

Are Labor Markets in Developing Countries Dualistic?

William F. Maloney

There is little evidence to support the traditional dualistic view of a labor market segmented between formal and informal sectors as the principal paradigm through which to view the informal sector. The division between good jobs and bad jobs seems to cut across issues of formality — and for many workers, inefficient labor codes and low levels of human capital may make employment in the informal sector more desirable.



Summary findings

There is a long tradition of viewing as disadvantaged the roughly 40 percent of workers in developing countries who are unprotected by labor legislation and work in small “informal” firms.

Maloney offers an alternative to traditional views of the relationship between formal and informal labor markets: For many workers, inefficiencies in present labor codes and relatively low levels of human capital (labor productivity) may make employment in the informal sector more desirable.

He offers the first study of worker transitions among sectors, using detailed panel data from Mexico, and

finds little evidence to support the traditional dualistic view.

He shows that traditional earning differentials cannot prove or disprove segmentation in developing countries, and patterns of worker mobility do not suggest a rigid labor market — or one segmented into formal and informal divisions.

It is possible that the market is dualistic in the sense used in the industrial world, but the division between good jobs and bad jobs seems to cut across issues of formality.

This paper — a product of the Poverty and Economic Management Unit, Latin America and the Caribbean Region— is part of a larger effort in the region to reexamine the role of the informal sector. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Marta Cervantes, room I8-095, telephone 202-473-7794, fax 202-522-0054, Internet address mcervantes@worldbank.org. The author may be contacted at wmaloney@worldbank.org. June 1998. (34 pages)

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I. Introduction

A long tradition views the roughly 40% of LDC labor forces that are unprotected by labor legislation and working in small "informal" firms to be the disadvantaged segment of a dual labor market.¹ The origins and dynamics of this sector have attracted renewed interest for at least two reasons. First, increasing labor market efficiency and flexibility is considered an essential complement to the market-based reforms underway throughout the developing world.² To the degree that segmentation is driven by government or union imposed regulations that induce rigidities and push labor costs above market clearing, the large size of the informal sector stands as a measure of the magnitude of required reforms.

Second, a related literature with a very different emphasis sees informality as the result of an ongoing effort by large modern enterprises to evade mandated protections through subcontracting to unprotected workers, a process accelerated by heightened global competition in labor intensive manufactures. The existence and behavior of the sector are thus directly relevant to the debate over establishing common labor standards throughout free trade agreements: whatever safeguards may be enshrined in labor codes, LDC-based firms could employ an effectively unprotected work force to

¹ See, for example, Harris and Todaro (1970), Sabot (1977), Mazumdar(1983) or Fields (1990). A recent World Bank document argues that "Protected workers in the 'modern' or 'formal' sector ...enjoy high wages, social security, vacation, pension and employment security as mandated by legislation. By contrast, those unable to find work in such firms resort to the next best alternative, the so-called 'informal sector' in small firms or self-employment, engaged in labor-intensive activities, without job security or benefits."(Ozorio de Almeida et al. 1995, p.1). See Fields (1990), Tokman (1992), Portes (1994), Rosenzweig (1988), Thomas (1992) for excellent overviews of the informality literature. See Stiglitz (1974), Esfahani and Salehi-Isfahani (1989) for efficiency wage models of LDC dualism.

² See, for example, World Bank (1995) *World Development Report*.

compete with U.S. firms.³

This paper argues that the traditional conflation of issues of formality and dualism is probably inappropriate and offers an alternate view of the role of the unregulated small firm sector. As in the industrialized countries, many workers may choose to start or work in small firms and in the developing country context the incentives to do so may be greater. First, the inefficiencies and rigidities that often accompany labor protections, and the implicit taxation they imply in the absence of a binding minimum wage, may serve to reduce the attractiveness of formal sector employment. More generally, the low level of formal sector productivity for the mass of poorly educated workers in developing countries reduces the opportunity cost of being independently employed. Much of the informal sector may therefore reflect an efficient allocation of labor.

Despite the long tradition and a voluminous literature, support for the dualistic view is not strong and has rested largely on case studies and on comparisons of earnings across sectors adjusted for observable worker characteristics.⁴ This paper employs detailed panel data from Mexico to take a more comprehensive approach than has been previously feasible. It examines the earnings differentials and mobility patterns of individual workers transitioning among formal salaried employment and three modalities of informal work: The self-employed, owners of informal firms with or without additional employees; the informal salaried, those working for these informal firms and who are usually considered the least advantaged of the work force; and contract workers, those who do not receive a regular wage or salary, but who are paid as a percentage, by piece, on commission,

³ See Portes, Castells and Benton (1989), Tokman (1992). The U.S. Department of Labor has sponsored two studies on the informal sector. See *Workers Without Protections: Case Studies of the Informal Sector in Developing Countries* (1993) and *The Informal Sector in Mexico* (1992).

⁴ See Rosenzweig (1988).

or fixed contract and are often connected to larger firms.

The earnings differentials generated are more precise and reliable than those previously generated, but are shown to be fundamentally unable to prove or disprove segmentation in this context. As an alternative, the paper examines the patterns of worker mobility predicted by the dualism hypothesis, generating both a dynamic overview of movement through the labor market, and characterizations of the interactions among the four classes of work. While unable to provide conclusive evidence, this approach offers substantial reason to question the dualistic view as the primary explanation for the existence and dynamics of the sector. The labor market appears relatively fluid with large and symmetric flows of workers among all sectors. The data is consistent with self-employment being a desirable destination for many workers and with contract work being closely related. It also suggests that informal salaried work is the entry point and perhaps training area for young workers who, even if queuing, very quickly leave to take both formal and informal jobs.

II. Data:

The study employs two sources of data on men aged 16-65 with a high school education or less in 16 major metropolitan areas. The National Urban Employment Survey (NUES) conducts extensive quarterly interviews and is structured so as to generate panels that allow tracking a fifth of the sample across five quarters. Workers are matched by household, role in household, sex, level of education, and age, to ensure against generating spurious transitions. Though five quarters does not permit a full description of the life cycle of an individual, it is nonetheless possible to sketch patterns of mobility among sectors and to identify worker characteristics that correspond to them. To generate a sufficiently large sample of roughly 15,000 observations, three contiguous NUES cohorts were

combined: 1990:3-1991:3, 1991:1-1992:1, 1991:2-1992:2.⁵

Another panel was created spanning 1991:1-1992:1 that terminates in the more detailed Micro-Enterprises Survey (MES). This survey was constructed by identifying 11,000 owners of micro-enterprises, defined as firms of fewer than six individuals, from the 1990:4 NUES and re-interviewing them in 1991:1 in more depth about issues of capital structures, costs, and employment patterns. It also specifically asks why they left their previous job and why they started the present business which offer a partial alternative to naive corrections for selectivity bias.⁶ Thus, for a reduced sample, we have far more information on both earnings differentials, and motivations for moving. The panels in the combined NUES sample above were chosen to include and span either side of the MES panel.

Two popular definitions of informality are employed. The first focuses specifically on the issue of "protectedness" and comprises owners or workers in firms of fewer than 16 employees who

⁵ The cohort beginning in the fourth quarter of 1990 was not used because it would incorporate the end of the year bonuses, the aguinaldo. This normally amounts to a 13th monthly payment but may vary by year and firm imparting an undetermined upward bias to the monthly wage reports. Since we are concerned with expected differentials in income, the wages of workers who reported normally receiving the aguinaldo were increased by 13/12.

⁶ Heckman (1979) is insistent that the standard two stage methods of correcting for selectivity bias depend on having confidence in the underlying model of how workers choose among sectors. A bad first stage selection specification may induce bias rather than correct for that existing. This is likely to be the case as the premise of this work is that we have little knowledge of the role each sector serves. Further, since a principle argument of this work is that, in the absence of knowledge of the value of unobservable components of the differential, we cannot use the differentials as evidence of segmentation, the issue becomes of somewhat less importance. The standard Heckman procedure was employed, however, for transitions in and out of formal salaried work using the variables employed in the logit analysis in section IV for the probit first stage. The model for Formal Salaried to Self-Employment did not converge and yielded improbable results. For Self-Employment to Formal Salaried, Formal Salaried -Informal Salaried, Formal Salaried to Contract, Contract-Formal Salaried, it could not be rejected that the transformed correlation coefficient between the errors in the selection and wage equation was zero and hence the correction for selectivity bias was inappropriate. Only for the Informal Salaried to Formal Salaried regression was the transformed correlation coefficient significant. The correction changed the sign of the differential and greatly changed the magnitude. Again, however, in the absence of a model of what is being selected for, it is unclear how to interpret the result.

do not have social security or medical benefits. The second addresses the issue of the role of the small firm or "micro-enterprise" using the Mexican government definition of firms of under six workers. Because only the latter definition is consistent with the sampling of the MES, it is the one used for the joint NUES/MES panel. However, the similarities between the two sets of descriptive statistics (table 1) on age, work experience, level of schooling and an index of the real wage at the beginning of the period for each transition, confirm that there is great overlap in the composition of the two populations and that the results are unlikely to be driven by the particular definition chosen. Though the differences in sample means are sometimes statistically significant, they are never large. This is due partly to the fact that among entrepreneurs of firms with less than six workers, only 5% are covered by benefits and that the vast majority of micro-firms are concentrated at sizes of below three workers.

