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

Andrés Villarreal[*]
University of Texas at Austin

Sarah Blanchard
University of Texas at Austin

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[*] Direct correspondence to Andrés Villarreal, Population Research Center, University of Texas, 1 University Station, G1800, Austin, TX 78712 (avilla@prc.utexas.edu).

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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 specifically 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, 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 where 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.

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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.[1] Yet, surprisingly, we know very little 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 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 pay higher wages at the present time. However, non-pecuniary 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 be something else that is 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

[1] For a general overview of standard explanations for international migration see Brown and Bean (2005), Hanson (2010), Massey (1999), and Massey et al. (1993).

dissatisfied with a subordinate job and may seek to migrate as a way to satisfy their entrepreneurial ambitions.

Part of the reason for the dearth of knowledge about the selectivity of migrants based on their employment characteristics is a scarcity of suitable data sources with detailed information of the jobs held by migrants and non-migrants from a sufficiently large sample of individuals, particularly residents of urban areas where there is greater labor market diversity. In this paper 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 not only representative 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 since 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' reason for migrating, that is, whether they migrate for work or family reasons. This is an important consideration because employment conditions may be expected to have a different effect on individuals' decision to migrate in search of jobs than 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 are often characterized by lower wages, greater instability, a lack of benefits and poor working conditions. These same 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 to salaried workers in the formal sector.

The remainder of the paper is organized as follows. In the next section we review what existing theories of international migration say about the role of labor markets and suggest how they need to be extended to address the importance of employment in the informal sector. After introducing the employment survey used in our study and describing our measures, we present the results of our statistical models of international migration. In the concluding section we discuss the implications of our findings.

LABOR MARKET CHARACTERISTICS IN SENDING COUNTRIES AND INTERNATIONAL MIGRATION

Existing theories of international migration are insufficiently explicit about the job characteristics that will encourage individuals to migrate, beyond their income and employment status (being employed or not). In particular, none of them explicitly discuss how informality may encourage emigration from sending countries.[2] 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 an individual's likelihood of migrating as a function of the difference between his or her expected earnings in the countries of origin and destination (Borjas 1999; Harris and Todaro 1970; Todaro 1969; Todaro and Maruszko 1987). While the decision to migrate is thought to be based on calculations regarding expected earnings over the long term, an individual's current

[2] Previous studies have included individuals' basic employment characteristics as predictors of migration (e.g., Fussell 2004; Fussell and Massey 2004; Massey and Espinosa 1997; Riosmena 2009). However, they have generally treated employment factors as controls or defined them using very broad categories. None of these studies deal explicitly with informal employment.

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 versus not employed), which enters the migration function multiplied by wages as a measure of expected earnings (see Massey et al. 1993: 434-436).[3]

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 informality generally affords workers less employment stability and fewer opportunities for promotion, being employed in the informal sector will reduce future earnings, thus increasing the likelihood of migrating. Not only do informal jobs generally have a flatter lifetime age-earnings curve than jobs in the formal sector, they also do not include benefits such as social security benefits in old age, that may discourage migration based on long-term considerations (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

[3] 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.

of expected earnings, the new economics of migration theory takes into account households' need 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. While 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 where a larger number of adults derive their income from informal employment may be encouraged to migrate in order 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 household levels, a third theoretical perspective that has been used to explain international migration known as 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 composed of unstable, low-paying jobs, with poor (often hazardous) working conditions. Movement between these two sectors is thought to be relatively rare. Due to a systematic shortage of low-educated workers willing to take up 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 once 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 since 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. There are formal sector jobs that may be considered as 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 we often find higher rates of informal market participation (Harris and Todaro 1970; Loayza 1996).

A recent report by the World Bank, for example, finds a clear negative relation between 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, more 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 non-pecuniary 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) find 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 the analysis of migrant selectivity

below 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 their income and employment status (defined as being employed or not). In this section we have 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 in order 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 in order 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 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 analysis below 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). Several features of the ENOE make it particularly well suited for examining the effect of individuals' job characteristics on their risk of migration. First, the ENOE contains details of the job characteristics of Mexican adults. Second, the ENOE is not only nationally-representative, but it is also representative of residents of each of the 31 Mexican states and the Federal District, and of residents of cities and towns of four different sizes. We are therefore able to test models of international migration from Mexican urban areas. Distinguishing urban areas is important for our purposes because of their greater occupational and industrial diversity, and because informality is a less meaningful distinction in rural areas where a large proportion of the population is engaged in production for self-consumption. Finally, the ENOE allows us to distinguish whether individuals migrated in search of a job or other reasons such as family re-unification or to study abroad. Being able to distinguish the reason for migrating is important because individuals migrating in search of a job are likely to be differently selected according to their employment characteristics than those moving for family reasons.

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 and fifth interviews respectively. In each wave, basic sociodemographic information is collected from each household member including his or her relation to the head of household, age, gender, education level, place of birth and marital status. A separate questionnaire is then used to collect information about the employment characteristics of every household member that is 12 years of age or older.

Each time a household is re-interviewed, 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; others are internal migration within the state, internal migration to another state and death. In the analysis below we consider only 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).[4] Because we are interested in examining the effect of job characteristics on the odds of emigration we limit our sample to individuals of working age (15 to 55).

