

Unemployment dynamics in Mexico: Can micro-data shed light on the controversy of labor market segmentation in developing countries?

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1 Introduction

Mexico shares with many developing countries institutional arrangements affecting labor markets performance, patterns of unemployment dynamics and of workers' mobility between formal and informal job statuses. Unlike other developing countries' employment surveys, a quarterly panel-linked questionnaire applied in Mexico since the first quarter of 2005 lends itself to the use of the methods to analyze time-to-event data (survival analysis models) that are required to capture the heterogeneous and disaggregated nature of unemployment dynamics. Unemployment rates, *per se*, provide only partial inputs for the discussion of changes in labor legislation and for an adequate design of labor intermediation and other public employment policies: a good understanding of determinants and of the heterogeneous nature of duration in unemployment is also required.

Using Mexico's employment surveys, we analyze unemployment duration determinants of individuals that were without job, but looking for one during the first quarters of 2005, 2006 and 2007. For each of them, we know how many weeks they have been job searchers, if their previous job was formal or not and reasons for separating from it. For those of them finding a job in a subsequent date, we have information regarding time required by each of them to find it, what kind of status this job is (formal and informal salaried or self-employment). If they are not employed in subsequent quarters, we have two cases: going out of the labor force and

still searching a job in their last interview in the panel. An interesting feature of Mexico's employment surveys is that as it captures transitions from unemployment to employment it also captures the frequent movements between formal and informal job statuses that characterize the Mexican economy (Calderón-Madrid, 2007). This is because unemployed individuals answer if, in their previous job, they had access to a bundle of institutional social security services, partly financed with their payroll taxes. That is, if they had a formal or informal job.

We analyse empirically the dynamics of workers displaced from a job that go through an unemployment spell before incorporating again into another job. By means of single spell hazard functions we estimate determinants of exit duration out of unemployment to four different and mutually exclusive destinations: formal and informal paid jobs, self employment and out of the labour force. Individuals still unemployed within the panel are considered censored data in our estimates to avoid biasing duration results downwards. There are few studies dealing with effectiveness of different search methods in finding jobs in developing countries (Márquez *et. al.* 2004, Calvo Armengo and Ioannides, 2005). Since Mexican surveys provide information of how individuals that left unemployment contacted their new employer, we can incorporate questions related to search methods into the research agenda of this paper. Since we can control for different GDP growth for three different years, we can find out if hazards out of unemployment increase (and if hazard out to not

participation decrease) with the economic cycle. We can also control for the effect attributed to unemployed individual receiving job separation lump-sum payment, since Mexican surveys capture this feature.² Other questions addressed in this paper are if different educational achievement and age groups survive longer in the unemployment pool and the relative speed to which they escape relatively to the different job statuses considered and if workers laid off from their previous job take longer to find a job. Other determinant of unemployment duration and job status destination is if an individual's previous job was in the formal sector.

The prior theoretical hypothesis must, by the nature of the questions addressed here, come from a nonstationary environment framework. For example, a nonstationary hypothesis of job search models is that the reservation wage of a person entering unemployment is not necessarily equal to his reservation wage after a number of weeks of unsuccessful search for a job. There are a number of reasons suggesting that a job-seeker's *criterion* for accepting a job changes with the duration of unemployment (*Cfr.* van den Berg, 1990). Among them are: a) depletion of resources to finance their search; b) searching cost that increase as the worker fails to obtain an

²Mexico shares with many developing countries labor code that fixes job separation severance payments and has employment programs providing a lump-sum financial help for job searchers. The severance payment is equivalent to three months' pay plus 20 days of salary per year of service. If the employee has remained with the same employer for 15 years, he/she will not receive a seniority premium.

acceptable offer from his closest and better known potential working places c) job offers arrive less frequently the longer a worker is unemployed - employers may take the view that too long a period of unemployment sends a bad "signal" or because their productive ability effectively declines.

With the estimations presented in this paper we can address questions such as: do formal workers in their last job require more time to find an informal job than individuals with similar characteristics, but that were informal in their last job? We argue that answers and explanations to this kind of questions shed light on the controversy of labor market segmentation in developing countries. This controversy has always been addressed in terms of relative wages between job status (Arias and Khamis, 2007) and, to our knowledge, this is the first paper to address it in terms of relative search intensities in each job status.