<<Table 1 here>>

III. Wage Differentials as Evidence of Segmentation

Traditional efforts to identify segmentation by comparing conditional means between sectors are unsatisfying for two reasons. First, as is well-documented in the literature, unobserved worker characteristics that affect productivity-- ability to tolerate authority, punctuality, entrepreneurial ability- may also influence in which sector an individual chooses to work and bias estimates of the sector differential.⁷

But a greater concern is that the specific characteristics of work that pertain to or even define

⁷ Recognizing this, Marcouiller et al. attempt to mitigate the selection bias but are clear about the limitations of the standard techniques when there is no clear consensus about how workers sort themselves between the informal and formal sector. They, in the end, report higher earnings in the informal sector.

the formal and informal sectors affect the earnings paid in each sector and make it unclear what the magnitude or sign of the differential should be even in an unsegmented market. Informal earnings should exceed formal sector wages by the expected value of unreceived benefits, and fall below them by the taxation that is often evaded. Earnings both in contract and self-employment may reflect a premium for risk, lifestyle, and in the latter case, the implicit costs of capital invested, and the value of unpaid work by family members that the MES suggests comprise 34% of micro-firm employees. Informal salaried workers are among the youngest (table 1) and the MES reports that roughly 30% are related to their employer. Their reported earnings may therefore incorporate training costs (see Hemmer and Mannel, 1989 and Roberts, 1989) or unobserved payments in kind.

i. Estimates of earnings differentials

Using the vast but undetailed NUES, the first columns of tables 2a and 2b show the percentage change in hourly real earnings generated by movements of individuals among sectors. This holds worker characteristics constant and leaves the variations in the characteristics of the work itself as the residual explanatory factor. The next columns account for these characteristics more than has been possible previously and present changes in real wages net of taxes,⁸ and real wages net of taxes per hour among the four sectors.⁹ For all three transitions into self-employment, the

⁸ Payments were calculated based on the Mexican tax tables. It was assumed that all informal workers avoided paying taxes and all formal workers paid.

⁹ The non-normality of the distributions makes the sample mean an inadequate measure of the central tendency of the data and its significance. Two alternate measures are presented in each column: the mean as determined by a robust estimation technique, and the median. The median is largely unaffected by the non-normality of the distribution and is robust to outliers. The robust mean attempts to recover the information in the tails while compensating to some extent for outliers and non-normality. All calculations are done in STATA.

NUES/MES panel allows further adjustment for imputed return on the value of capital (tools, inventories, and location if owned), and hours worked by unpaid workers (table 3).¹⁰

The results would appear to invert the conventional view of the relation between formal and informal sectors, regardless of the definition chosen: movement into formal salaried employment is associated with a significant *decline* in remuneration, except from informal salaried employment; movement from formal salaried employment always leads to a significant *increase*. However, in the absence of information on the value of benefits, compensation for risk, the value of independence, or in-kind payments or implicit training costs, the magnitude of the distortion-free differential cannot be known ex-ante, and neither these, nor any previous reported sectoral differentials are reliable measures of segmentation. Further, though table 3 suggests that those reporting voluntary moves into self-employment do far better than those moving involuntarily, we cannot necessarily interpret asymmetries in differentials in tables 2a and b as evidence that there is a larger component of voluntary movement into the formal salaried sector: Involuntary separations due to formal sector firm closures imply the loss of well paying jobs and a large differential, while the analogous failure of a micro-enterprise may imply low earnings prior to transition and a smaller differential.

<<Tables 2a-b and 3 about here>>

However, the differentials among informal sectors are less affected by unobservables, such as the loss of formal sector benefits, and are suggestive of similarities and differences among them.

¹⁰ Despite choosing the NUES sample to straddle the MES sample, predictably, the raw differentials differ somewhat. For the critical salaried formal salaried/self-employed transition they are extremely close. For the other cases, although we are dealing with the same relative orders of magnitude, it is less easy to consider these simply as adjustments to the NUES results reported above. The formal/self-employed differential is slightly, although not significantly higher (11,5 vs 9,4) and the contract/self-employed differential is also broadly similar (10,-1 vs 7, 8) with a substantial but insignificant difference in the median. The differential from informal/ salaried employment is substantially higher (33,25 vs 19,16) and significant different.

Tables 2a and b show that movement into self-employment is always associated with a substantial and significant *rise* in per hour after-tax remuneration from every other sector, reaching over 25% from the formal and informal salaried sectors. However, the joint NUES/MES panel (table 3) shows that after modest adjustments for capital costs, and much larger ones for unpaid labor,¹¹ both contract work and self-employment share similar premia with respect to formal salaried and informal salaried work, and the differential between them is insignificant. Contract work appears similar to self-employment and may therefore share the same composition of voluntary and involuntary entrants.

Salaried informal employment, however, suffers a discount relative to all other sectors. After adjusting the differentials for standard firm size effects observed in the U.S.,¹² moving to an informal sector firm from a comparably-sized formal sector firm now yields a 12-15% rise in the "micro-enterprise" sample, comparable to those above, but only a slight rise in the "unprotected" sample. Further, the large asymmetries in both cases suggest that informal salaried workers gain far more entering salaried formal work than they lose leaving, as would be predicted if they were queuing for

¹¹ A return of 10% was imputed. Most micro-enterprises who save in commercial accounts or *cajas de ahorro* received 3% real. Implicitly we are assuming 7% for depreciation. The low level of capital employed results in the overall differential being relatively insensitive to the cost of capital value chosen. The more detailed treatment of taxation in the MES allows dropping the previous assumption of complete avoidance by the self-employed and induces a slight moderation in the after-tax differential. The adjustment for unpaid labor may be overstated if Balán et al are correct that "Since in most cases these family members would not otherwise be employed outside the household, their contribution to family finances is a 'net' one..." (p.218) or if the unpaid labor was in training.

¹² The wage/size elasticities were taken from Barron et al's (1987) U.S. study which estimates the impact net of unionization effects and capital-labor ratios in a society where labor laws are enforced across size. A simple regression of the log of the wage on the log of firm size yields coefficients on the order of .042 to .069 and very significant, roughly double the 2.8% found by Barron et al. Behar (1988) and Ros and Marquez (1990) find that in Mexico, as others have found elsewhere, wages increase with firm size and further, large firms often pay benefits substantially above those established by law. Because we cannot control for capital-labor ratios and unionization, and because this size effect may reflect the very fact that the informal in small firms are rationed out of larger firms by excessive wage legislation, including a change in firm size variable in the differential regressions might obscure the very effect to be measured.

formal salaried jobs. On the other hand, this asymmetry also exists with the contract sector so it is not limited to entering formal employment. Further, should deductions for training costs be a substantial fraction of the wage, such an asymmetry would be expected since returning workers may not work as apprentices. More fundamentally, the discount with respect to the other informal sectors suggests that the composition of the premium in the absence of distortions is distinct for this sector. This might be the case, for example, if the premium for risk is lower, if the 30% of the informal salaried who are related to the owner receive a large fraction of their income in kind, or if training costs are substantial.

ii. Are the differentials consistent with an integrated labor market?

Though we cannot credibly prove or disprove segmentation based on these differentials, we can ask whether they seem plausibly consistent with an absence of segmentation: If the responses of those reporting voluntary moves are reliable, is the 15-20% differential plausibly large enough to cover the value of benefits (which, on paper constitute between 31-60% of the wage), some return to risk, and whatever value is placed on one style of work vs another? The breakdown by motivation in table 3 could, in theory, offer some measure of the value of the latter but the differential for "independence" does not vary significantly from that for "higher pay" and, depending on the question, implies contradictory signs on the premium.¹³ If we interpret this ambiguity as implying a small effect, and the risk premium is positive, these leave the value of benefits even smaller-- a half or even a quarter of those on paper.

Three factors make this plausible and suggest a reason why the attraction of formal sector

¹³ World Bank estimates. See also Davila-Capalleja(1996)

employment may have been overstated. First, since the medical benefits program in Mexico, as elsewhere, covers a worker's entire family, the marginal value of benefits to the second formal sector worker in a family is zero. Second, administrative overhead costs are high and the benefits may be of low value given their cost. In his interviews with Guadalajara workers, Roberts (1989, p. 50) found that "many informants cited the deduction made for welfare as a disadvantage of formal employment, particularly since the services they received were poor." Third, rapid rates of turnover mean that leaving does not necessarily imply the loss of nominally very generous separation benefits and pensions since as Balán et. al (1973, p. 212) found in their extensive surveys of worker career trajectories in Monterrey, "many change enterprises quite often and thus they cannot benefit from the seniority accumulated in each of them." In each case, the value to workers of formal sector benefits is below their value on paper, and what, in the absence of a binding minimum wage, workers implicitly pay.¹⁴

In sum, earning differentials do not offer compelling evidence in favor of the segmentation hypothesis in Mexico and, given the difficulty of quantifying the unobservables, are unlikely ever to be convincing tests.