All independent variables included in the statistical models are drawn from the first interview. A dependent variable is created which 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: for work, to study, due to a marriage, because of a separation or divorce, for health reasons, to reunite with family, for public safety reasons, or other reasons. Due to the relatively small number of cases in some of these categories, all reasons other than work are grouped together. As discussed above, 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

[4] As in any survey involving the re-interview of respondents in multiple waves, some cases are lost due to 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 U.S. (e.g., Fitzgerald, Gottschalk and Moffitt 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 below.

who leave in search of work than for those who move to reunite with family members or to study abroad. Because many women who migrate to the U.S. do so to reunite with family, it is particularly important to distinguish their reason for migrating (Cerrutti and Massey 2001; Curran and Rivero-Fuentes 2003; Donato 1993).

Multinomial logit models are used to test the effect of individuals' job characteristics on their odds of migrating for work and for other reasons, using non-migrants as the baseline category. Separate models are tested for men and women since a considerable body of research suggests that they are differently selected for migration (Cerrutti and Massey 2001; Curran and Rivero-Fuentes 2003; Donato 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 to formally employed women. Our statistical analysis is limited to urban areas, defined as cities and towns with 15,000 residents or more. Nationally, 41.1% of migrant men and 62.1% of migrant women originate in urban areas. As discussed above, urban areas have much more complex labor markets with substantially more industrial and occupational diversity than rural areas. Moreover, informality is a less meaningful criterion in rural areas where a large proportion of the population is engaged in subsistence agriculture.

Finally, although our analysis focuses on the effect that job market characteristics have on the risk of international migration, in models not presented here but available in the supplementary on-line material for this paper we include domestic inter-state 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 below. 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 below.

Predictors of Migration

Our first predictor meant to capture an individual's labor market participation is his or her 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 due to 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 (for a comprehensive discussion see Perry et al. [2007], and 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 5 or fewer workers are often considered to be part of the informal sector. Sometimes this definition of informality is further restricted by excluding professional workers. 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) refer 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. Public sector workers have a similar but separate system.

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 5 workers or less 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 to 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) argue 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: the number of employed household members who are working in the informal sector (excluding the individual in question); and a dichotomous variable indicating whether there are any self-employed workers in the household who also employ others, that is those who 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. While 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 since 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, since these job characteristics are only available 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 the construction industry, which pay workers much more in the U.S. compared to Mexico for the same set of skills. Our models therefore also control for eleven industrial categories according to the North American Industry Classification System (NAICS) (see table below for a list of the industrial categories). Finally, workers in the informal sector may be more likely to migrate due to the greater instability inherent in their jobs. Our models control for three indicators of job stability: union membership, job tenure, and firm size. Workers that are unionized or in jobs 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 in order to allow for a non-linear association between age and risk of migration (Cerrutti and Massey 2001; Donato 1993). Similarly,

education is specified in five categories: less than primary education (used as the baseline category); complete primary; complete middle school (*secundaria*); complete high school, teaching college or technical degree; and complete college degree or more. 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, widowed or divorced. Marriage has been found to reduce the odds of migration for Mexican men (Massey 1987; Massey and Espinosa 1997) especially in the context of a dynamic local labor market (Riosmena 2009), while the evidence for women is somewhat more mixed (Donato 1993; Kanaiaupuni 2000). Because individuals who have 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. These two aggregate measures are computed using the full ENOE samples for each quarter. Because the ENOE contains representative samples of 32 major cities we are able to obtain accurate estimates for these cities. The unemployment rate and mean wages for other locations are approximated by the state-level values for these variables. Second, in order 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, Stecklov and Winters 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 that were return migrants in 2000 is computed from the population census.[5]

Although our sample is restricted to urban areas, defined as cities or towns with 15,000 residents or more, 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, more than 100,000 residents, and over-represented cities. Research on international migration has also identified significant differences in emigration rates across regions of Mexico (Durand, Massey, and Zenteno, 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). 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.

[5] See Lindstrom and Lauster (2001) for the use of this type of measure. Return migrants are all those individuals that were living abroad five years prior to the census, that is in 1995.

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 informality in Mexican society. More than 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. For example, employment in the informal sector is much higher for work migrants than for non-migrants. The multivariate regression models below are intended to more rigorously test the effect of informality on international migration.

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 that are not economically active, while those that are unemployed are more likely to migrate for the same reason 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 (i.e., students, homemakers and retired men) will naturally be less interested in finding a job whether it be at home or in a foreign country.

Interestingly, once we disaggregate respondents' employment status according to whether they are employed in the formal or informal sector in Model 2 we find that only those employed in the informal sector are significantly more likely to migrate than the non-economically active, while those employed in formal establishments are no more likely to migrate compared to 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 between the coefficient for self-employed workers and those for the other four employment categories are all 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, home-makers, and retired men. In contrast to the odds of migrating for work, where employed men were significantly more likely to migrate, the results of Model 1 indicate that employed men are

significantly less likely to migrate for other reasons compared to 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 we continue to find that informal workers are more likely to migrate compared to 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 were found to 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. Clearly, the need to increase household income is an important motivation for men to seek employment abroad, but it does not explain the effect of informality.

