significantly associated with a lower risk of migration. By contrast, neither union membership nor firm size seems to affect an individual's odds of migrating for work.<sup>5</sup>

## Conclusions

Theories of international migration have given insufficient attention to the effect that individuals' employment conditions have on their risk of migrating. Standard explanations derived from neoclassical economics focus exclusively on whether an individual is employed and his or her income. Yet, our analysis has demonstrated that other job characteristics may also influence migration decisions. In particular, we found informality to be a significant predictor of international migration. Even after many other individual-

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<sup>5</sup>Models 5 and 6 in Table 4 are tested using a limited sample because information regarding tenure and union membership is not available every quarter. Model 6 excludes self-employed individuals and employers for whom information about union membership is not available.



household-, and community-level factors were controlled, workers employed in the informal sector had significantly higher odds of migrating than their counterparts in the formal sector.

Understanding what kinds of jobs encourage workers to migrate—or conversely, what kinds of jobs retain workers in their countries of origin—is important if our objective is to build predictive theories regarding the effect of economic change on migration. Researchers have often assumed that job growth reduces emigration from sending countries, but not all job growth is the same. Growth in informal sector jobs may have little or no effect on emigration rates. This is an important conclusion given the pervasive nature of informality in many developing countries where a high proportion of international migrants originate.

According to some accounts, a large informal sector is in fact a condition inherent to developing countries, such as Mexico, where low levels of capital investment and poor credit markets often combined with rigid labor legislation and excessive regulations lead to chronic underemployment (Loayza 1996). Extending the insight from segmented labor market theory, we have suggested that this large informal sector may help perpetuate international migration from developing countries, just as a large secondary sector in advanced industrialized countries like the United States encourages immigration. Segmented labor market theorists have argued that advanced economies create a permanent demand for immigrant workers to fill low-quality jobs in the secondary sector (Sassen 1988). These jobs are presumably more desirable than the alternatives available to immigrants in their countries of origin. Similarly, the large number of informal jobs generated by economies in developing countries creates a constant supply of workers who are predisposed to migrate.

Interestingly, the fact that a disproportionate number of migrants are drawn from the informal sector in sending countries may help explain their greater participation in the secondary sector when they arrive at their destinations abroad. Because of their prior experience in informal jobs (including self-employment), migrants may be predisposed to seek similar employment when they arrive at their destination. Thus, the greater representation of immigrants in the secondary labor market may be at least partly explained by their prior labor market experience in their countries of origin.

If informality is indeed the result of the structural conditions faced by developing countries today, then we may shift our perspective one step backward in the causal chain and see underdevelopment as the ultimate cause of migration, and informality as one important pathway through which underdevelopment increases migration. Researchers working within the historical-structural tradition have argued that population movement is driven by broad structural changes that distort and sometimes stunt economic growth in developing countries (Arango 2000; Wood 1982). Our evidence suggests that the development process may encourage international migration by encouraging market segmentation and the growth of the informal sector. By focusing on the effect that employment in the informal sector has on migration, researchers might be able to bridge the disconnect between macro-level theory and individual decision making that confronts the historical-structural perspective (Portes 1997).

So why are informal workers more likely to migrate? Underlying the answer to this question are two different views of the informal sector. One view sees informality in a negative light. According to this view, informal sector workers migrate more often because they are disadvantaged: they receive lower returns to their skills than their counterparts in the formal sector, their jobs are less secure, and they work under poor conditions. All these characteristics will make informal workers more likely to migrate. We found partial support for this interpretation. Although individual wages were not a good predictor of migration after other factors were included in our models, workers with certain industry-specific skills that are better compensated in foreign markets were more likely to migrate. Similarly, workers who had been employed in a firm for a longer period of time, and who therefore had a reason to feel more secure in their current jobs, were less likely to migrate. Yet, these measures of returns to skills and job stability failed to fully explain the effect of informality.