IV. Patterns of Mobility

In contrast, the patterns of worker transitions can offer additional information on the validity of the dualistic view. Ideally, a model of the behavior for each of the four sectors and workers' choices to enter them would be postulated and held up against the evidence. However, this is a vast

¹⁴ Bell (1994) argues that the minimum wage has virtually no impact on the distribution of average wages reported by firms in Mexico and little evidence of non-compliance since few firms paid wages below the minimum.

research agenda in itself and the present paper seeks only to develop a few provocative stylized facts about the dynamics of the market and sketch some characterizations of the nature and the interaction of the sectors.

To begin, the dualistic view predicts some general patterns should be evident. If formal sector work is preferred to informal work, we would expect that workers would queue up for formal sector jobs and relinquish them only under the limited conditions permitted by the Constitution-- egregious conduct or "acts of god" that induce firm downsizing.¹⁵ This should imply:

i. Very low rates of formal sector turnover.

ii. A largely unidirectional flow of workers who graduate from the informal sector into the formal sector where they stay until retirement. Flows in the other direction should be largely involuntary and in relatively prosperous times, far less. At the time of this sample, the Mexican economy was growing and since 1989, unemployment had been at decadal lows of around 2.6%.

iii. Given a probability of being selected from the queue in each time period, the probability of entry into formal salaried work should be an increasing function of experience.

This section tests for these patterns in two ways: First, for each definition of informality, Matrices 1 and 2 provide summary data on transitions among sectors by tabulating the conditional probability of finding a worker in sector j at the end of the period (columns) given that the worker began in sector i at the beginning (rows), P_{ij} .¹⁶ The row percentages sum to 100% and the totals at

¹⁵ The Constitution conceives of the employment relationship as a lifetime contract and workers may only be fired under extreme circumstances and at great cost.

¹⁶ In a spirit similar to the work at hand, Sedlacek et. al.(1995) studied the mobility of Brazilian workers with and without signed working cards, and hence worker projections, and found little evidence of strong barriers to mobility.

the bottom represent the share of the workers to be found in each category at the end of the period P_j . The first three columns and rows represent individuals who are not working: those out of the labor force (OLF), not currently working and not searching; those studying; and those looking for work, the unemployed. The bold rectangle borders five categories of work beginning with unpaid labor and the shaded area comprises the paid jobs described earlier which are our chief focus.

Since in a random shuffling of workers, P_{ij} would clearly increase with P_j , the second panel of the matrix standardizes the transition probabilities by terminal sector size, P_{ij}/P_j . Though this is a better measure of fluidity among sectors, it is an imperfect measure of ease of entry since a low desire to leave the initial sector will yield a low value as well as a distortion induced low level of turnover in the terminal sector:

$$P_{ij}/P_j = (1 - P_{ii})V_{ij}(1 - P_{jj})$$

V_{ij} tabulated in the third panel, captures the disposition or economic or institutional logic that compels a worker leaving the initial sector to enter an open position in j : e.g. though both third and fourth grade elementary school classes may fully turnover every year, we would expect V to be large for transitions in the ascending direction and zero in the reverse. In the present case, the disposition to enter paid employment from school is two to three times that of the reverse transitions as would be expected if workers generally graduate from school to employment. If the dualism hypothesis that workers graduate from informal to formal employment is correct, we should expect similar asymmetric V s between the sectors.

<< Matrices 1 & 2 here >>

Further characterization of the patterns of mobility is offered by a multinomial logit model of

sector choice that includes experience, experience squared, and schooling. Since these are often the factors included in Mincerian earnings equations, the initial period real wage is included to ensure that it is not simply the wage effect that is reflected. The coefficients in tables 4a and b are those from the standard exponential form

$$\frac{P_{ij}}{P_{ii}} = e^{X\beta_j}$$

where the vector β_j measures the degree to which an increase in worker characteristic X increases the probability of a worker going to sector j relative to the probability of staying in sector i. In the second half of each panel are presented the dummy and interactive effects of involuntary separation from the previous job, tabulated in the relatively infrequent case of a spell of unemployment between jobs. In only four cases does the likelihood ratio confirm the significance of these terms as a block (at the 10% level), but in no case does their inclusion cause a substantial alteration of the initial parameters. Again, with few exceptions, the results for the two samples are very similar.

<<Tables 4a-b here>>

Together, these first offer a view of overall labor force dynamics and then of how the four sectors interact.

I. Overview of the Labor Market

Three important general findings are immediately apparent. First, the matrices reveal high levels of mobility with turnover rates (and implicitly the length of tenure at 5.21-5.7 years) in the formal sector similar to those in the U.S..¹⁷ There appears little evidence of the rigidities that the

¹⁷ Median tenure for all workers over 16 years old in 1991 was 5.1 years. *BLS NEWS*, USDL 92-386. The implicit tenure based on turnover rates on mean July/August 1994 median separation rate of 1.1%/month was 7.6 years. Bureau of National Affairs, *Bulletin to Management*, Dec. 8, 1994. Mean tenure calculated as

incentives in the labor code would lead us to expect. Second, the symmetry of Vs across directions of movement in all sectors of paid work seems more consistent with a well-integrated market where workers search across sectors for job opportunities, than one where informal workers seek permanent status in the formal sector and stay until they retire.¹⁸ Finally, the logit results show that in no sector does the probability of moving into the formal sector relative to staying increase in overall experience as would be expected if there were queuing to enter the sector.¹⁹

<<Table 5 here>>

ii. Self-Employment as an Alternative to Formal Sector Employment

Self-employment constitutes the largest source of employment (25%), after formal salaried employment (50%). Although it may serve the traditionally postulated holding pattern or safety net for the latter, the data are consistent with it being a desirable sector in itself. As a first approximation it may be more correct to assume that small scale LDC firms have origins and dynamics similar to

$1/(1-P_{ij})$.

¹⁸ Although matching workers on multiple characteristics in the construction of the panels guards against record substitutions that would appear as transitions, two additional attempts were made to test the robustness of the results from the "protected" sample, neither of which can claim more validity than the raw transitions themselves. The first tabulated the transitions that occur in the third quarter if all other quarters are identical, assumes that these represent miscodings, and corrects the matrix accordingly. The second looks only at "confirmed" transitions where the initial and final positions were recorded twice consecutively. By treating even legitimate rapid turnovers as coding errors, both adjustment methods necessarily impart an upward bias to the tenure estimates and they do increase in all sectors. However, in neither case do the rankings of sectors by turnover or the symmetries of the IRM change substantially. Results available on request.

¹⁹ The one exception is from Informal Salaried to Formal Salaried in the Micro-enterprise sample where the overall impact of Exp and Exp squared evaluated at the mean experience level is positive, but not significant. Gregory (1986) analyzing Mexican data from 1940-1980 also finds no evidence of queuing to enter the formal sector "The empirical evidence...represents the antithesis of the Todaro [dualist] model. Rather than flowing into a queue to await the opening of improved employment opportunities, migrants moved quickly and easily into employment opportunities in both the formal and informal sectors..." p. 267

their industrial country counterparts, rather than being a distinct phenomenon.²⁰

First, the motivational responses from the joint NUES/MES panel discussed earlier (table 3) show that at least two-thirds of those entering self employment from formal salaried employment report moving voluntarily, with a desire for greater independence or higher pay cited as the principal motives. This percentage remains relatively unchanged even when the sample is restricted to those previously working in firms over 50 employees (available on request).²¹ These results are very close to Gottshalk and Maloney's (1985) finding that roughly 70% of U.S. job changes are voluntary. Put differently, if self-employment and, arguably contract work given the common earnings differentials, are close substitutes for formal salaried work, the implied rates of involuntary entry would be normal by U.S. standards.

The motivational reports are corroborated by the transitional evidence as well. Turnover rates, (and implicit tenure at 3.7 years) are far closer to those in the formal sector as would be expected from a destination sector than for the other two informal sectors. As in the U.S., self-employment is not an entry occupation from school (Aronson 1991) and there is little evidence that the sector serves as a holding pattern for young workers. The V values from school are only a fifth, and from unemployment about half, of those entering formal salaried employment. Transitions into self-employment from the other paid sectors occur 4 to 6 years later than transitions into the other

²⁰ See Levenson and Maloney (1997) for a discussion of alternative conceptions of LDC small firms, their dynamics, and their decisions to become "formal."