The coefficients for the remaining predictors in our models are largely consistent across model specifications. Migrant men are generally younger than their non-migrating 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 once 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 non-significant once 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. In separate models not presented here we interacted our municipal-level measures of migration prevalence with individuals' employment in the informal sector to see whether social networks play a more important role in encouraging informal sector workers to migrate. However, we found no statistical difference in the effect of migration networks on the odds of migration of formal- and informal-sector workers. 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 over-represented 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. Yet 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 to 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 informal sectors, employed women are no more likely to migrate abroad for work than those that 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 the supplementary on-line material in which domestic migration was included as an outcome, women employed in the informal sector were also found to 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. As expected, having a greater number of children in the household has a stronger negative effect on women's odds of migrating for work (the difference in the corresponding coefficients for men and women is statistically significant at the .05 level). 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 25 to 34 years, women in that age group are no more likely to migrate than those in the youngest category (15 to 24 years). 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, while married and cohabiting women in urban areas are less likely to migrate for other reasons compared to single women.[6]

The Effect of Job Characteristics on Migration among Employed Men

The results of the statistical models presented above demonstrate that informal employment significantly increases the odds of migration for men relative to those employed in the formal sector as well as those who are out of the labor market. Informality was found to be a significant predictor of migration even when we controlled for a large number of individual-, household- and community-level predictors. 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 have 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, since their odds of migration were found to be more strongly associated with informal employment in the previous section.

[6] 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 for men (at the .05 level). Similarly, the coefficients for married and separated, divorced or widowed women are both significantly larger for women.

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 due to their lower earnings. We therefore control for workers' wages in all the regression models below. Second, workers may not only be migrating 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. Previous studies have found such underemployment to be associated with a higher risk of migration (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 of urban men in the construction industry are employed informally (77%). 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 due to 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. Only the coefficients for the log odds of migration for work are shown to conserve space. 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 65.9% to 96.6% depending on the model in Table 4. Having lower wages surprisingly does not increase the odds of migration in any of the models. Second, 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 education level, 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. To be sure, differences in workers' skill set are not the only reason why we may observe higher odds of migration for workers in certain industries compared to others. Some industries may provide less job security or may be characterized by harsher working conditions, all of which may also explain the effect of informality. Yet even after controlling for eleven basic industries, the coefficient for informal employment continues to be positive and statistically significant, suggesting that the greater prevalence of informality in certain industries does not account for the higher odds of migration among informal workers. 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.[7]

CONCLUSIONS

Existing 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 controlling for many other individual-, household- and community-level factors, workers employed in the informal sector had significantly higher odds of migrating than their counterparts in the formal sector.

[7] 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.

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 U.S. 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 create 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 pre-disposed to seek similar employment when they arrive in their destination. Or perhaps knowing that these are the only types of jobs available to immigrants in

the destination country, only those willing to participate in the secondary sector will leave. 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). Historical-structural theorists generally see the effect of these structural changes through the lens of Marxism. The development of peripheral countries is thought to be distorted by the unequal relation with advanced capitalist countries as mediated by changes in class structures (Cardoso and Faletto 1979). Our evidence suggests that the development process may encourage international migration for other reasons, namely 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 once 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 skill 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 that are self-employed, are there voluntarily because of the greater autonomy and flexibility 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 then both formal sector workers and the self-employed.

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Table 1: Descriptive Statistics For Urban Mexican Men and Women by Reason for Migrating, 2005-2010