A second, more positive view of informality holds that many informal workers, particularly those who are self-employed, are there voluntarily because of the greater autonomy and flexibility that such jobs afford (Maloney 1999, 2004; Perry et al. 2007). According to this view, the informal sector will attract some of the most ambitious and enterprising individuals in society. These highly motivated individuals will also be more likely to migrate in search of better opportunities abroad. Partial support was also found for this explanation: self-employed workers were significantly more likely to migrate than formal sector workers. However, even when self-employed workers were distinguished from other informal sector workers in our statistical models, the latter were still found to have higher odds of migrating than both formal sector workers and the self-employed.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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**Table 1**  
 Descriptive statistics for urban Mexican men and women by reason for migrating, 2005–2010

	Men			Women		
	Nonmigrant	Work Migrant	Other Migrant	Nonmigrant	Work Migrant	Other Migrant
Age						
15 to 24 years	32.6	35.7	51.2	29.9	48.5	46.6
25 to 34 years	24.3	33.3	24.6	24.9	25.4	31.7
35 to 44 years	23.3	20.3	14.1	24.6	15.5	10.4
45 to 55 years	19.8	10.8	10.1	20.6	10.7	11.3
Education						
Less than primary	7.4	9.5	5.6	9.3	4.3	5.7
Complete primary	18.7	26.0	13.7	19.3	20.4	11.6
Complete middle school	35.6	39.2	34.1	32.3	32.7	27.0
Complete high school or technical degree	23.4	17.2	32.9	25.7	30.3	30.5
Complete college or more	14.9	8.1	13.7	13.4	12.4	25.3
Marital Status						
Single	41.6	44.7	75.5	36.8	53.4	62.3
Married	44.4	39.8	18.4	44.2	23.8	28.3
Cohabiting	10.7	13.2	4.3	10.6	11.3	3.9
Separated, divorced, or widowed	3.3	2.4	1.8	8.4	11.5	5.5
Employment						
Employed	78.9	77.9	56.2	49.4	51.4	37.9
Employed informal sector	40.7	54.2	34.8	26.5	29.9	17.5
Employed informal: Self-employed	17.9	17.7	13.2	9.8	8.1	5.7
Employed informal: Other	22.9	36.5	21.5	16.7	21.8	11.8
Employed formal sector	38.1	23.6	21.1	22.9	21.2	20.5
Unemployed	4.0	8.7	6.1	2.9	3.4	6.3
Not economically active	17.1	13.4	37.7	47.7	45.2	55.8

**Table 2**  
 Results of multinomial logit models predicting international migration for work and other reasons for Mexican men, 2005–2010

	Model 1		Model 2		Model 3	
	For Work	For Other	For Work	For Other	For Work	For Other
Age (baseline 15 to 24 years)						
25 to 34 years	0.326** (0.112)	0.422* (0.213)	0.354** (0.113)	0.416 (0.215)	0.381** (0.112)	0.414 (0.216)
35 to 44 years	-0.149 (0.125)	0.387 (0.323)	-0.147 (0.126)	0.383 (0.326)	-0.096 (0.126)	0.379 (0.336)
45 to 55 years	-0.643** (0.145)	0.315 (0.346)	-0.656** (0.146)	0.287 (0.348)	-0.594** (0.146)	0.281 (0.361)
Education (baseline less than primary)						
Complete primary	0.118 (0.122)	-0.020 (0.391)	0.155 (0.122)	0.004 (0.390)	0.161 (0.123)	0.003 (0.390)
Complete middle school	-0.030 (0.125)	0.133 (0.354)	0.057 (0.126)	0.190 (0.357)	0.068 (0.127)	0.189 (0.359)
Complete high school or technical degree	-0.331* (0.138)	0.546 (0.340)	-0.230 (0.141)	0.601 (0.348)	-0.210 (0.141)	0.600 (0.345)
Complete college or more	-0.474** (0.178)	0.436 (0.352)	-0.319 (0.176)	0.569 (0.357)	-0.296 (0.177)	0.566 (0.357)
Marital Status (baseline single)						
Married	-0.029 (0.105)	-1.323** (0.275)	0.025 (0.107)	-1.270** (0.278)	0.049 (0.109)	-1.272** (0.289)
Cohabiting	0.142 (0.140)	-1.180** (0.307)	0.152 (0.141)	-1.160** (0.309)	0.166 (0.142)	-1.162** (0.31)
Separated, divorced, or widowed	-0.122 (0.230)	-0.997* (0.471)	-0.095 (0.231)	-0.970* (0.474)	-0.088 (0.232)	-0.971* (0.474)
Born out of State	0.216* (0.098)	0.298 (0.209)	0.233* (0.098)	0.287 (0.214)	0.234* (0.098)	0.287 (0.214)
Employment (baseline not economically active)						
Employed	0.313** (0.118)	-0.706** (0.209)				
Employed informal sector			0.493** (0.119)	-0.495* (0.241)		
Employed informal: Self-employed					0.301* (0.153)	-0.476 (0.368)
Employed informal: Other					0.549** (0.117)	-0.503* (0.240)
Employed formal sector			-0.097 (0.137)	-1.053** (0.239)	-0.141 (0.141)	-1.049** (0.245)
Unemployed	1.058** (0.155)	-0.204 (0.358)	1.038** (0.156)	-0.215 (0.358)	1.019** (0.157)	-0.214 (0.364)
Household Variables						
Number of household members	0.126** (0.025)	0.158** (0.054)	0.133** (0.025)	0.162** (0.055)	0.130** (0.025)	0.162** (0.056)
Number of children in household	-0.099* (0.040)	-0.177 (0.108)	-0.109** (0.040)	-0.177 (0.108)	-0.108** (0.040)	-0.177 (0.108)
Number of informal workers	0.077 (0.041)	-0.050 (0.092)	0.041 (0.041)	-0.077 (0.096)	0.041 (0.041)	-0.077 (0.095)