²¹ They are also supportive of Balán et al.'s finding that being one's own boss was well-regarded and that movements into self-employment from salaried positions often represented an improvement in job status. Of those moves from formal into self-employment they studied, 57% were to upward moves in job quality, 30% horizontal (which the authors argue is considered welfare improving because of the greater independence), and 11% downward (which also could be welfare improving eg., a supervisor who buys a grocery store may still consider himself better off).

alternatives, including formal salaried work (table 1), leaving the mean age 8 years higher than the next closest sector. From every paid sector, the logit results reveal that the probability of moving into self-employment relative to not moving at all is associated with greater experience, and (with the exception of contract work) higher real wages. These patterns, and Balán et al's longitudinal interviews, are supportive of the recent industrialized country literature on liquidity constraints, (exacerbated in the LDC context), that dictate a threshold level of financial and human capital necessary to start a business that can only be accumulated with time and work as a salaried employee.²²

As in the U.S., self-employment for some workers may serve as a form of partial retirement, but it is unlikely that the sector serves primarily this purpose, or as a safety net for laid off older workers who are unable to find new salaried jobs. First, the decreasing quadratic term on experience (with the exception of the contract sector for which it was never significant) implies that the influence of experience on the probability of moving into the self-employed sector increases at a decreasing rate, a result consistent with the findings of Brock, Evans, and Phillips (1986) for the U.S.. Further, though there is perhaps some weak evidence from the likelihood ratios on the formal/self-employed transition that those involuntarily leaving their previous job were more likely to end up self-employed than to stay formal, the reverse dynamic appears as strong: the significant likelihood and Z statistics on the involuntary interactive terms on the self-employed/formal transition suggest a safety net role

²² See Evans and Jovanovic (1989), Aronson (1991) p 23. Balán et al. argue that "First, the man must accumulate capital. This is no easy matter when he has a manual job and must provide for a large family, so it generally takes years to accumulate enough capital. There must be sufficient funds not only to set up the business, but also to keep it going during the months or years while it runs at a deficit. ...these kinds of capital requirements are modest enough, but the capital is not easy to come by for the working classes of Monterrey or elsewhere in Mexico. " p. 217. As with Evans and Leighton, they find that the percentage of workers entering self-employment was roughly constant across age cohorts.

played by the formal sector for failed entrepreneurs. The fact that, regardless of destination, the less-experienced are more likely to leave is in line with the mainstream literature on firm dynamics that younger firms (on average also less experienced workers) have higher failure rates.²³

But what would compel workers to give up the ostensibly large benefits in the formal sector? First, it may be that the decision process of the self-employed is not fundamentally different from that of their counterparts in the industrialized countries who also take on responsibility for medical insurance, or saving for retirement that was previously covered by their employers. Second, since the cost of benefits to employers reduces the wage component of formal sector remuneration, a perceived value below that cost as suggested by section II will lead workers to seek out jobs in the unregulated sector where remuneration is entirely monetary. Third, Balán et. al.'s interviews suggest that the very legislation that is thought to induce rigidities into the labor market in fact stimulates such turnover and encourages workers to leave salaried employment. The paucity of openings for promotion on the rigid "escalafon" as well as the ceiling on mobility opportunities for manual workers makes self-employment the remaining outlet for further advancement. These last two issues suggest that, in contrast to the usual view, the extant labor protections may make formal sector work less desirable, rather than less attainable.

This logic, which applies to all three informal sectors, is most compelling where small scale firms can offer remuneration comparable to that earned in the formal sector- among low education workers, unlikely to generate much firm specific capital. This is supported by the logit results that workers become less likely to leave formal employment for self-employment, or any other informal sector, as their education level increases. As the opportunity cost of being one's own boss rises with

²³ See Jovanovic (1982), Evans and Leighton (1989).

formal sector labor productivity, we may see a decline in the share of the labor force self-employed from its present levels.

ii. Contract work

The data cannot approach the level of institutional detail offered in the many case studies on this sub-sector (see f.n. 3) nor can the brief period examined establish whether contract work is the result of a process of deregulating activities that were previously regulated. However, its relatively small share of informal production (20%) suggests that it is probably incorrect to generalize sub-contracting relations to the informal sector as a whole. Further, the similarities to self-employment suggest that common motivations may underlie a worker's decision to engage in sub-contracting, and that the sector may not represent inferior work.

First, there is no characteristic that raises the probability of leaving contract work for salaried formal work as opposed to staying and the Vs are symmetrical: there seems to be little evidence of uni-directional graduation from contract work to formal salaried work. Nor is there strong evidence that movements into the sector are involuntary. The similarities of the self-employed and contract earnings differentials in section II suggested the possibility of similar motivations for entry into the sector and there is even less evidence from the logit regressions of involuntary movement: the involuntary dummy is significant at the 9% level in the "unprotected" sample only and of the wrong sign on the intercept although increasing with schooling. As with self-employment, the logit regressions show a positive, although insignificant, joint influence of the experience terms on entry from informal salaried employment. The fact that the joint impact of the experience terms is negative coming from formal salaried employment where for entry into self-employment it is positive may

suggest that the accumulation of capital is less necessary where the subcontracting firm provides needed inputs.

Given that those who move to contract work from formal salaried employment are, again, those with less education, it is possible that the low skilled laborer who prefers more independence, or who thinks he could do better on commission than in the factory, voluntarily moves to contract work. The differentials between costs to firms and value to workers of benefits discussed in section II offer a benign interpretation of informal subcontracting as a way of reducing firm costs: it becomes a Pareto improving trade where contract workers gain the value of benefits while firms' non-wage labor costs fall. Roberts' (1989) Guadalajara interviews suggest that given the very weak unions and low wages, informalization is not primarily a strategy for reducing remuneration and worker control over production: "Market uncertainty and the large number of income opportunities in the city mean that it is useful for *both* employees and employers to have flexibility in allocating labor." (italics added, p. 48). This may explain the high turnover in the sector. Since the matrices suggest that contract workers are less likely to become unemployed, leave the labor force, go to school or become unpaid than other workers, turnover seems unrelated to instability of employment in itself. Workers may *in fact be redefining themselves with rapid shifts in clientele: a self-employed worker who takes on a short term contract will suddenly appear to shift sectors.*

More generally, it is possible that sub-contracting is not so much a way of avoiding labor legislation, as avoiding the inefficiencies in it. Given the political difficulties of taking on the anachronisms in the 70 year old labor code, sub-contracting may represent less a threat to industrialized country worker protections, than a means to induce the flexibility necessary in a modern open economy that the data suggests is not obviously detrimental to the workers involved.

iii. Informal salaried employment and entry into work.

Even if the self-employed benefit from being their own bosses, the mainstream view is that those who work for them are the very worst off of the urban workforce: salaried, yet without benefits. However, rather than being a stagnant group of disadvantaged workers, the sector appears to serve primarily as the principal, although not exclusive, port of entry for young, poorly educated workers into paid employment. The mean age of 29 is 5 years below that of formal sector and contract workers and 14 years below that of the self-employed. The transition matrices show a cluster of high mobility between school, unpaid work and, to a lesser extent, unemployment that suggests a pool of workers not yet tracked into regular employment. Those leaving school and those unemployed show disproportionate movement into unpaid labor (and, to a lesser extent, informal salaried work). The extremely high Vs between school and unpaid work suggest intermittent work at home, or perhaps an apprenticeship before schooling is completed.

Subsequently unpaid workers move disproportionately into the informal salaried sector. This suggests that while and just after completing school, many help out at the family business, and eventually get paid. They spend on average only 2 years doing this before moving on to other paid work. The brevity of tenure is the same as that found in Brazil by Sedlacek et. al. and is similar to the U.S. where the median tenure for young workers 16 to 24 years of age is only 1.4 years and 25 to 34, 3.4 years.²⁴ Even if this pattern of graduation from school to unpaid to informal salaried work to other modes of work may represent the queuing that the dualistic literature might predict, the wait in informal salaried work is not long.

²⁴BLS News, USDL 92-386 for 1991.

However, if Hemmer and Mannel (1989) are correct that in many countries informal small enterprises train more apprentices and workers than the formal education system and the mostly government job-training schemes together, these years to large degree may constitute continued schooling. Further, the symmetry of the flows back *into* informal salaried employment from all three of the other sectors suggests that the opportunities there are not considered uniformly worse than those in the other sectors. The logit results suggest that from every sector, entering workers are those with less experience, less schooling and lower initial wages. Balán et al (1973 p. 132) provide one possible explanation: "The first years in the labor force are ones for learning skills, 'shopping around,' exploring alternatives... Very few men... held at age 25 the same job they had ten years earlier." The concentration among the very poor and uneducated again suggests the low opportunity cost of leaving formal sector employment. The better educated who push up the mean for schooling and wages in the formal sector (table 1), and who the logit results suggest are more likely to enter formal sector employment, may not consider salaried employment in the informal sector comparable, but those working menial or assembly line jobs at less well paying formal sector firms may. The evidence that the sector is a safety net for formal salaried unemployed is mixed. The likelihood on involuntary terms is significant only in the unprotected sample, but the intercept dummy suggests a *lower* probability of entering informal salaried employment if involuntarily separated with the probability increasing with experience.

VI. Conclusions

This paper offers an alternative to the traditional dualistic view of the interaction between the formal and informal sectors and some supportive evidence from observed patterns of transition among

them. It argues that there are good reasons for workers to prefer informal employment, both due to the relatively low levels of human capital, and the inefficiencies in the present labor codes.