	Men			Women		
	non-migrant	work migrant	other migrant	non-migrant	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**	0.421*	0.354**	0.415	0.380**	0.413
	(0.112)	(0.213)	(0.113)	(0.215)	(0.112)	(0.216)
35 to 44 years	-0.149	0.387	-0.147	0.383	-0.096	0.379
	(0.125)	(0.323)	(0.126)	(0.326)	(0.126)	(0.336)
45 to 55 years	-0.641**	0.315	-0.655**	0.287	-0.593**	0.282
	(0.145)	(0.346)	(0.146)	(0.348)	(0.146)	(0.361)
Education (baseline less than primary)						
Complete primary	0.119	-0.021	0.156	0.003	0.162	0.003
	(0.122)	(0.391)	(0.122)	(0.390)	(0.123)	(0.390)
Complete middle school	-0.028	0.133	0.059	0.191	0.070	0.189
	(0.125)	(0.354)	(0.126)	(0.357)	(0.127)	(0.359)
Complete high school or technical degree	-0.329*	0.547	-0.228	0.602	-0.208	0.600
	(0.138)	(0.340)	(0.141)	(0.348)	(0.141)	(0.345)
Complete college or more	-0.472**	0.437	-0.316	0.570	-0.294	0.567
	(0.178)	(0.352)	(0.176)	(0.357)	(0.177)	(0.357)
Marital status (baseline single)						
Married	-0.029	-1.323**	0.026	-1.269**	0.049	-1.272**
	(0.105)	(0.275)	(0.106)	(0.278)	(0.109)	(0.289)
Cohabiting	0.143	-1.180**	0.152	-1.161**	0.167	-1.163**
	(0.139)	(0.307)	(0.141)	(0.309)	(0.142)	(0.310)
Separated, divorced or widowed	-0.125	-0.999*	-0.097	-0.972*	-0.090	-0.973*
	(0.230)	(0.471)	(0.231)	(0.474)	(0.232)	(0.474)
Born out of state	0.215*	0.297	0.232*	0.286	0.233*	0.286
	(0.098)	(0.209)	(0.098)	(0.214)	(0.098)	(0.214)
Employment (baseline not econ. active)						
Employed	0.312**	-0.707**				
	(0.118)	(0.209)				
Employed informal sector			0.492**	-0.496*		
			(0.119)	(0.241)		
Employed informal – Self-employed					0.301*	-0.477
					(0.153)	(0.368)
Employed informal – Other					0.548**	-0.503*
					(0.117)	(0.240)
Employed formal sector			-0.098	-1.053**	-0.142	-1.050**
			(0.137)	(0.239)	(0.141)	(0.245)
Unemployed	1.054**	-0.206	1.034**	-0.218	1.016**	-0.217
	(0.155)	(0.358)	(0.156)	(0.358)	(0.157)	(0.363)
Household Variables						
Number of household members	0.126**	0.158**	0.132**	0.162**	0.130**	0.162**
	(0.025)	(0.054)	(0.025)	(0.055)	(0.025)	(0.056)
Number of children in household	-0.100*	-0.177	-0.109**	-0.177	-0.108**	-0.177
	(0.040)	(0.108)	(0.040)	(0.108)	(0.040)	(0.108)
Number of informal workers	0.078	-0.050	0.041	-0.077	0.042	-0.077
	(0.041)	(0.092)	(0.041)	(0.096)	(0.041)	(0.095)
Informal family business	-0.124	0.487	-0.175	0.449	-0.191	0.450
	(0.142)	(0.256)	(0.143)	(0.260)	(0.143)	(0.260)
Household income	-0.020**	-0.002	-0.017*	-0.001	-0.016*	-0.001
	(0.008)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)
Contextual Variables						
Mean wages	-0.065**	-0.025	-0.067**	-0.026	-0.067**	-0.026
	(0.011)	(0.027)	(0.011)	(0.027)	(0.011)	(0.027)
Unemployment rate	-0.031	-0.015	-0.035	-0.031	-0.036	-0.031
	(0.031)	(0.070)	(0.031)	(0.070)	(0.031)	(0.070)

(continues)

Table 2, continued

	Model 1		Model 2		Model 3	
	For work	For other	For work	For other	For work	For other
Percent informal workers	0.003	0.013	0.006	0.015	0.007	0.015
	(0.007)	(0.014)	(0.007)	(0.014)	(0.007)	(0.014)
Int. migrant networks	0.037**	0.053**	0.036**	0.051**	0.036**	0.051**
	(0.007)	(0.015)	(0.007)	(0.015)	(0.007)	(0.015)
Urbanization (baseline 15,000 to 99,999)						
Population greater than 100,000	-0.332**	0.121	-0.311**	0.113	-0.308**	0.113
	(0.110)	(0.271)	(0.110)	(0.275)	(0.110)	(0.275)
Over-represented city	-0.363**	-0.230	-0.358**	-0.216	-0.357**	-0.216
	(0.111)	(0.279)	(0.111)	(0.281)	(0.111)	(0.281)
Region (baseline South)						
Northwest	0.531**	0.755*	0.544**	0.759*	0.547**	0.759*
	(0.157)	(0.344)	(0.156)	(0.347)	(0.156)	(0.347)
Northeast	0.800**	1.016*	0.804**	1.071**	0.805**	1.071**
	(0.164)	(0.409)	(0.165)	(0.408)	(0.165)	(0.408)
Center	0.590**	0.424	0.578**	0.451	0.573**	0.451
	(0.120)	(0.308)	(0.120)	(0.305)	(0.120)	(0.305)
Center-west	0.957**	0.893**	0.975**	0.923**	0.975**	0.923**
	(0.123)	(0.302)	(0.124)	(0.303)	(0.124)	(0.303)
Recession	-0.516**	-0.230	-0.516**	-0.227	-0.517**	-0.227
	(0.100)	(0.258)	(0.100)	(0.259)	(0.100)	(0.258)
Constant	-3.754**	-7.048**	-3.916**	-7.107**	-3.936**	-7.105**
	(0.301)	(0.683)	(0.304)	(0.693)	(0.304)	(0.692)
Pseudo-R-squared	0.0617		0.0661		0.0665	
n	299,653		299,470		299,470	