	Model 1		Model 2		Model 3	
	For Work	For Other	For Work	For Other	For Work	For Other
Informal family business	-0.124 (0.142)	0.487 (0.256)	-0.175 (0.143)	0.449 (0.260)	-0.191 (0.143)	0.450 (0.260)
Household income	-0.020** (0.008)	-0.002 (0.007)	-0.017* (0.007)	-0.001 (0.006)	-0.016* (0.007)	-0.001 (0.006)
Contextual Variables						
Mean wages	-0.065** (0.011)	-0.025 (0.027)	-0.067** (0.011)	-0.026 (0.027)	-0.068** (0.011)	-0.026 (0.027)
Unemployment rate	-0.031 (0.031)	-0.015 (0.070)	-0.035 (0.031)	-0.031 (0.070)	-0.036 (0.031)	-0.031 (0.070)
Percentage informal workers	0.003 (0.007)	0.013 (0.014)	0.007 (0.007)	0.015 (0.014)	0.007 (0.007)	0.015 (0.014)
International migrant networks	0.037** (0.007)	0.053** (0.015)	0.036** (0.007)	0.051** (0.015)	0.036** (0.007)	0.051** (0.015)
Urbanization (baseline 15,000 to 99,999)						
Population greater than 100,000	-0.332** (0.110)	0.121 (0.271)	-0.310** (0.110)	0.113 (0.275)	-0.308** (0.110)	0.113 (0.275)
Oversampled city	-0.362** (0.111)	-0.230 (0.279)	-0.357** (0.111)	-0.216 (0.281)	-0.356** (0.111)	-0.216 (0.281)
Region (baseline South)						
Northwest	0.530** (0.157)	0.755* (0.344)	0.544** (0.156)	0.759* (0.347)	0.547** (0.156)	0.759* (0.347)
Northeast	0.801** (0.164)	1.016* (0.409)	0.805** (0.165)	1.072** (0.408)	0.806** (0.165)	1.072** (0.408)
Center	0.591** (0.120)	0.425 (0.308)	0.579** (0.120)	0.452 (0.305)	0.574** (0.120)	0.452 (0.305)
Center-west	0.956** (0.123)	0.893** (0.302)	0.974** (0.124)	0.923** (0.303)	0.974** (0.124)	0.923** (0.303)
Recession	-0.516** (0.100)	-0.230 (0.258)	-0.516** (0.100)	-0.227 (0.259)	-0.517** (0.100)	-0.227 (0.258)
Constant	-3.749** (0.301)	-7.044** (0.683)	-3.911** (0.304)	-7.104** (0.693)	-3.931** (0.304)	-7.102** (0.692)
Pseudo- $R^2$	.0618		.0661		.0666	
$n$	299159		298976		298976	

Note: Standard errors are adjusted for within-household clustering using a Huber/White estimator.