This does not preclude institutional rigidities from accounting for some fraction of the sector, particularly during cyclical downturns. The period examined here was a relatively prosperous one where minimum wages were not binding. Nor does it rule out efficiency wage arguments as accurate descriptions of a subsegment of the formal work force. It is possible that the market is dualistic in the sense used in the industrialized world, but that the good job/bad job division cuts across issues of formality. Further, this view does not deny the possibility of exploitive relations arising from subcontracting, despite its plausible benefits to both parties.

But, much of the informal sector is likely to persist even in the absence of these effects. Both earnings differentials and patterns of mobility are consistent with much of the informal sector being a desirable destination and with the distinct modalities of work being relatively well integrated. There is little evidence to support the traditional dualistic view as the principal paradigm through which informality should be viewed.

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Table 1: Mean Age, Experience, Schooling, and Initial Real Wage
Mexico National Urban Employment Survey, 1991-92
 Unprotected (U) and Micro-enterprise (M) definitions

Transition Initial/Final	Def	Nobs	Age	Experience	School	Rwage
Formal Salaried/ Formal Salaried	U	4168	34.1 (0.19)	20.7 (0.21)	7.36 (0.04)	100.0 (0.10)
	M	4421	33.8 (0.18)	20.4 (0.20)	7.35 (0.04)	101.2 (0.10)
Self Employed/Formal Salaried	U	264	37.0 (0.75)	24.6 (0.83)	6.39 (0.60)	124.2 (0.61)
	M	301	36.3 (0.66)	23.8 (0.73)	6.47 (0.17)	121.7 (0.57)
Informal Salaried/Formal Salaried	U	315	28.7 (0.70)	16.0 (0.79)	6.66 (0.16)	70.3 (0.23)
	M	388	29.9 (0.63)	17.2 (0.72)	6.65 (0.15)	77.8 (0.24)
Contract/Formal Salaried	U	192	34.2 (0.80)	21.9 (0.90)	6.28 (0.21)	148.2 (1.46)
	M	241	34.3 (0.77)	22.1 (0.86)	6.17 (0.19)	146.4 (1.29)
Self Employed/Self Employed	U	1793	43.1 (0.28)	31.6 (0.32)	5.52 (0.08)	136.4 (0.59)
	M	1812	43.1 (0.28)	31.6 (0.32)	5.50 (0.07)	131.0 (0.56)
Informal Salaried/Self Employed	U	212	34.7 (0.89)	23.3 (1.01)	5.41 (0.21)	74.6 (0.28)
	M	209	35.0 (0.87)	23.2 (0.99)	5.75 (0.21)	78.5 (0.31)
Formal Salaried/Self Employed	U	270	36.2 (0.68)	23.7 (0.78)	6.56 (0.18)	106.8 (0.52)
	M	320	36.4 (0.64)	24.1 (0.72)	6.27 (0.17)	106.4 (0.50)
Contract/Self Employed	U	125	39.4 (1.19)	27.5 (1.35)	5.91 (0.28)	121.4 (0.86)
	M	133	39.1 (1.15)	27.2 (1.30)	5.93 (0.27)	121.0 (0.81)

Standard errors in (). Age, Employment Experience, Schooling in years, Rwage=initial real wage with formal sector wage as base.

Transitions correspond to initial and final positions across a five quarter period. Formality is defined in two ways:

Unprotected (U) = firms of under 16 total workers not covered by medical or social security benefits; Microenterprise (M)=

firms under 6 total workers. Self-employed= owners of informal firms. Salaried informal= workers in informal firms.

Contract workers = unsalaried workers on piecework, or other contract.

Table 1 (cont.)

Transition Initial/Final	Def	Nobs	Age	Experience	School	Rwage
Informal Salaried/Informal Salaried	U	529	29.0 (0.54)	16.9 (0.61)	6.11 (0.13)	69.8 (0.19)
	M	581	30.4 (0.51)	18.1 (0.58)	6.34 (0.12)	68.7 (0.16)
Self Employed/Informal Salaried	U	242	37.4 (0.86)	26.1 (0.96)	5.31 (0.20)	94.2 (0.37)
	M	244	37.7 (0.88)	26.5 (0.99)	5.23 (0.20)	97.6 (0.46)
Formal Salaried/Informal Salaried	U	308	29.6 (0.67)	17.0 (0.77)	6.62 (0.16)	87.2 (0.26)
	M	391	29.2 (0.62)	17.3 (0.70)	6.56 (0.15)	85.8 (0.27)
Contract/ Informal Salaried	U	116	34.3 (1.23)	22.7 (1.38)	5.59 (0.28)	101.8 (0.92)
	M	94	34.4 (1.22)	22.9 (1.43)	5.51 (0.32)	102.9 (1.10)
Contract/Contract	U	439	35.2 (0.59)	23.0 (0.66)	6.18 (0.15)	132.7 (0.45)
	M	439	35.3 (0.59)	23.0 (0.66)	6.23 (0.15)	131.1 (0.45)
Self Employed/Contract	U	149	37.3 (0.96)	25.2 (1.08)	6.09 (0.24)	134.6 (0.74)
	M	146	37.0 (0.97)	24.9 (1.08)	6.15 (0.24)	133.6 (0.73)
Informal Salaried/Contract	U	93	29.4 (1.19)	17.2 (1.31)	6.15 (0.32)	104.5 (1.78)
	M	88	29.2 (1.12)	16.7 (1.30)	6.53 (0.34)	105.7 (1.84)
Formal Salaried/Contract	U	212	31.5 (0.67)	18.7 (0.76)	6.87 (0.19)	111.3 (0.50)
	M	245	31.7 (0.65)	19.0 (0.72)	6.64 (0.18)	110.2 (0.49)

Standard errors in (). Age, Employment Experience, Schooling in years, Rwage=initial real wage with formal sector wage as base.

Transitions correspond to initial and final positions across a five quarter period. Formality is defined in two ways:

Unprotected (U) = firms of under 16 total workers not covered by medical or social security benefits; Microenterprise (M)=

firms under 6 total workers. Self-employed= owners of informal firms. Salaried informal= workers in informal firms.

Contract workers = unsalaried workers on piecework, or other contract.

Table 2a: Real Wage Differentials During Transitions
Informal Defined as Unprotected

Transition Initial/Final	Nobs	--Real Wage--			--Net Tax--		--Per Hour--		--Hours--	
		Mean	Rob	Med	Rob	Med	Rob	Med	Rob	Med
Self Employed/Self Employed	1793	-4.98	-1.02	-4.09	-1.02	-4.09	1.03	-3.70	-4.78	0.00
			(0.70)	(1.56)	(0.70)	(1.53)	(0.62)	(2.67)	(4.95)	(0.00)
Informal Salaried/Informal Salaried	529	0.63	1.24	2.72	2.06	2.72	0.77	-1.24	0.51	0.00
			(0.74)	(2.83)	(1.21)	(1.56)	(0.42)	(0.65)	(0.54)	(0.00)
Formal Salaried/Formal Salaried	4168	7.95	5.59	4.42	7.64	6.45	8.02	6.69	-0.06	0.00
			(9.44)	(5.27)	(12.98)	(9.27)	(11.94)	(9.58)	(0.27)	(0.00)
Contract/Contract	439	3.09	2.50	-0.13	2.50	-0.13	1.29	-0.20	-0.50	0.00
			(1.07)	(0.05)	(1.07)	(0.04)	(0.54)	(0.05)	(0.40)	(0.00)
Self Employed-Informal Salaried	242	-24.38	-19.16	-19.22	-19.82	-19.70	-20.42	-21.53	-5.14	0.00
			(6.87)	(4.93)	(7.17)	(5.10)	(6.73)	(4.81)	(2.28)	(0.00)
Informal Salaried/Self Employed	212	22.83	17.72	16.04	19.83	16.04	24.82	22.28	-10.54	-6.25
			(3.69)	(1.95)	(4.08)	(3.63)	(4.87)	(3.41)	(3.91)	(1.78)
Self Employed/Formal Salaried	264	-10.90	1.41	0.64	-3.29	-3.92	-13.39	-13.32	-0.63	0.00
			(0.39)	(0.18)	(0.95)	(0.67)	(3.93)	(4.62)	(0.32)	(0.00)
Formal Salaried/Self Employed	270	16.71	8.33	0.53	14.99	6.18	27.27	23.63	-5.52	-4.17
			(2.14)	(0.15)	(3.63)	(1.41)	(5.91)	(7.24)	(3.02)	(1.44)
Informal Salaried/Formal Salaried	315	19.45	20.31	17.71	18.24	15.81	17.52	14.18	-0.23	0.00
			(7.24)	(4.40)	(6.75)	(5.13)	(6.26)	(5.41)	(0.22)	(0.00)
Adjusted by Firm Size		13.60	14.41	12.62	12.95	9.01	11.69	7.55		
			(5.49)	(4.51)	(5.06)	(3.78)	(4.39)	(2.28)		
Formal Salaried/Informal Salaried	308	-12.04	-7.96	-9.41	-5.22	-6.26	-2.08	-3.74	-0.32	0.00
			(3.31)	(5.28)	(2.13)	(2.30)	(0.87)	(1.45)	(0.29)	(0.00)
Adjusted by Firm Size		-7.82	-3.88	-5.07	-0.25	-1.16	2.94	2.48		
			(1.53)	(1.26)	(0.10)	(0.39)	(1.13)	(0.87)		
Contract/Self Employed	125	20.95	6.08	8.43	6.08	8.43	13.18	11.90	-7.09	-2.17
			(1.25)	(1.13)	(1.25)	(1.45)	(2.18)	(1.43)	(2.14)	(0.70)
Self Employed/Contract	149	-7.95	-4.98	-9.91	-4.98	-9.91	-6.74	-12.97	-2.06	0.00
			(1.08)	(1.62)	(1.08)	(1.60)	(1.42)	(1.91)	(0.62)	(0.00)
Informal Salaried/Contract	93	-3.76	16.98	7.90	20.84	12.81	25.19	18.77	3.63	4.17
			(2.74)	(0.72)	(3.31)	(2.48)	(3.53)	(1.38)	(1.22)	(1.48)
Contract/ Informal Salaried	116	-16.66	-10.61	-13.68	-12.08	-13.68	-5.67	-5.83	-6.35	-2.17
			(2.83)	(2.66)	(3.29)	(2.44)	(1.24)	(0.89)	(2.83)	(1.17)
Formal Salaried/Contract	212	11.40	18.16	16.43	25.36	23.51	19.79	14.85	4.11	0.00
			(4.57)	(4.86)	(6.13)	(5.83)	(4.69)	(3.59)	(3.00)	(0.00)
Contract/Formal Salaried	192	-17.60	-7.70	-13.68	-13.12	-16.26	-15.81	-14.19	-0.80	0.00
			(2.23)	(3.05)	(4.11)	(3.71)	(4.99)	(5.02)	(0.47)	(0.00)