We posit that, in a model with formal and informal firms, a discouragement on the searching behavior for a formal job might reflect a behavioral response of job seekers, in turn reflecting labour market segmentation. Our results are consistent with the contention that a subset of workers displaced from the formal sector fails to obtain job proposals from employers in the formal sector. For this subset, as time passes, they face a trade-off between reducing their reservation wage for a formal job while continue searching for their preferred job status or starting to look for an informal job. When they opt for this latter option they do so not because they expect

a wage premium over what they could be earning in a formal job but because they expect a higher probability of getting a job offer. To test if a positive wage premium is earned by job status switchers to an informal job, we use matching methods to 'pair' statistically similar individuals that found formal jobs with those that became informal. With this procedure we obtain counterfactual measurements to assess wage changes.

This paper is structured in four sections, in addition to this introduction. Section 2 briefly discusses the features of Mexican labor market and describes the data set. Section 3 describes the statistical models used in this study: survival models for the estimation of hazard functions and kernel matching methods. Section 4, discusses the empirical results and Section 5 presents concluding remarks.

2 Theoretical background

The models aiming to understand why some workers in developing countries are employed in the informal sector while others have informal jobs are commonly classified in two groups: on the one hand, those assuming that formal and informal labor markets are integrated and on the other hand those assuming dualism or that labor markets are segmented. In the latter models, "good" jobs (those in the formal sector) are rationed and workers are in the informal sector involuntarily- this is an implication resulting from assuming efficiency wages in the formal sector or barriers

to enter into it. That is, in these models, informal workers would like to have a formal job but get no proposals from employers in that sector; this is in spite of the fact that other workers with same potential productivity enjoy a formal job status at a wage he would be willing to accept. By contrast, in the former models, formal and informal labor markets are integrated and an unemployed worker is indifferent between earning a reservation wage at a formal job and this reservation wage plus a compensation or "wage premium" at an informal job. (This differential in wages compensates for non-pecuniary benefits associated to being formal that a worker will not have, if a job is accepted in the informal sector-labor legislation rights, access to a bundle of institutional social security services, which include health care, life insurance along with work liability and disability insurance, day care centers for children and retirement pension and housing funds).

In turn, in these models, regardless of their assumptions about segmentation or integration, propositions derived for a non-stationary environment must be distinguished from those derived from a stationary environment.³ An example of propo-

³Recently deployed models for understanding of labor markets in developing countries have followed and extended the approach initially put forth in Mortsen-Pissaridis, 1994. In these new models (Boeri and Garibaldi, 2006, Albrecht *et. al.*, 2006 and Galiani and Weinschelbaum, 2006), search strategies of workers and employers determine matches in the formal and informal sectors, given exogenously-determined job creation and destruction rates in each sector. Implicit in these models is the assumption that, in a stationary environment, formal and informal labor markets are

sitions derived from stationary environment analysis are those derived by Albrecht *et. al.*, 2006. This is one of the few models incorporating workers' search behaviour in an environment with formal and informal jobs and derive conditions under which a worker is indifferent between searching for a job in the formal and informal sectors.⁴ This model is therefore compatible with different non stationary environment scenarios. It is our contention that some of them might be more compatible with a segmentation in labor markets than other. From an empirical perspective, we have unemployed individuals who were previously formal workers, the question to be addressed is the following one: Was search intensity for both job status the same from the very beginning? or Do those of them finding a job in the informal sector initially spend time searching for a formal job and then after a discouragement process started looking for an informal job?

integrated.

⁴In their framework, the assumption of heterogeneity of workers in terms of potential productivity implies that only those whose potential productivity is within two thresholds would be "switchers" between formal and informal jobs, others would be only informal job searchers and the rest only formal job searchers. In this model threshold changes result from exogenous shocks.

3 Characteristics of the data set

In this paper, a formal employee is defined as a wage-earning person registered in public social security agencies. That is, formal workers have access to a bundle of institutional social security services, which they partly finance with payroll taxes. These services include health care, life insurance along with work liability and disability insurance and retirement pension.⁵ Informal salaried employees, in turn, are defined as employees not registered in social security institutions or in retirement pension fund agencies, while the self-employed are non-wage earners working on their own (including business owners with less than three employees). Individuals who are out of the labor force are defined as a person that in the last interview does not look for a job.⁶

⁵In Mexico there is an official agency in charge of operating housing funds for formal employees (INFONAVIT). Since most of the arguments about pension funds apply to this social agency as well, our paper concentrates on retirement pensions, but implications apply to housing funds as well.