\*  $p < .05$ ,

\*\*  $p < .01$  (two-tailed tests)

**Table 3**  
 Results of multinomial logit models predicting international migration for work and other reasons for Mexican women, 2005–2010

	Model 1		Model 2		Model 3	
	For Work	For Other	For Work	For Other	For Work	For Other
Age (baseline 15 to 24 years)						
25 to 34 years	-0.161 (0.195)	0.177 (0.194)	-0.133 (0.194)	0.187 (0.194)	-0.131 (0.193)	0.184 (0.193)
35 to 44 years	-0.663** (0.247)	-0.859** (0.287)	-0.635* (0.249)	-0.852** (0.288)	-0.632** (0.247)	-0.860** (0.286)
45 to 55 years	-0.836** (0.323)	-0.715* (0.291)	-0.870** (0.331)	-0.711* (0.292)	-0.866** (0.336)	-0.721* (0.285)
Education (baseline less than primary)						
Complete primary	0.823* (0.335)	-0.239 (0.333)	0.802* (0.337)	-0.232 (0.335)	0.802* (0.337)	-0.232 (0.335)
Complete middle school	0.724* (0.315)	-0.197 (0.333)	0.724* (0.315)	-0.183 (0.337)	0.724* (0.315)	-0.186 (0.336)
Complete high school or technical degree	1.064** (0.323)	0.235 (0.334)	1.087** (0.327)	0.257 (0.341)	1.088** (0.328)	0.254 (0.341)
Complete college or more	1.123** (0.325)	0.929** (0.323)	1.181** (0.332)	0.972** (0.334)	1.181** (0.333)	0.968** (0.333)
Marital Status (baseline single)						
Married	-0.408 (0.223)	-0.64** (0.218)	-0.441* (0.225)	-0.647** (0.219)	-0.440 (0.227)	-0.650** (0.220)
Cohabiting	0.183 (0.363)	-1.122** (0.269)	0.155 (0.371)	-1.124** (0.270)	0.155 (0.372)	-1.127** (0.270)
Separated, divorced, or widowed	0.615* (0.279)	-0.224 (0.285)	0.634* (0.281)	-0.224 (0.286)	0.635* (0.283)	-0.228 (0.288)
Born Out of State	0.204 (0.227)	0.669** (0.170)	0.202 (0.227)	0.667** (0.170)	0.201 (0.227)	0.668** (0.170)
Employment (baseline not economically active)						
Employed	0.153 (0.180)	-0.715** (0.159)				
Employed informal sector			0.216 (0.203)	-0.606** (0.187)		
Employed informal: Self-employed					0.196 (0.281)	-0.506 (0.307)
Employed informal: Other					0.223 (0.221)	-0.650** (0.208)
Employed formal sector			-0.023 (0.203)	-0.817** (0.198)	-0.024 (0.203)	-0.814** (0.198)
Unemployed	0.024 (0.302)	0.132 (0.285)	0.000 (0.301)	0.120 (0.285)	0.000 (0.301)	0.120 (0.285)
Household Variables						
Number of household members	0.261** (0.049)	0.109** (0.042)	0.264** (0.049)	0.112** (0.042)	0.264** (0.049)	0.112** (0.042)
Number of children in household	-0.292** (0.084)	-0.248** (0.091)	-0.294** (0.085)	-0.252** (0.090)	-0.294** (0.085)	-0.252** (0.090)
Number of informal workers	0.082 (0.090)	-0.033 (0.075)	0.066 (0.094)	-0.041 (0.072)	0.066 (0.094)	-0.040 (0.072)