Note: Standard errors adjusted for within-household clustering using 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	-0.162	0.177	-0.133	0.187	-0.132	0.183
	(0.195)	(0.194)	(0.194)	(0.194)	(0.193)	(0.193)
35 to 44 years	-0.663**	-0.858**	-0.634*	-0.851**	-0.631*	-0.859**
	(0.247)	(0.287)	(0.249)	(0.288)	(0.247)	(0.286)
45 to 55 years	-0.836**	-0.715*	-0.869**	-0.711*	-0.866**	-0.721*
	(0.323)	(0.291)	(0.331)	(0.292)	(0.336)	(0.285)
Education (baseline less than primary)						
Complete primary	0.823*	-0.239	0.802*	-0.232	0.802*	-0.232
	(0.335)	(0.333)	(0.337)	(0.335)	(0.337)	(0.335)
Complete middle school	0.724*	-0.197	0.723*	-0.183	0.724*	-0.186
	(0.315)	(0.333)	(0.315)	(0.337)	(0.315)	(0.336)
Complete high school or technical degree	1.064**	0.236	1.087**	0.257	1.087**	0.254
	(0.323)	(0.334)	(0.327)	(0.341)	(0.328)	(0.341)
Complete college or more	1.123**	0.930**	1.180**	0.973**	1.181**	0.969**
	(0.325)	(0.323)	(0.332)	(0.334)	(0.333)	(0.333)
Marital status (baseline single)						
Married	-0.407	-0.638**	-0.440	-0.645**	-0.439	-0.648**
	(0.223)	(0.218)	(0.225)	(0.219)	(0.227)	(0.220)
Cohabiting	0.183	-1.122**	0.154	-1.124**	0.155	-1.127**
	(0.363)	(0.269)	(0.371)	(0.270)	(0.372)	(0.270)
Separated, divorced or widowed	0.615*	-0.224	0.634*	-0.224	0.635*	-0.227
	(0.279)	(0.285)	(0.281)	(0.286)	(0.283)	(0.288)
Born out of state	0.203	0.667**	0.201	0.666**	0.201	0.666**
	(0.227)	(0.170)	(0.227)	(0.170)	(0.227)	(0.170)
Employment (baseline not econ. active)						
Employed	0.152	-0.717**				
	(0.180)	(0.159)				
Employed informal sector			0.215	-0.609**		
			(0.203)	(0.187)		
Employed informal – Self-employed					0.196	-0.510
					(0.281)	(0.307)
Employed informal – Other					0.222	-0.653**
					(0.221)	(0.208)
Employed formal sector			-0.023	-0.818**	-0.024	-0.815**
			(0.203)	(0.198)	(0.203)	(0.198)
Unemployed	0.025	0.133	0.000	0.121	0.000	0.120
	(0.302)	(0.285)	(0.301)	(0.285)	(0.301)	(0.285)
Household Variables						
Number of household members	0.261**	0.108**	0.264**	0.112**	0.263**	0.112**
	(0.048)	(0.042)	(0.049)	(0.042)	(0.049)	(0.042)
Number of children in household	-0.292**	-0.248**	-0.294**	-0.251**	-0.293**	-0.252**
	(0.084)	(0.091)	(0.085)	(0.090)	(0.085)	(0.090)
Number of informal workers	0.082	-0.032	0.066	-0.040	0.066	-0.039
	(0.090)	(0.075)	(0.094)	(0.072)	(0.094)	(0.072)
Informal family business	-0.186	0.584**	-0.271	0.576**	-0.271	0.577**
	(0.287)	(0.220)	(0.290)	(0.224)	(0.289)	(0.224)
Household income	-0.034*	0.006**	-0.030*	0.006**	-0.030*	0.006**
	(0.014)	(0.002)	(0.013)	(0.002)	(0.013)	(0.002)
Contextual Variables						
Mean wages	-0.035	-0.011	-0.039*	-0.011	-0.039*	-0.011
	(0.020)	(0.017)	(0.020)	(0.017)	(0.020)	(0.017)
Unemployment rate	-0.184**	0.046	-0.187**	0.045	-0.187**	0.046
	(0.067)	(0.072)	(0.067)	(0.072)	(0.067)	(0.072)

(continues)

Table 3, continued

	Model 1		Model 2		Model 3	
	For work	For other	For work	For other	For work	For other
Percent informal workers	-0.016	-0.022	-0.013	-0.022	-0.013	-0.022
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Int. migrant networks	0.030*	0.066**	0.031*	0.067**	0.031*	0.067**
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Urbanization (baseline 15,000 to 99,999)						
Population greater than 100,000	-0.244	0.651**	-0.247	0.657**	-0.247	0.657**
	(0.218)	(0.245)	(0.218)	(0.245)	(0.218)	(0.245)
Over-represented city	-0.169	0.453*	-0.159	0.454*	-0.159	0.455*
	(0.219)	(0.219)	(0.220)	(0.219)	(0.220)	(0.219)
Region (baseline South)						
Northwest	1.219**	1.040**	1.185**	1.040**	1.184**	1.040**
	(0.348)	(0.287)	(0.345)	(0.287)	(0.344)	(0.287)
Northeast	1.584**	1.541**	1.544**	1.544**	1.544**	1.545**
	(0.353)	(0.317)	(0.353)	(0.318)	(0.353)	(0.317)
Center	0.676**	0.030	0.673**	0.028	0.672**	0.029
	(0.261)	(0.244)	(0.261)	(0.245)	(0.261)	(0.244)
Center-west	0.951**	0.833**	0.947**	0.832**	0.947**	0.832**
	(0.300)	(0.237)	(0.301)	(0.237)	(0.301)	(0.237)
Recession	-0.206	-0.398*	-0.183	-0.398*	-0.182	-0.399*
	(0.208)	(0.169)	(0.208)	(0.169)	(0.208)	(0.169)
Constant	-6.089**	-6.300**	-6.080**	-6.344**	-6.081**	-6.339**
	(0.609)	(0.611)	(0.608)	(0.606)	(0.608)	(0.605)
Pseudo-R-squared	0.0752		0.0755		0.0756	
n	336,542		336,452		336,451	