⁶The share of informal salaried workers and of the self-employed in the Mexican urban labor force (around 28 and 30 percent, respectively) is relatively large for a middle-income emerging economy. By contrast, open unemployment rates in Mexico are low, with respect to those of developed countries: lack of unemployment insurance and very low levels of workers' savings, make unemployment unaffordable for most participants in the labor market. Figures obtained from household surveys for 12 Latin American countries, in which the existence or absence of social security contributions is registered for each employee in the sample, indicate that the degree of formalization of salaried workers in Mexico is below average. In contrast to Chile, Uruguay, Brazil and Argentina, where

During many years the Mexican National Institute of Statistics, Geography and Informatics (INEGI) conducted a panel-linked quarterly employment survey (ENEU). This survey did not lend itself to a formal analysis of unemployment duration and job search strategies because no information concerning time required finding a job and how unemployed individuals look for a job was requested. In the first quarter of 2005, the questionnaire was modified and a more complete employment survey (*Encuesta Nacional de Ocupación y Empleo – ENOE*) has since been conducted. This new survey is a rotating panel of workers that substitutes 20 percent of interviewed persons each quarter and during the second quarter of each year incorporates questions that enable us to measure the effective time (in days) each worker is unemployed and, for those of them finding a job, to know how they contacted their new employer (if he attended to the establishment, if he found an advertisement for a job in internet, newspaper or radio; if he asks his family or friends to recommend him in a job or to keep him informed about any, if the job was offered to him, etc.).

We restrict our analysis to unemployed male workers between 18 and 65 years old. We work with three cohorts of two consecutive quarters balanced panel of unemployed individuals. The cohorts correspond to first quarter of 2005, 2006 or 2007 and total initial number of respondents is 3648. These are represented in Table 1. Columns in

more than half of salaried workers hold formal jobs, only 42 percent of employees in Mexico are formally employed. This figure is slightly above countries with much lower levels of development, such as Peru, Bolivia and Ecuador (Galiani and Weinschelbaum, 2006).

this table indicate destinations in subsequent quarters and rows classify individuals according to their previous employment job status. This table shows that while 29% of previous formal workers found a new job in the same status, around 17% ended up in an informal job. Stated differently, out of the totality of workers that were previously formal and that found a job, 37% of them move to the informal sector. For individuals that find a job or go out of the labor force, Table 2A presents the distribution of their characteristics, search method and other responses obtained in the survey. Figures in these tables are presented according to whether their new status is formal or informal employee, self-employment or out of the labor force. Table 2B presents the data for the three years together and includes characteristics of those classified as censored (remained unemployed) as well.

TABLE 1, 2A and 2B

Table 3 presents time of unemployment statistics for workers whose previous job was formal according to whether they find a formal or informal job. This time is divided in previous length of unemployment and time of unemployment after interview.

TABLE 3

4 Statistical Models

For time searching jobs we rely on competing risks models, which are explained next. Kernel matching method are described in the last part of this section. We relied on

them to have workers finding formal jobs compared with statistically similar workers finding formal jobs, thereby providing a counterfactual case to consider if a positive wage premium is earned by moving to the informal sector.

4.1 Hazard functions and competing risks models

The point of departure of survival analysis is the definition of a non-negative continuous random variable T , which represents the spell duration (duration of unemployment) with a density function $f(t)$ and a cumulative distribution function, $F(t)$. This latter one is defined as the probability that an unemployment spell lasts less than t units of time. The survival function, $S(t)$, equal to $1 - F(t)$, is defined as the probability that the unemployment spell will equal or exceed a period of length t :

$$S(t) = \Pr(T \geq t). \quad (1)$$

For any specification of t in terms of a density function, there is a mathematically equivalent hazard function, $h(t)$, which is the conditional density of T given $T > t > 0$; *viz*:

$$h(t) = \left(\frac{f(t)}{1 - F(t)} \right). \quad (2)$$

In this relationship, $h(t)$ may be interpreted, for an individual, as an exit rate or escape rate from unemployment, because it is the limit (as Δt tends to zero) of the probability that a spell terminates in interval $(t, t + \Delta t)$, given that the spell

has lasted t periods. (Notice that the hazard can alternately be expressed as the logarithm change of the survival function).