	Model 1		Model 2		Model 3	
	For Work	For Other	For Work	For Other	For Work	For Other
Informal family business	-0.186 (0.287)	0.585** (0.221)	-0.270 (0.290)	0.577** (0.224)	-0.271 (0.289)	0.578** (0.224)
Household income	-0.034* (0.014)	0.006** (0.002)	-0.030* (0.013)	0.006** (0.002)	-0.030* (0.013)	0.006** (0.002)
Contextual Variables						
Mean wages	-0.035 (0.020)	-0.011 (0.017)	-0.039* (0.020)	-0.011 (0.017)	-0.039* (0.020)	-0.011 (0.017)
Unemployment rate	-0.184** (0.067)	0.046 (0.072)	-0.187** (0.067)	0.045 (0.072)	-0.187** (0.067)	0.046 (0.072)
Percentage informal workers	-0.015 (0.013)	-0.022 (0.013)	-0.013 (0.013)	-0.021 (0.013)	-0.013 (0.013)	-0.022 (0.013)
International migrant networks	0.030* (0.014)	0.066** (0.014)	0.031* (0.014)	0.067** (0.014)	0.031* (0.014)	0.067** (0.014)
Urbanization (baseline 15,000 to 99,999)						
Population greater than 100,000	-0.244 (0.218)	0.651** (0.245)	-0.247 (0.218)	0.657** (0.245)	-0.247 (0.218)	0.656** (0.245)
Oversampled city	-0.169 (0.219)	0.453* (0.219)	-0.158 (0.220)	0.454* (0.219)	-0.158 (0.220)	0.455* (0.219)
Region (baseline South)						
Northwest	1.218** (0.348)	1.040** (0.287)	1.183** (0.345)	1.040** (0.287)	1.183** (0.344)	1.040** (0.287)
Northeast	1.582** (0.352)	1.541** (0.317)	1.542** (0.353)	1.543** (0.318)	1.542** (0.353)	1.544** (0.317)
Center	0.675** (0.261)	0.030 (0.244)	0.672** (0.261)	0.028 (0.244)	0.672** (0.261)	0.029 (0.244)
Center-west	0.949** (0.300)	0.831** (0.237)	0.945** (0.301)	0.830** (0.237)	0.944** (0.301)	0.831** (0.237)
Recession	-0.207 (0.209)	-0.398* (0.169)	-0.183 (0.208)	-0.399* (0.169)	-0.183 (0.208)	-0.399* (0.169)
Constant	-6.089** (0.610)	-6.297** (0.611)	-6.080** (0.609)	-6.342** (0.606)	-6.081** (0.609)	-6.337** (0.605)
Pseudo- $R^2$	.0752		.0756		.0756	
$n$	336177		336087		336086	

Note: Standard errors are adjusted for within-household clustering using a Huber/White estimator.

\*  $p < .05$ ,

\*\*  $p < .01$  (two-tailed tests)

**Table 4**

Results of multinomial logit models predicting international emigration for work based on men's job characteristics in urban areas, 2005–2010

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Age (baseline 15 to 24 years)						
25 to 34 years	0.084 (0.117)	0.045 (0.123)	0.041 (0.125)	0.060 (0.124)	-0.155 (0.167)	-0.113 (0.191)
35 to 44 years	-0.423** (0.133)	-0.419** (0.139)	-0.426** (0.141)	-0.387** (0.140)	-0.628** (0.208)	-0.784** (0.246)
45 to 55 years	-1.045** (0.161)	-1.018** (0.168)	-1.049** (0.170)	-0.990** (0.170)	-1.189** (0.242)	-1.199** (0.320)
Education (baseline less than primary)						
Complete primary	0.232 (0.133)	0.285* (0.135)	0.283* (0.137)	0.340* (0.138)	0.238 (0.178)	0.395 (0.220)
Complete middle school	0.147 (0.139)	0.217 (0.142)	0.215 (0.144)	0.324* (0.151)	0.158 (0.19)	0.237 (0.236)
Complete high school or technical degree	-0.281 (0.159)	-0.142 (0.163)	-0.135 (0.165)	0.013 (0.171)	-0.261 (0.210)	-0.087 (0.262)
Complete college or more	-0.263 (0.191)	-0.365 (0.231)	-0.343 (0.232)	-0.039 (0.251)	-0.412 (0.325)	-0.366 (0.440)
Marital Status (baseline single)						
Married	-0.038 (0.112)	0.007 (0.119)	0.005 (0.121)	0.010 (0.120)	0.297 (0.157)	0.226 (0.186)
Cohabiting	-0.005 (0.152)	0.061 (0.158)	0.059 (0.161)	0.054 (0.159)	0.274 (0.222)	0.312 (0.261)
Separated, divorced, or widowed	0.025 (0.261)	0.036 (0.276)	0.051 (0.279)	0.062 (0.279)	0.695* (0.335)	0.620 (0.355)
Born out of state	0.223 (0.117)	0.151 (0.126)	0.164 (0.128)	0.166 (0.128)	0.195 (0.172)	0.312 (0.209)
Employment						
Informal sector	0.628** (0.091)	0.675** (0.096)	0.591** (0.121)	0.522** (0.122)	0.578** (0.126)	0.503** (0.147)
Individual wages		0.001 (0.006)	0.001 (0.006)	0.001 (0.007)	-0.007 (0.012)	0.002 (0.006)
Firm size			-0.002 (0.002)	0.000 (0.002)		
Years working at current job					-0.021* (0.010)	-0.031* (0.015)
Union membership						-0.221 (0.259)
Industry (baseline government)						
Agriculture and cattle				1.091** (0.340)		
Mining and electricity				0.078 (0.694)		
Manufacturing				0.555 (0.314)		
Construction				0.858** (0.324)		
Commerce				0.551 (0.320)		
Restaurants and hotels				0.731* (0.346)		