Notes: "t" statistics beneath coefficient. "Real Wage" =real wage differential in %; "Net Tax" =differential net of taxes.

"Per Hour"=differential in net wage/hours worked;"Hours"=differential in hours worked. "Mean"=average differential weighted by initial real wage to give differential between sample. "Rob"=robust mean using Huber weights to redress non-normality;"Med" = median from quantile regression using bootstrapped standard errors.

Table 2b: Real Wage Differentials During Transitions
Informal Defined as Microenterprise

Transition Initial/Final	Nobs	--Real Wage--			--Net Tax--		--Per Hour--		--Hours--	
		Mean	Rob	Med	Rob	Med	Rob	Med	Rob	Med
Self Employed/Self Employed	1812	-5.35	-1.31 (0.91)	-4.21 (1.60)	-1.31 (0.91)	-4.21 (1.60)	0.98 (0.60)	-4.09 (2.04)	-1.63 (2.26)	0.00 (0.00)
Informal Salaried/Informal Salaried	581	-0.13	2.65 (1.64)	2.72 (2.01)	2.65 (1.64)	2.72 (2.01)	1.87 (1.15)	-0.36 (0.16)	0.83 (1.27)	0.00 (0.00)
Formal Salaried/ Formal Salaried	4421	6.84	5.28 (8.95)	4.02 (8.32)	7.26 (12.44)	6.35 (8.64)	7.53 (11.31)	6.42 (8.60)	0.42 (2.54)	0.00 (0.00)
Contract/Contract	439	3.09	2.50 (1.07)	-0.13 (0.04)	2.50 (1.07)	-0.13 (0.04)	1.29 (0.54)	-0.20 (0.08)	0.17 (0.16)	0.00 (0.00)
Self Employed-Informal Salaried	244	-26.41	-20.53 (7.41)	-22.31 (5.31)	-20.53 (7.41)	-22.31 (5.31)	-20.76 (7.05)	-22.31 (5.01)	-0.89 (0.56)	0.00 (0.00)
Informal Salaried/Self Employed	209	27.05	18.87 (3.92)	16.04 (2.93)	18.87 (3.92)	16.04 (2.93)	23.30 (4.66)	22.28 (3.88)	-3.37 (1.78)	-1.64 (0.57)
Self Employed/Formal Salaried	301	-13.47	-0.71 (0.21)	-0.90 (0.16)	-6.15 (1.94)	-7.84 (1.55)	-13.59 (4.17)	-13.02 (2.83)	3.77 (1.90)	0.00 (0.00)
Formal Salaried/Self Employed	320	17.66	8.69 (2.41)	3.96 (0.74)	16.63 (4.36)	11.82 (2.36)	27.61 (6.48)	24.51 (5.95)	-3.55 (2.27)	0.00 (0.00)
Informal Salaried/Formal Salaried	388	19.25	14.40 (5.74)	11.28 (3.11)	8.78 (3.70)	5.16 (1.70)	8.71 (3.52)	6.75 (1.71)	0.12 (0.19)	0.00 (0.00)
Adjusted by Firm Size		10.58	6.05 (2.64)	5.45 (1.67)	0.49 (0.23)	-0.87 (0.41)	0.85 (0.38)	-1.98 (0.79)		
Formal Salaried/Informal Salaried	391	-3.92	-1.91 (0.89)	-2.89 (1.03)	5.06 (2.22)	3.87 (1.42)	6.14 (2.57)	1.68 (0.60)	0.99 (1.36)	0.00 (0.00)
Adjusted by Firm Size		3.11	5.23 (2.26)	5.33 (2.31)	13.41 (5.42)	12.79 (5.44)	15.09 (5.78)	11.98 (3.40)		
Contract/Self Employed	133	17.00	6.95 (1.45)	8.43 (1.18)	6.95 (1.45)	8.43 (1.18)	14.29 (2.44)	11.92 (1.94)	-2.91 (1.13)	0.00 (0.00)
Self Employed/Contract	146	-5.21	-3.63 (0.77)	-7.28 (1.56)	-3.63 (0.77)	-7.28 (1.56)	-7.57 (1.64)	-13.68 (2.02)	2.72 (1.00)	0.00 (0.00)
Informal Salaried/Contract	88	-3.86	15.08 (2.46)	7.90 (0.87)	15.08 (2.46)	7.90 (0.87)	19.61 (2.81)	15.15 (1.35)	1.88 (0.95)	3.28 (1.59)
Contract/ Informal Salaried	94	-19.69	-12.68 (3.37)	-13.68 (2.76)	-12.68 (3.37)	-13.68 (2.76)	-6.29 (1.24)	-4.95 (0.88)	-1.82 (0.88)	0.00 (0.00)
Formal Salaried/Contract	245	12.89	18.94 (4.78)	15.92 (4.01)	27.84 (6.69)	24.70 (6.26)	22.60 (5.33)	14.90 (3.28)	3.82 (3.73)	1.64 (1.05)
Contract/Formal Salaried	241	-18.66	-7.13 (2.19)	-13.68 (3.48)	-12.87 (4.31)	-17.62 (4.60)	-14.07 (4.78)	-14.19 (4.56)	0.07 (0.06)	0.00 (0.00)

Notes: "t" statistics beneath coefficient. "Real Wage" =real wage differential in %; "Net Tax" =differential net of taxes.
"Per Hour"=differential in net wage/hours worked;"Hours"=differential in hours worked . "Mean"=average differential weighted by initial real wage to give differential between sample. "Rob"=robust mean using Huber weights to redress non-normality ; "Med" = median from quantile regression using bootstrapped standard errors.

Table 3: Real Wage Differentials NUES/MES Panel
Destination Sector: Self-Employment