A competing risks specification of hazard functions is required for the case in which there is only one unemployment duration spell, but more than one possible destination out of unemployment (Van den Berg, 2001). For example, a person who is unemployed can find a job as a formal or informal employee, become self-employed or go out of the labor force. This implies that there is a random variable associated with each state, $t = \text{Min}\{t_m | m \in M\}$, where M is the set of possible destinations, indexed by m . Hence, total of survivals in t , that leave the unemployment in the next day is the sum on m of those who leave this state in order to go to the destiny m , *viz*:

$$h(t) = \sum_{m=1}^M h_m(t).$$

Where hazard function $h_m(t)$ is the failure rate to a specific destiny, conditional on survival up to time t . It is estimated with maximum likelihood methods for a sample of size n of observations (t_i, m) .

If we exclude individuals with unfinished spells from our estimations, we throw away part of the data set and introduce a serious bias against people with longer spells in unemployment. Censored survival times correspond to individuals that started a spell of unemployment and are still in the same status when they are last interviewed. Hazard functions have the distinct advantage of being able to handle censored data

effectively in their estimations.⁷ Also as part of the censored data set, the estimations presented in the following section, we include in departures to a different state than the estimated hazard. This procedure is valid on to estimate competing risks hazard functions on the assumption that unobserved determinants of the transition rates to the possible destinations are mutually independent.⁸

We assume an exponential hazard function with a ‘systematic part’ which takes form of an exponential function and depends on a number of observed individual characteristics, X . Thus, the hazard rate is multiplicative in all the separate elements of the covariates.

Our postulated a hazard rate specification is thus represented by the following exponential function⁹:

$$h_m(t) = h(t; x) = \exp(\beta' x) \quad (3)$$

where x is the vector of measured explanatory variables for the i th individual and β is the vector of unknown regression parameters associated with the explanatory variables (this vector is assumed to be the same for all individuals). The parameters in β are estimated with maximum likelihood methods.

⁷These would constitute a problem for a standard regression model where the dependent variable was the length of the spell.

⁸If this assumption does not apply, the right-censored is dependent, and a more elaborate estimation is required. *Cfr.* Heckman and Singer (1985).

⁹We also specified and estimated a proportional Cox representation and found that the parameters were not modified significantly.

4.2 Kernel Matching Estimator

The kernel matching estimator of the average discrepancy in earnings of these sets, τ^K , is given by:

$$\tau^K = \frac{1}{NT} \sum_{i \in T} \left\{ Y_i^T - \frac{\sum_{j \in C} Y_j^C G\left(\frac{p_j - p_i}{h_n}\right)}{\sum_{k \in C} G\left(\frac{p_k - p_i}{h_n}\right)} \right\} \quad (4)$$

where G is a kernel function and h_n is a bandwidth parameter, the number of units in the movers group is denoted by N^T and p_i is the propensity score of the individual i . Under standard conditions on the bandwidth and kernel,

$$\frac{\sum_{j \in C} Y_j^C G\left(\frac{p_j - p_i}{h_n}\right)}{\sum_{k \in C} G\left(\frac{p_k - p_i}{h_n}\right)} \quad (5)$$

is a consistent estimator of the counterfactual outcome we are interested in estimating.

The standard errors for statistical testing are obtained by bootstrapping.

5 Results

5.1 Earnings

Based on matching methods described in the previous section, we consider two groups' average discrepancies in salaries ¹⁰ On the one hand, unemployed workers that were formal in their previous job status and in their new job and the other hand,, formal

¹⁰We use propensity score based on the probit models relegated to the appendix in Table 6.

workers changing status to informal employment after an unemployment spell. Results presented in Table 4 indicate an absence of a wage premium in moving from the formal to the informal sector after an unemployment spell. That is, unlike theoretical frameworks suggesting integrated formal and informal jobs where formal workers prefer informal jobs, if paid a premium over formal wages, workers that were formal in their previous jobs are worst off in terms of salary if their new job status is informal employment.

TABLE 4

5.2 Search time

Table 5 reports hazard function results. As expected, those with no resources to finance their search, have a faster escape from unemployment. This result suggests that those with a "financial cushion" provided by a lump-sum payment for job separation afford to look longer for a suitable job. By contrast relative to single workers, married ones with children cannot afford to look as long for a suitable job.

TABLE 5

Regarding search methods, they imply that for those finding a job in the informal sector; the most effective method was social and family networks. By contrast, for those finding one in the formal sector, newspapers and internet were as relevant.