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Transportation and communication				0.319 (0.333)		
Professional and financial services				0.608 (0.359)		
Social services				-1.055* (0.459)		
Various services				0.577 (0.339)		
Missing industry				1.111 (0.585)		
Household Variables						
Number of household members	0.106** (0.026)	0.114** (0.027)	0.116** (0.027)	0.115** (0.027)	0.087* (0.037)	0.114** (0.042)
Number of children in household	-0.076 (0.040)	-0.060 (0.042)	-0.061 (0.042)	-0.064 (0.042)	-0.026 (0.054)	-0.042 (0.062)
Number of informal workers	0.027 (0.047)	0.020 (0.050)	0.013 (0.051)	0.008 (0.051)	0.087 (0.068)	-0.024 (0.082)
Informal family business	-0.392* (0.171)	-0.394* (0.176)	-0.393* (0.177)	-0.383* (0.177)	-0.807** (0.239)	-0.732* (0.287)
Contextual Variables						
Mean wages	-0.079** (0.013)	-0.080** (0.013)	-0.080** (0.014)	-0.082** (0.014)	-0.084** (0.020)	-0.097** (0.023)
Unemployment rate	-0.036 (0.037)	-0.045 (0.038)	-0.047 (0.039)	-0.043 (0.038)	-0.021 (0.064)	0.020 (0.073)
Percent informal workers	0.004 (0.008)	0.002 (0.008)	0.003 (0.008)	0.002 (0.008)	0.009 (0.011)	0.008 (0.012)
International migrant networks	0.024** (0.008)	0.026** (0.008)	0.024** (0.008)	0.025** (0.009)	0.025* (0.012)	0.028* (0.014)
Urbanization (baseline 15,000 to 99,999)						
Population greater than 100,000	-0.331** (0.128)	-0.339** (0.132)	-0.358** (0.134)	-0.327* (0.134)	-0.312 (0.176)	-0.256 (0.205)
Oversampled city	-0.246 (0.126)	-0.206 (0.129)	-0.222 (0.131)	-0.167 (0.130)	-0.312 (0.183)	-0.163 (0.212)
Region (baseline South)						
Northwest	0.384* (0.180)	0.446* (0.184)	0.452* (0.187)	0.421* (0.187)	0.052 (0.258)	0.043 (0.294)
Northeast	0.732** (0.190)	0.793** (0.197)	0.782** (0.201)	0.751** (0.201)	0.547* (0.264)	0.312 (0.299)
Center	0.572** (0.132)	0.572** (0.137)	0.580** (0.139)	0.559** (0.138)	0.521** (0.191)	0.491* (0.213)
Center-west	1.005** (0.139)	1.022** (0.144)	1.046** (0.147)	1.023** (0.147)	1.021** (0.194)	0.882** (0.213)
Recession	-0.603** (0.117)	-0.685** (0.124)	-0.695** (0.126)	-0.700** (0.127)	-0.566* (0.231)	-0.595* (0.295)
Constant	-3.380** (0.326)	-3.46** (0.338)	-3.369** (0.352)	-4.024** (0.429)	-3.324** (0.476)	-3.140** (0.587)
Pseudo-R <sup>2</sup>	.0701	.0751	.0759	.0815	.0809	.0849
n	233327	216629	211070	211070	99088	73790

Notes: Models are tested using multinomial logit regressions, although only results for migration for work are reported to conserve space. Models 5 and 6 are tested using a limited sample because information regarding tenure and union membership is not available every quarter. Model 6 excludes self-employed individuals and employers for whom information about union membership is not available. Standard errors are adjusted for within-household clustering using a Huber/White estimator.

(s) two-tailed tests

$p < .01$  \*\*  
 $p < .05$  \*  
 $p < .10$  \*

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