Sector of Origin	Nobs	--Real Wage--		--Net Tax--		--Net K Costs--		Per Worker Hr		--Hours--	
		Rob	Med	Rob	Med	Rob	Med	Rob	Med	Rob	Med
Informal Salaried	139	33.17 (4.54)	25.60 (3.59)	30.26 (4.27)	25.60 (4.15)	25.36 (3.57)	22.09 (2.70)	18.30 (2.58)	10.63 (2.26)	5.52 (1.43)	8.33 (2.78)
Contract Work	125	9.83 1.57	-0.77 (0.08)	7.76 (1.27)	-0.77 (0.06)	-0.77 (0.13)	-10.45 (1.13)	-3.74 (0.60)	-7.63 (0.70)	-0.04 (0.00)	2.27 (0.66)
Formal Salaried	192	10.97 (2.20)	5.35 (1.34)	17.21 (3.31)	11.36 (1.51)	14.85 (2.86)	10.73 (2.15)	12.63 (2.16)	10.01 (1.96)	-1.91 (0.52)	2.00 (0.88)
Reason Left Previous Formal Salaried Job (Exclusive Response)											
More Independence	67 35%	20.16 (2.22)	12.88 (1.60)	27.14 (2.90)	17.80 (7.14)	24.57 (2.66)	16.05 (1.65)	21.59 (2.16)	19.64 (1.66)	-4.61 (0.88)	0.00 (0.00)
Higher Pay	62 32%	19.25 (2.19)	13.48 (0.79)	25.54 (2.82)	18.94 (1.34)	24.50 (2.73)	18.92 (0.91)	16.74 (1.57)	12.09 (1.25)	6.15 (0.96)	12.00 (1.82)
Involuntary	55 29%	-8.76 (1.13)	-5.42 (0.44)	-2.64 (0.32)	0.07 (0.00)	-5.08 (0.60)	-3.83 (0.34)	-2.59 (0.24)	-14.66 (0.95)	-4.09 (0.51)	9.09 (1.17)
Reason for Starting Micro -Enterprise (Multiple Response)											
To be Independent	120	8.94 (1.40)	8.66 (3.27)	14.61 (2.19)	14.66 (3.00)	14.04 (2.13)	13.89 (1.90)	3.61 (0.51)	12.85 (1.36)	-3.57 (0.75)	2.00 (0.38)
Higher Pay	63	22.45 (3.06)	17.68 (1.65)	30.94 (4.10)	28.11 (2.88)	28.17 (3.79)	27.80 (3.70)	21.25 (2.82)	18.82 (2.53)	3.53 (0.66)	5.00 (1.53)
Fired or Unable to Find Other Work	38	-11.93 (1.51)	-8.83 (0.94)	-6.88 (0.83)	-3.73 (0.28)	-7.72 (0.96)	-7.35 (0.72)	-18.15 (1.78)	-19.94 (1.82)	9.44 (1.32)	11.11 (1.59)
Tradition	12	32.45 (1.40)	22.50 (0.56)	28.32 (1.42)	24.32 (0.62)	22.21 (0.82)	24.14 (0.49)	9.48 (0.28)	-8.64 (0.22)	18.27 (2.11)	24.07 (1.82)

Notes: "t" statistics beneath coefficient. "Real Wage" =real wage differential in %; "Net Tax"=differential net of taxes.

"Net K Costs"= tax adjusted differential net of capital costs imputed at 10% of sum of value of tools, inventories, and location if owned.

"Per Worker Hour"=capital cost and tax adjusted differential adjusted for total hours worked by all workers including those unpaid ;

"Hours"= differential in hours worked by principal worker. "Rob"=robust mean using Huber weights to redress non-normality.

"Med" = median from quantile regression using bootstrapped standard errors.

Table 4a: Worker Characteristics Affecting Sectoral Transitions Across Five Quarters
Multinomial Logit, Informal Defined as Unprotected

Initial Sector: Self Employed		---Involuntary Interactive Terms---										LR
Final:	C	Exp 1/	Exp2	School	Rwage	Invol	Exp	Exp2	School	Rwage	chi2(5)	
Informal Salaried	1.09 (2.88)	-0.10 (5.14)	1.02E-03 (3.19)	-0.11 (3.88)	-17.54 (4.28)	25.45 (2.08)	-0.40 (0.87)	-1.99E-02 (1.39)	-2.96 (1.97)	155.16 (1.20)	26.07 [0.00]	
Formal Salaried	-0.58 (1.58)	-0.06 (2.98)	4.24E-04 (1.24)	0.00 (0.09)	-1.86 (0.87)	5.70 (2.13)	-0.15 (1.28)	8.86E-04 (0.44)	-0.34 (1.39)	0.70 (0.03)	10.35 [0.07]	
Contract	-0.90 (1.94)	-0.05 (2.08)	2.20E-04 (0.50)	-0.04 (1.22)	-0.25 (0.19)	-1.03 (0.23)	-0.16 (0.93)	3.22E-03 (1.06)	0.20 (0.46)	8.17 (0.19)	1.52 [0.91]	
Number of obs = 2448						chi2(27) = 211.15 [00]						
Pseudo R2 = 0.0497						Log Likelihood = -2018						

Initial Sector: Informal Salaried		---Involuntary Interactive Terms---										LR
Final:	C	Exp 1/	Exp2	School	Rwage	Invol	Exp	Exp2	School	Rwage	chi2(5)	
Self Employed	-2.43 (6.05)	0.10 (4.21)	-1.17E-03 (2.96)	0.04 (1.13)	3.92 (0.57)	-1.17 (0.40)	0.19 (1.11)	-3.45E-03 (1.19)	0.07 (0.32)	-64.82 (0.82)	2.33 [0.80]	
Formal Salaried	-1.12 (3.24)	-1.72E-03 (0.09)	1.90E-04 (0.54)	0.09 (2.73)	-1.08 (0.16)	1.27 (0.57)	-0.04 (0.32)	1.02E-04 (0.04)	-0.30 (1.51)	42.28 (1.14)	4.68 [0.46]	
Contract	-2.93 (5.30)	0.05 (1.46)	-8.51E-04 (1.35)	0.04 (0.71)	21.66 (2.97)	5.24 (1.90)	-0.08 (0.52)	-3.19E-04 (0.10)	-0.41 (1.61)	-42.63 (0.72)	6.85 [0.23]	
Number of obs = 1149						chi2(27) = 89.34 [00]						
Pseudo R2 = 0.0317						Log Likelihood = -1365						

Initial Sector: Formal Salaried		---Involuntary Interactive Terms---										LR
Final:	C	Exp 1/	Exp2	School	Rwage	Invol	Exp	Exp2	School	Rwage	chi2(5)	
Self Employed	-2.87 (8.31)	0.06 (2.81)	-1.02E-03 (2.83)	-0.09 (3.23)	5.59 (1.87)	1.54 (1.04)	0.01 (0.07)	6.51E-04 (0.51)	0.00 (0.03)	-9.50 (0.50)	35.76 [0.00]	
Informal Salaried	0.62 (2.05)	-0.11 (6.45)	1.10E-03 (3.99)	-0.25 (8.81)	-2.86 (0.61)	-2.15 (1.20)	0.40 (2.17)	-1.21E-02 (1.94)	0.08 (0.48)	12.46 (0.49)	14.61 [0.01]	
Contract	-1.68 (4.64)	0.02 (0.84)	-1.28E-03 (2.67)	-0.19 (5.90)	10.72 (3.91)	-5.79 (1.47)	0.21 (1.54)	-1.38E-03 (0.53)	0.65 (2.05)	-78 (1.13)	9.46 [0.09]	
Number of obs = 4958						chi2(27) = 256.67 [00]						
Pseudo R2 = 0.0423						Log Likelihood = -2905						

Initial Sector: Contract		---Involuntary Interactive Terms---										LR
Final:	C	Exp 1/	Exp2 2/	School	Rwage	Invol	Exp	Exp2	School	Rwage	chi2(5)	
Self Employed	-2.09 (4.62)	0.03 (2.93)		0.05 (1.30)	-5.12 (1.15)	-5.23 (1.16)	0.16 (1.84)		0.50 (1.31)	-37.04 (0.75)	8.29 [0.08]	
Informal Salaried	0.09 (0.21)	-0.01 (1.39)		-0.09 (1.95)	-19.77 (2.92)	-1.06 (0.30)	0.09 (1.20)		0.28 (0.88)	-65.19 (1.29)	6.61 [0.16]	
Formal Salaried	-0.63 (1.75)	-0.01 (1.09)		-0.02 (0.50)	2.82 (1.30)	-4.79 (0.98)	0.10 (1.03)		0.51 (1.19)	-24.49 (0.49)	1.97 [0.74]	
Number of obs = 872						chi2(21) = 54.32 [00]						
Pseudo R2 = 0.0254						Log Likelihood = -1042						

Notes: coefficients of logit reflect how experience, experience squared, schooling, and the initial real wage affect the probability of moving from the initial sector to the final sector relative to the probability of staying in the initial sector. The second half of each panel presents the dummy and interactive effect of involuntary separation from the previous job (tabulated only if unemployed between jobs). "z" statistics beneath coefficient in (); "P-values" in []. Involuntary interactive dummies=1 if involuntarily separated & unemployed. LR= likelihood ratio test of joint significance of interactive effects. 1/ Sign of compound value of Exp, Exp2 evaluated at mean is that of Exp with the exception of FS to Contract. 2/ Exp2 never significant in Contract regressions at 10% and dropped.