Note: Standard errors adjusted for within-household clustering using 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	0.083	0.046	0.041	0.06	-0.154	-0.112
	(0.117)	(0.123)	(0.125)	(0.124)	(0.166)	(0.191)
35 to 44 years	-0.423**	-0.419**	-0.426**	-0.387**	-0.626**	-0.782**
	(0.133)	(0.139)	(0.141)	(0.14)	(0.207)	(0.246)
45 to 55 years	-1.044**	-1.017**	-1.048**	-0.989**	-1.185**	-1.195**
	(0.161)	(0.168)	(0.17)	(0.17)	(0.242)	(0.319)
Education (baseline less than primary)						
Complete primary	0.233	0.286*	0.284*	0.341*	0.242	0.398
	(0.133)	(0.135)	(0.137)	(0.138)	(0.178)	(0.22)
Complete middle school	0.148	0.218	0.216	0.325*	0.162	0.24
	(0.139)	(0.142)	(0.144)	(0.151)	(0.19)	(0.236)
Complete high school or technical degree	-0.280	-0.141	-0.134	0.014	-0.256	-0.081
	(0.159)	(0.163)	(0.165)	(0.171)	(0.21)	(0.262)
Complete college or more	-0.261	-0.362	-0.341	-0.038	-0.406	-0.36
	(0.191)	(0.231)	(0.232)	(0.251)	(0.325)	(0.44)
Marital status (baseline single)						
Married	-0.038	0.007	0.005	0.01	0.296	0.224
	(0.112)	(0.119)	(0.121)	(0.12)	(0.157)	(0.185)
Cohabiting	-0.005	0.061	0.059	0.054	0.274	0.313
	(0.152)	(0.158)	(0.161)	(0.159)	(0.222)	(0.261)
Separated, divorced or widowed	0.024	0.036	0.052	0.063	0.694*	0.622
	(0.261)	(0.276)	(0.279)	(0.279)	(0.335)	(0.354)
Born out of state	0.223	0.15	0.163	0.165	0.196	0.313
	(0.117)	(0.126)	(0.128)	(0.128)	(0.172)	(0.209)
Employment						
Informal sector	0.628**	0.676**	0.592**	0.523**	0.58**	0.506**
	(0.091)	(0.096)	(0.121)	(0.122)	(0.126)	(0.147)
Individual wages		0.001	0.001	0.001	-0.007	0.002
		(0.006)	(0.006)	(0.007)	(0.012)	(0.006)
Firm size			-0.002	0		
			(0.002)	(0.002)		
Years working at current job					-0.021*	-0.031*
					(0.01)	(0.015)
Union membership						-0.218
						(0.259)
Industry (baseline government)						
Agriculture and cattle				1.09**		
				(0.34)		
Mining and electricity				0.079		
				(0.694)		
Manufacturing				0.555		
				(0.314)		
Construction				0.855**		
				(0.324)		
Commerce				0.55		
				(0.32)		
Restaurants and hotels				0.73*		
				(0.346)		
Transportation and communication				0.318		
				(0.333)		
Professional and financial services				0.607		
				(0.359)		
Social services				-1.054*		
				(0.459)		

(continues)

Table 4, continued

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Various services				0.577		
				(0.339)		
Missing industry				1.112		
				(0.585)		
Household Variables						
Number of household members	0.106**	0.114**	0.116**	0.115**	0.087*	0.114**
	(0.026)	(0.027)	(0.027)	(0.027)	(0.037)	(0.042)
Number of children in household	-0.077	-0.06	-0.062	-0.064	-0.027	-0.042
	(0.040)	(0.041)	(0.042)	(0.042)	(0.054)	(0.062)
Number of informal workers	0.027	0.02	0.013	0.008	0.087	-0.024
	(0.047)	(0.05)	(0.051)	(0.051)	(0.068)	(0.082)
Informal family business	-0.392*	-0.393*	-0.392*	-0.383*	-0.807**	-0.732*
	(0.171)	(0.176)	(0.177)	(0.177)	(0.239)	(0.288)
Contextual Variables						
Mean wages	-0.079**	-0.08**	-0.08**	-0.081**	-0.083**	-0.097**
	(0.013)	(0.013)	(0.014)	(0.014)	(0.02)	(0.023)
Unemployment rate	-0.036	-0.045	-0.046	-0.042	-0.021	0.019
	(0.037)	(0.038)	(0.039)	(0.038)	(0.064)	(0.073)
Percent informal workers	0.004	0.002	0.003	0.002	0.009	0.007
	(0.008)	(0.008)	(0.008)	(0.008)	(0.011)	(0.012)
Int. migrant networks	0.024**	0.026**	0.024**	0.025**	0.025*	0.027*
	(0.008)	(0.008)	(0.008)	(0.009)	(0.012)	(0.013)
Urbanization (baseline 15,000 to 99,999)						
Population greater than 100,000	-0.331**	-0.339**	-0.358**	-0.327*	-0.312	-0.255
	(0.128)	(0.132)	(0.134)	(0.134)	(0.176)	(0.205)
Over-represented city	-0.247*	-0.207	-0.223	-0.169	-0.315	-0.165
	(0.126)	(0.129)	(0.131)	(0.13)	(0.183)	(0.212)
Region (baseline South)						
Northwest	0.385*	0.447*	0.453*	0.422*	0.052	0.045
	(0.180)	(0.184)	(0.187)	(0.187)	(0.258)	(0.294)
Northeast	0.733**	0.793**	0.783**	0.751**	0.547*	0.312
	(0.190)	(0.197)	(0.201)	(0.201)	(0.264)	(0.299)
Center	0.572**	0.571**	0.579**	0.558**	0.52**	0.49*
	(0.132)	(0.137)	(0.139)	(0.138)	(0.191)	(0.213)
Center-west	1.007**	1.023**	1.048**	1.024**	1.022**	0.884**
	(0.139)	(0.144)	(0.147)	(0.147)	(0.194)	(0.213)
Recession	-0.603**	-0.685**	-0.696**	-0.701**	-0.565*	-0.594*
	(0.117)	(0.124)	(0.126)	(0.127)	(0.231)	(0.295)
Constant	-3.385**	-3.465**	-3.375**	-4.028**	-3.336**	-3.153**
	(0.326)	(0.337)	(0.352)	(0.429)	(0.476)	(0.587)
Pseudo-R-squared	0.0700	0.0750	0.0758	0.0814	0.0808	0.0847
n	233,731	217,001	211,427	211,427	99,311	73,966