Other results show those workers who leave their previous job voluntary leave unemployment to formal job faster than workers that are laid off. This determinant was not statistically significant in the case of exits to the informal sector.

According to the job status in their last job, figures in this table indicate a) that relative to those who were previously formal, those that were in an informal job status require longer search periods to find a formal job; b) that those that were formal workers in their last job required more time to find an informal job than individuals with similar characteristics, but that were informal in their last job. That is, that relative to those that remain formal workers, those changing status took longer to find their job.

Our interpretation for this last result is that they spent some time looking for a formal job and, after unsuccessful attempts to receive an offer, their dominant strategy is to search an informal job.

This interpretation is also related to another result, namely that the frequency of formal job offers, do not decline with the duration of unemployed. This interpretation is not contrary to the *hypotheses* that formal employers may take the view that too long a period of unemployment sends a bad "signal" or that their productive ability effectively declines. An alternative hypothesis could be that precisely because this is what happens in the formal sector, discouraged unemployed individuals do not search a formal job for long. In order to formally address hypothesis related to search

intensity in formal and informal jobs changing as unemployment duration elapses one would require that employment survey capture related information and extending estimations to a multispell duration framework. In this framework searching for a formal job and searching for an informal job can be estimated as different spell that occur one after the other.

6 Concluding Remarks

A stylized fact of the cohorts of unemployed workers analyzed in this paper was that one out of three individuals that found a job as informal employee was a formal worker in his last job. In our analysis, we found two interesting results regarding time required by this set of individuals to find their job: a) they search for a longer period, relative to individuals with similar characteristics that were also unemployed at the same date, were informal in their last job before their unemployment spell and also became informal employees after this spell; b) they stayed unemployed for a period longer than those with similar characteristics that found a job as formal salaried worker. In addition, we also found that their earnings in their new job were lower than those in their previous formal occupation. This was in contrast to what happened to those that found a job in the formal sector; on average they experienced no income decline.

Our results are consistent with the contention that a subset of workers displaced

from the formal sector fails to obtain job proposals from employers in the formal sector. As time passes, they face a trade-off between reducing their reservation wage for a formal job while continuing their search for their preferred job status or starting to look for an informal job, knowing that there might not be a wage premium over what they could be earning in a formal job, but that the informal sector implies a higher probability of getting a job offer.

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TABLE 5
Hazard functions for unemployed male worker:

Variable	Formal		Employee		Informal		Employee		Self-employment		Out of the labor	
	Hazard	Coefficient	Hazard	Coefficient	Hazard	Coefficient	Hazard	Coefficient	Hazard	Coefficient	Hazard	Coefficient
From 23 to 28 years old	0.9776	-0.0226	1.1411	0.132	2.3689	0.8624	0.7646	-0.2684				
	[0.1030]	[0.1053]	[0.1183]	[0.1037]	[0.9416]**	[0.3975]**	[0.0586]**	[0.0766]**				
From 29 to 35 years old	1.0154	0.0152	0.9625	-0.0382	2.3572	0.8575	0.6338	-0.456				
	[0.1324]	[0.1304]	[0.1116]	[0.1159]	[1.0864]*	[0.4609]*	[0.0719]**	[0.1135]**				
From 36 to 44 years old	0.8176	-0.2013	0.8488	-0.1639	3.3607	1.2121	0.7835	-0.2439				
	[0.1201]	[0.1469]	[0.1110]	[0.1308]	[1.5359]**	[0.4570]**	[0.0814]**	[0.1039]**				
More than 44 years old	0.5559	-0.5872	0.5596	-0.5805	2.7305	1.0045	1.1593	0.1479				
	[0.0923]**	[0.1660]**	[0.0782]**	[0.1397]**	[1.4599]*	[0.5347]*	[0.1007]*	[0.0869]*				
Secondary school	2.2424	0.8075	0.7814	-0.2467	1.4593	0.378	0.8124	-0.2077				
	[0.3178]**	[0.1417]**	[0.0719]**	[0.0921]**	[0.5634]	[0.3861]	[0.0646]**	[0.0795]**				
High school	2.1432	0.7623	0.5868	-0.5331	2.1136	0.7484	0.9471	-0.0543				
	[0.3265]**	[0.1524]**	[0.0689]**	[0.1174]**	[0.9289]*	[0.4395]*	[0.0760]	[0.0803]				
More than high school	1.9037	0.6438	0.6009	-0.5093	2.9444	1.0799	0.9003	-0.1051				
	[0.2882]**	[0.1514]**	[0.0694]**	[0.1154]**	[1.0899]**	[0.3702]**	[0.0682]	[0.0757]				
Married	1.3312	0.2861	1.094	0.0898	0.9979	-0.0021	0.812	-0.2083				
	[0.1695]**	[0.1273]**	[0.1263]	[0.1155]	[0.3976]	[0.3984]	[0.0603]**	[0.0743]**				
Married & children under 12	1.2676	0.2371	1.3176	0.2758	3.0193	1.105	0.7693	-0.2623				
	[0.1741]*	[0.1373]*	[0.1625]**	[0.1234]**	[1.0571]**	[0.3501]**	[0.0902]**	[0.1172]**				
By newspaper, radio or internet	4.1162	1.4149	2.5278	0.9274								
	[0.4855]**	[0.1180]**	[0.3903]**	[0.1544]**								
By family or friends networks	5.2953	1.6668	9.0706	2.205								
	[0.4967]**	[0.0938]**	[0.9037]**	[0.0996]**								
The job was offered	3.3334	1.204	17.3326	2.8526								
	[0.8004]**	[0.2401]**	[2.1754]**	[0.1255]**								
Private and public search assistance offices	0.9269	-0.0759	1.7322	0.5494								
	[0.2260]	[0.2438]	[0.3832]**	[0.2212]**								
Previous job was formal	1.7147	0.5393	0.7746	-0.2554	0.8739	-0.1348	0.6399	-0.4464				
	[0.1459]**	[0.0851]**	[0.0735]**	[0.0949]**	[0.2314]	[0.2648]	[0.0476]**	[0.0744]**				
Urban area	1.2467	0.2205	0.7421	-0.2982	0.6593	-0.4166	1.0007	0.0007				
	[0.1482]*	[0.1189]*	[0.0629]**	[0.0847]**	[0.2067]	[0.3135]	[0.0698]	[0.0698]				
Lay off	0.7185	-0.3307	1.042	0.0411	0.348	-1.0555	0.5048	-0.6837				
	[0.0660]**	[0.0919]**	[0.0873]	[0.0838]	[0.1022]**	[0.2937]**	[0.0404]**	[0.0800]**				
Lump-sum job separation payment	0.3676	-1.0006	0.5235	-0.6473	0.3941	-0.9312	1.7093	0.5361				
	[0.0969]**	[0.2637]**	[0.1491]**	[0.2848]**	[0.2389]	[0.6063]	[0.1377]**	[0.0805]**				
Previous length of unemployment												
More than 30 to 60 days	1.249	0.2223	1.2216	0.2002	1.1744	0.1607	1.3197	0.2774				
	[0.1237]**	[0.0990]**	[0.1073]**	[0.0878]**	[0.3360]	[0.2861]	[0.0809]**	[0.0613]**				
More than 60 to 120 days	1.1717	0.1585	1.5062	0.4096	1.0563	0.0548	1.2003	0.1825				
	[0.1382]	[0.1179]	[0.1522]**	[0.1011]**	[0.3544]	[0.3355]	[0.0987]**	[0.0822]**				
More than 120 days	0.9716	-0.0288	0.9932	-0.0068	0.3763	-0.9773	1.245	0.2191				
	[0.1426]	[0.1468]	[0.1463]	[0.1473]	[0.2257]	[0.5998]	[0.1242]**	[0.0998]**				
Year (2006=1)	1.2136	0.1936	1.0775	0.0747	0.6086	-0.4966	0.9256	-0.0773				
	[0.1190]**	[0.0981]**	[0.0950]	[0.0882]	[0.1744]*	[0.2866]*	[0.0594]	[0.0642]				
Year (2007=1)	1.0639	0.0619	1.1398	0.1309	0.8033	-0.219	0.9999	-0.0001				
	[0.1052]	[0.0989]	[0.0989]	[0.0868]	[0.2095]	[0.2608]	[0.0614]	[0.0614]				
Constant		-7.6531		-6.6082		-10.0567		-5.5213				
		[0.2602]**		[0.2010]**		[1.1775]**		[0.1837]**				
Controlls for Mexican states (dummy variables)		x		x		x		x				
Observations	3478	3478	3478	3478	3478	3478	3478	3478				

Standard errors are in parentheses. One, two and three asterisks indicate significance at the 10%, 5% and 1% significance level respectively.