Notes: Models 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 adjusted for within-household clustering using Huber/White estimator.

*p<.05 **p<.01 (two-tailed tests)

APPENDIX A

Table A1: Results of Multinomial Logit Models Predicting International and Domestic (Inter-state) Migration for Work and Other Reasons for Mexican Men and Women, 2005-2010

	Men				Women			
	Int. mig. for work	Int. mig. for other	Dom. mig. for work	Dom. mig. for other	Int. mig. for work	Int. mig. for other	Dom. mig. for work	Dom. mig. for other
Age (baseline 15 to 24 years)								
25 to 34 years	0.353**	0.414	0.186*	-0.343**	-0.139	0.181	0.198	-0.464**
	(0.113)	(0.215)	(0.088)	(0.107)	(0.194)	(0.194)	(0.145)	(0.102)
35 to 44 years	-0.158	0.370	-0.373**	-0.876**	-0.650**	-0.870**	-0.562*	-1.360**
	(0.126)	(0.326)	(0.110)	(0.145)	(0.249)	(0.288)	(0.224)	(0.139)
45 to 55 years	-0.670**	0.271	-0.520**	-0.995**	-0.886**	-0.732*	-0.736**	-1.407**
	(0.146)	(0.348)	(0.123)	(0.177)	(0.331)	(0.292)	(0.247)	(0.159)
Education (baseline less than primary)								
Complete primary	0.158	0.006	0.058	0.178	0.805*	-0.229	0.319	0.145
	(0.122)	(0.390)	(0.133)	(0.170)	(0.337)	(0.335)	(0.266)	(0.149)
Complete middle school	0.060	0.192	-0.038	0.179	0.723*	-0.186	0.211	-0.029
	(0.126)	(0.356)	(0.130)	(0.167)	(0.315)	(0.336)	(0.253)	(0.148)
Complete high school or technical degree	-0.225	0.607	0.100	0.294	1.090**	0.257	0.523*	0.094
	(0.141)	(0.348)	(0.137)	(0.166)	(0.327)	(0.341)	(0.256)	(0.150)
Complete college or more	-0.306	0.580	0.585**	0.226	1.193**	0.976**	1.474**	0.128
	(0.176)	(0.357)	(0.140)	(0.185)	(0.332)	(0.334)	(0.252)	(0.167)
Marital status (baseline single)								
Married	0.009	-1.284**	-0.628**	-0.876**	-0.455*	-0.664**	-1.496**	-0.859**
	(0.106)	(0.278)	(0.095)	(0.137)	(0.225)	(0.218)	(0.199)	(0.115)
Cohabiting	0.141	-1.171**	-0.333**	-0.419**	0.145	-1.135**	-0.813**	-0.263*
	(0.141)	(0.309)	(0.119)	(0.15)	(0.371)	(0.270)	(0.212)	(0.127)
Separated, divorced or widowed	-0.091	-0.965*	0.073	0.488*	0.627*	-0.231	-0.531*	-0.155
	(0.231)	(0.474)	(0.153)	(0.204)	(0.281)	(0.286)	(0.244)	(0.157)
Born out of state	0.257**	0.316	0.711**	1.261**	0.226	0.693**	0.789**	1.221**
	(0.098)	(0.215)	(0.071)	(0.090)	(0.228)	(0.171)	(0.132)	(0.075)
Employment (baseline not econ. active)								
Employed informal sector	0.501**	-0.489*	0.691**	-0.043	0.221	-0.604**	0.473**	0.182*
	(0.119)	(0.241)	(0.105)	(0.104)	(0.203)	(0.187)	(0.148)	(0.081)
Employed formal sector	-0.093	-1.050**	0.481**	-0.149	-0.024	-0.821**	0.117	-0.120
	(0.137)	(0.239)	(0.117)	(0.112)	(0.203)	(0.198)	(0.146)	(0.098)
Unemployed	1.059**	-0.194	1.237**	0.117	0.012	0.141	0.831**	0.288
	(0.156)	(0.358)	(0.134)	(0.163)	(0.301)	(0.285)	(0.184)	(0.155)
Household Variables								
Number of household members	0.135**	0.164**	0.132**	0.077**	0.266**	0.112**	0.130**	0.094**
	(0.025)	(0.055)	(0.021)	(0.025)	(0.049)	(0.042)	(0.034)	(0.024)

(continued)

Table A1, continued

	Men				Women			
	Int. mig. for work	Int. mig. for other	Dom. mig. for work	Dom. mig. for other	Int. mig. for work	Int. mig. for other	Dom. mig. for work	Dom. mig. for other
Number of children in household	-0.113**	-0.180	-0.166**	-0.106*	-0.295**	-0.252**	-0.116	-0.093
	(0.040)	(0.108)	(0.038)	(0.052)	(0.085)	(0.090)	(0.088)	(0.051)
Number of informal workers	0.042	-0.076	-0.008	0.052	0.066	-0.042	0.022	-0.050
	(0.041)	(0.096)	(0.035)	(0.042)	(0.094)	(0.072)	(0.051)	(0.038)
Informal family business	-0.175	0.450	-0.172	0.217	-0.268	0.572*	0.012	0.170
	(0.143)	(0.260)	(0.115)	(0.123)	(0.290)	(0.225)	(0.189)	(0.106)
Household income	-0.017*	-0.001	-0.009*	0.010**	-0.030*	0.007**	-0.001	0.007**
	(0.007)	(0.006)	(0.004)	(0.003)	(0.013)	(0.002)	(0.005)	(0.002)
Contextual Variables								
Mean wages	-0.067**	-0.026	0.002	0.040**	-0.039*	-0.012	0.003	0.015
	(0.011)	(0.027)	(0.010)	(0.012)	(0.020)	(0.017)	(0.016)	(0.010)
Unemployment rate	-0.036	-0.032	-0.098**	0.008	-0.187**	0.046	0.087	0.010
	(0.031)	(0.070)	(0.028)	(0.038)	(0.067)	(0.072)	(0.094)	(0.029)
Percent informal workers	0.006	0.014	-0.023**	-0.031**	-0.013	-0.022	-0.034**	-0.013*
	(0.007)	(0.014)	(0.006)	(0.008)	(0.013)	(0.013)	(0.011)	(0.006)
Int. migrant networks	0.036**	0.051**	-0.032**	0.023*	0.032*	0.067**	0.014	0.021*
	(0.007)	(0.015)	(0.009)	(0.010)	(0.014)	(0.014)	(0.015)	(0.009)
Urbanization (baseline 15,000 to 99,999)								
Population greater than 100,000	-0.319**	0.104	-0.427**	-0.151	-0.247	0.655**	-0.215	0.120
	(0.110)	(0.275)	(0.106)	(0.135)	(0.218)	(0.245)	(0.202)	(0.109)
Over-represented city	-0.361**	-0.219	-0.172	-0.002	-0.158	0.456*	-0.123	0.098
	(0.111)	(0.281)	(0.101)	(0.119)	(0.220)	(0.219)	(0.165)	(0.098)
Region (baseline South)								
Northwest	0.544**	0.758*	0.045	-0.063	1.180**	1.033**	-0.184	-0.186
	(0.156)	(0.347)	(0.128)	(0.145)	(0.344)	(0.287)	(0.203)	(0.117)
Northeast	0.804**	1.069**	-0.018	-0.139	1.539**	1.536**	-0.457*	-0.080
	(0.165)	(0.408)	(0.142)	(0.177)	(0.353)	(0.318)	(0.230)	(0.129)
Center	0.570**	0.443	-0.325**	-0.109	0.663*	0.018	-0.954**	-0.143
	(0.120)	(0.305)	(0.104)	(0.133)	(0.261)	(0.245)	(0.229)	(0.101)
Center-west	0.968**	0.915**	-0.045	-0.411**	0.935**	0.819**	-0.608**	-0.500**
	(0.124)	(0.303)	(0.110)	(0.138)	(0.301)	(0.237)	(0.169)	(0.107)
Recession	-0.518**	-0.230	-0.010	-0.165	-0.185	-0.399*	-0.098	-0.147
	(0.100)	(0.258)	(0.074)	(0.104)	(0.208)	(0.169)	(0.137)	(0.084)
Constant	-3.869**	-7.064**	-3.603**	-4.841**	-6.054**	-6.302**	-4.974**	-4.596**
	(0.304)	(0.694)	(0.238)	(0.316)	(0.608)	(0.606)	(0.426)	(0.252)
Pseudo-R-squared	0.0649				0.0843			
n	299,253				336,283			

Notes: These models are similar to those presented in Table 2 in the main section of the paper, except that they include domestic migration for work and for other reasons as alternatives to international migration. Standard errors adjusted for within-household clustering using Huber/White estimator.
*p<.05 **p<.01 (two-tailed tests)