TABLE 1
Unemployed male during the first quarter of each year.
Transition matrix

	Job status in new employment after unemployment spell					Number of Observations
	Formal	Informal	Self-employment	Out of the labor force	Remained unemployed	
TOTAL						
Job status in previous employment before unemployment spell:						
Formal	28.63%	14.69%	2.46%	15.55%	38.67%	1,055
Informal or Self-employment	16.20%	25.61%	2.82%	30.58%	24.80%	2,593
2005						
Job status in previous employment before unemployment spell:						
Formal	24.32%	12.77%	2.43%	16.41%	44.07%	329
Informal or Self-employment	14.79%	23.01%	3.54%	33.38%	25.28%	791
2006						
Job status in previous employment before unemployment spell:						
Formal	31.87%	14.62%	1.46%	15.20%	36.84%	342
Informal or Self-employment	18.07%	25.54%	2.53%	28.43%	25.42%	830
2007						
Job status in previous employment before unemployment spell:						
Formal	29.43%	16.41%	3.39%	15.10%	35.68%	384
Informal or Self-employment	15.74%	27.78%	2.47%	30.14%	23.87%	972

The rows sum 100%

TABLE 2A
Unemployed male workers
Descriptive statistics

Variable	2005				2006				2007			
	Formal salaried	Informal salaried	Self-employment	Out of labor force	Formal salaried	Informal salaried	Self-employment	Out of labor force	Formal salaried	Informal salaried	Self-employment	Out of labor force
Age (years)	29.69 [10.6474]	31.61 [11.3839]	36.89 [10.5932]	33.23 [14.8135]	28.93 [10.1915]	31.28 [11.4549]	33.42 [13.6563]	33.78 [15.2142]	29.99 [10.4820]	32.08 [12.1544]	34.76 [10.6443]	34.17 [15.2608]
Education												
Elementary school	15.74%	36.61%	19.44%	24.53%	8.88%	38.17%	15.38%	28.82%	11.28%	30.33%	13.51%	28.77%
Secondary school	37.06%	35.27%	22.22%	25.16%	40.54%	29.77%	30.77%	24.31%	32.71%	27.93%	16.22%	21.94%
High School	20.30%	12.95%	13.89%	22.33%	25.48%	14.50%	23.08%	21.88%	28.20%	20.72%	24.32%	22.22%
More than high school	26.90%	15.18%	44.44%	27.99%	25.10%	17.56%	30.77%	25.00%	27.82%	21.02%	45.95%	27.07%
Marital status												
Married & no children under 12	18.78%	16.96%	27.78%	21.38%	11.20%	15.65%	3.85%	21.53%	19.92%	21.92%	13.51%	20.80%
Married & children under 12	18.27%	22.77%	27.78%	9.43%	20.85%	19.85%	26.92%	11.11%	18.42%	20.12%	45.95%	7.12%
Single	62.94%	60.27%	44.44%	69.18%	67.95%	64.50%	69.23%	67.36%	61.65%	57.96%	40.54%	72.08%
Search strategy followed												
Attending to the establishment directly	32.99%	18.30%			24.71%	20.61%			23.31%	16.82%		
By newspaper, radio or internet	22.34%	8.04%			25.10%	8.40%			24.06%	7.81%		
By friends or family members	36.04%	54.91%			42.86%	54.58%			46.99%	55.56%		
Job was offered to you	5.58%	15.63%			1.16%	12.98%			3.01%	16.22%		
Other	3.05%	3.13%			6.18%	3.44%			2.63%	3.60%		
Urban area	83.76%	71.43%	88.89%	83.02%	88.03%	70.99%	69.23%	82.29%	86.09%	69.67%	81.08%	79.49%
Rural area	16.24%	28.57%	11.11%	16.98%	11.97%	29.01%	30.77%	17.71%	13.91%	30.33%	18.92%	20.51%
Income available while unemployed	3.05%	2.68%	2.78%	10.06%	2.32%	2.29%	3.85%	10.42%	1.50%	2.10%	2.70%	8.26%
Income unavailable while unemployed	96.95%	97.32%	97.22%	89.94%	97.68%	97.71%	96.15%	89.58%	98.50%	97.90%	97.30%	91.74%
Reason why last job was left												
Lay off	29.95%	34.82%	16.67%	18.24%	24.71%	29.01%	23.08%	15.63%	26.69%	27.03%	29.73%	17.38%
Other	70.05%	65.18%	83.33%	81.76%	75.29%	70.99%	76.92%	84.38%	73.31%	72.97%	70.27%	82.62%
Job status in previous employment												
Formal	40.61%	18.75%	22.22%	16.98%	42.08%	19.08%	19.23%	18.06%	42.48%	18.92%	35.14%	16.52%
Informal or self-employed	59.39%	81.25%	77.78%	83.02%	57.92%	80.92%	80.77%	81.94%	57.52%	81.08%	64.86%	83.48%
Number of observations	197	224	36	318	259	262	26	288	266	333	37	351

Standard deviation in parenthesis

TABLE 2B
Unemployed male workers
Descriptive statistics all years

Variable	Formal salaried	Informal salaried	Self- employment	Out of labor force	Censored
Age (years)	29.53 [10.4204]	31.69 [11.7163]	35.18 [11.4557]	33.74 [15.0888]	32.30 [11.9597]
Education					
Elementary school	11.63%	34.55%	16.16%	27.38%	17.98%
Secondary school	36.70%	30.53%	22.22%	23.72%	28.26%
High School	25.07%	16.61%	20.20%	22.15%	21.12%
More than high school	26.59%	18.32%	41.41%	26.75%	32.64%
Marital status					
Married & no children under 12	16.48%	18.56%	16.16%	21.21%	19.12%
Married & children under 12	19.25%	20.76%	34.34%	9.09%	14.65%
Single	64.27%	60.68%	49.49%	69.70%	66.22%
Search strategy followed					
Attending to the establishment directly	26.45%	18.44%			
By newspaper, radio or internet	23.96%	8.06%			
By friends or family members	42.52%	55.07%			
Job was offered to you	3.05%	15.02%			
Other	4.02%	3.42%			
Urban area	86.15%	70.57%	80.81%	81.50%	84.59%
Rural area	13.85%	29.43%	19.19%	18.50%	15.41%
Income available while unemployed	2.22%	2.32%	3.03%	9.51%	5.33%
Income unavailable while unemployed	97.78%	97.68%	96.97%	90.49%	94.67%
Reason why last job was left					
Lay off	26.87%	29.79%	23.23%	17.14%	47.38%
Other	73.13%	70.21%	76.77%	82.86%	52.62%
Job status in previous employment					
Formal	41.83%	18.93%	26.26%	17.14%	38.82%
Informal or self-employed	58.17%	81.07%	73.74%	82.86%	61.18%
<u>Share of total number of observations</u>	<u>19.79%</u>	<u>22.45%</u>	<u>2.71%</u>	<u>26.23%</u>	<u>28.81%</u>

Standard deviation in parenthesis. The last row sums 100%

TABLE 3
Workers whose previous job was formal and find a salaried job
Time of unemployment
(days)

	Workers	Total time of unemployment	Previous length of unemployment	Time of unemployment after interview
TOTAL	461	94.2	50.6	43.7
Formal - Formal	304	90.3	49.5	40.8
Formal - Informal	157	101.8	52.5	49.2
2005	122	99.2	53.4	45.8
Formal - Formal	80	101.1	56.8	44.3
Formal - Informal	42	95.6	46.9	48.7
2006	160	91.8	50.0	41.9
Formal - Formal	109	89.8	51.9	37.9
Formal - Informal	51	96.2	45.8	50.4
2007	179	93.0	49.2	43.8
Formal - Formal	115	83.3	42.2	41.1
Formal - Informal	64	110.2	61.6	48.6

TABLE 4
Unemployed male during the first quarter of each year.
Transition from formal to informal jobs

	KERNEL				
	Treated	Control	Difference	S.E.	T-stat
	Formal - Formal	Formal - Informal			
Time of unemployment					
2005	44.63	48.35	-3.71	5.91	-0.63
2006	36.65	51.38	-14.73 **	5.81	-2.53
2007	41.11	48.97	-7.86 *	4.75	-1.65
Income Changed Rate					
2005	0.96	0.85	0.11	0.10	1.06
2006	1.06	0.93	0.13 *	0.07	1.74
2007	1.04	0.95	0.09	0.07	1.26

Standard errors are in parentheses. One, two and three asterisks indicate significance at the 10%, 5% and 1% significance level respectively. Treated observations are 63 in 2005, 96 in 2006 and 97 in 2007 and control observations are 38 in 2005, 37 in 2006 and 60 in 2007.