Table 4b: Worker Characteristics Affecting Sectoral Transitions Across Five Quarters
Multinomial Logit, Informal Defined as Micro-enterprise

Initial Sector: Self Employed						---Involuntary Interactive Terms---					LR
Final:	C	Exp 1/	Exp2	School	Rwage	Invol	Exp	Exp2	School	Rwage	chi2(5)
Informal Salaried	1.27 (3.45)	-0.12 (6.36)	1.34E-03 (4.40)	-0.13 (4.45)	-12.44 (3.31)	628 (0.00)	9.54 (0.00)	-1.24E+00 (0.00)	-115 (0.00)	5869 (0.00)	24.11 [0.00]
Formal Salaried	-0.77 (2.13)	-0.03 (1.47)	-1.91E-04 (0.54)	0.00 (0.07)	-1.68 (0.79)	7.18 (2.83)	-0.23 (2.00)	2.01E-03 (1.01)	-0.40 (1.71)	-0.98 (0.04)	21.62 [0.00]
Contract	-0.97 (2.06)	-0.05 (1.96)	1.49E-04 (0.33)	-0.04 (1.12)	-0.09 (0.08)	-0.92 (0.21)	-0.17 (0.97)	3.39E-03 (1.10)	0.20 (0.47)	9.21 (0.21)	1.55 [0.91]
Number of obs = 2503						chi2(27) = 238.341 [00]					
Pseudo R2 = 0.0540						Log Likelihood = -2086					

Initial Sector: Informal Salaried						---Involuntary Interactive Terms---					LR
Final:	C	Exp 1/	Exp2	School	Rwage	Invol	Exp	Exp2	School	Rwage	chi2(5)
Self Employed	-2.19 (5.45)	0.06 (2.48)	-6.42E-04 (1.59)	0.01 (0.15)	17.77 (2.39)	-4.82 (1.58)	0.28 (1.55)	-3.56E-03 (1.07)	0.25 (1.06)	-11.83 (0.27)	4.80 [0.44]
Formal Salaried	-0.70 (2.18)	-0.04 (2.11)	6.87E-04 (2.07)	0.02 (0.73)	23.53 (3.77)	5.04 (1.54)	-0.04 (0.25)	-7.97E-05 (0.03)	-0.39 (1.42)	-166 (1.67)	10.51 [0.62]
Contract	-2.39 (4.63)	0.01 (0.38)	-5.00E-04 (0.74)	-0.01 (0.18)	34.48 (4.49)	6.24 (1.75)	-0.16 (0.75)	6.26E-04 (0.10)	-0.33 (1.06)	-114 (1.25)	5.25 [0.39]
Number of obs = 1266						chi2(27) = 90.26 [00]					
Pseudo R2 = 0.0296						Log Likelihood = -1477					

Initial Sector: Formal Salaried						---Involuntary Interactive Terms---					LR
Final:	C	Exp 1/	Exp2	School	Rwage	Invol	Exp	Exp2	School	Rwage	chi2(5)
Self Employed	-2.66 (8.64)	0.07 (3.79)	-1.27E-03 (3.84)	-0.12 (4.90)	5.10 (1.89)	1.52 (1.20)	-0.02 (0.37)	1.28E-03 (1.09)	0.02 (0.16)	-21.23 (0.98)	29.15 [0.00]
Informal Salaried	0.44 (1.70)	-0.09 (6.21)	9.29E-04 (3.48)	-0.22 (8.92)	-6.34 (1.51)	-0.46 (0.37)	0.05 (0.75)	-4.75E-04 (0.33)	0.05 (0.37)	5.91 (0.30)	8.86 [0.12]
Contract	-1.66 (5.14)	0.02 (1.11)	-1.22E-03 (2.86)	-0.19 (6.53)	8.98 (3.46)	-1.48 (0.68)	0.20 (1.49)	-2.85E-03 (0.95)	0.12 (0.65)	-56.78 (1.22)	1.86 [0.87]
Number of obs = 5377						chi2(27) = 281.92 [00]					
Pseudo R2 = 0.0397						Log Likelihood = -3409					

Initial Sector: Contract						---Involuntary Interactive Terms---					LR
Final:	C	Exp 1/	Exp2 2/	School	Rwage	Invol	Exp	Exp2	School	Rwage	chi2(5)
Self Employed	-1.97 (1.47)	0.02 (2.78)		0.05 (1.29)	-5.05 (1.17)	-6.03 (1.29)	0.17 (1.90)		0.54 (1.39)	-29.37 (0.62)	8.29 [0.08]
Informal Salaried	-0.01 (0.01)	-0.01 (1.43)		-0.10 (2.05)	-19.34 (2.63)	-6.23 (1.28)	0.16 (1.75)		0.57 (1.39)	-17.49 (0.34)	4.84 [0.30]
Formal Salaried	-0.33 (0.97)	-0.01 (1.21)		-0.03 (0.92)	2.77 (1.36)	-0.32 (0.09)	0.05 (0.71)		0.23 (0.71)	-72.01 (1.52)	3.72 [.44]
Number of obs = 907						chi2(21) = 48.42 [00]					
Pseudo R2 = 0.0219						Log Likelihood = -1082					

Notes: coefficients of logit reflect how experience, experience squared, schooling, and the initial real wage affect the probability of moving from the initial sector to the final sector relative to the probability of staying in the initial sector. The second half of each panel presents the dummy and interactive effect of involuntary separation from the previous job (tabulated only if unemployed between jobs). "z" statistics beneath coefficient in(); "P-values" in []. Involuntary interactive dummies=1 if involuntarily separated & unemployed. LR= likelihood ratio test of joint significance of interactive effects. 1/ Sign of compound value of Exp, Exp2 evaluated at mean is that of Exp with the exception of FS to Contract. 2/ Exp2 never significant in Contract regressions at 10% and dropped.

Matrix 1: Worker Transitions Among Sectors of the Labor Market Across Five Quarters

Informal Defined as Unprotected

Mexico National Urban Employment Survey, 1991-1992

Probability of moving from initial to final sector, P_{ij}, in percent

Initial Sector	Final Sector										Total
	OLF	School	Unemp	Unpaid	SE	IS	FS	Contract	Other		
Out of Labor Force (OLF)	72	1	7	1	9	2	5	1	2	100	
School	2	53	5	6	2	9	17	3	4	100	
Unemployed	14	4	20	2	11	11	26	5	7	100	
Unpaid	3	12	6	27	15	17	10	6	4	100	
Self Employed (SE)	2	0	2	1	66	8	9	5	6	100	
Informal Salaried (IS)	1	2	4	3	16	38	23	7	5	100	
Formal Salaried (FS)	2	1	3	0	5	6	76	4	4	100	
Contract	1	0	2	0	14	12	20	45	5	100	
Other	3	2	5	1	21	11	34	7	18	100	
Total (P _j)	6	4	4	2	21	11	40	8	5	100	

P_{ij} standardized by final sector size, P_{ij}/P_j

Initial Sector	Final Sector									
	OLF	School	Unemp	Unpaid	SE	IS	FS	Contract	Other	
Out of Labor Force (OLF)	23	172	48	42	22	13	15	41		
School	26	128	373	10	88	42	37	70		
Unemployed	231	95	97	50	108	66	59	148		
Unpaid	55	299	168	69	157	25	77	82		
Self Employed (SE)	37	8	53	67	78	22	70	114		
Informal Salaried (IS)	25	52	108	200	74	57	95	98		
Formal Salaried (FS)	29	14	68	25	25	53	54	71		
Contract	24	11	49	17	64	115	50	101		
Other	46	42	134	63	99	107	84	91		

V_{ij} = P_{ij}/P_j * (1 - P_{ii}) * (1 - P_{jj})

Initial Sector	Final Sector									
	OLF	School	Unemp	Unpaid	SE	IS	FS	Contract	Other	
Out of Labor Force (OLF)	171	767	231	438	126	198	97	175		
School	194	341	1083	62	303	371	145	177		
Unemployed	1029	253	166	187	218	347	135	222		
Unpaid	265	867	287	277	345	145	190	134		
Self Employed (SE)	383	53	196	272	370	274	375	400		
Informal Salaried (IS)	144	180	218	440	353	385	278	190		
Formal Salaried (FS)	424	124	355	143	304	357	410	354		
Contract	155	43	111	41	345	338	381	219		
Other	194	106	201	103	350	206	420	197		

Notes: Sample aggregates three panels 1990:3-91:3, 1991:1-1992:1, 1991:2-92:2 generating roughly 15,000 observations.

Includes male workers, 16-65 with high school education or less in 16 metropolitan areas.

Informal defined as workers in firms under 16 workers not covered by medical or social security benefits. SE, IS, Contract are informal. FS is Formal.

Boxed cells represent work, light shading=paid work, darker shading=probability of remaining in same sector.

By compensating for final sector size, P_{ij}/P_j gives a measure of fluidity among sectors.

By compensating for rates of turnover in initial and final sectors, V_{ij} gives a measure of disposition (logic) to move to a sector.

Matrix 2: Worker Transitions Among Sectors of the Labor Market Across Five Quarters
Informal Defined as Micro-enterprise
 Mexico National Urban Employment Survey, 1991-1992

Probability of moving from initial to final sector, P_{ij}, in percent

Initial Sector	Final Sector									
	OLF	School	Unemp	Unpaid	SE	IS	FS	Contract	Other	Total
Out of Labor Force (OLF)	73	1	6	1	10	3	5	1	0	100
School	2	49	3	6	3	9	25	3	0	100
Unemployed	20	4	22	3	11	11	24	5	0	100
Unpaid	3	11	5	27	16	18	13	6	0	100
Self Employed (SE)	2	0	2	1	69	9	10	5	1	100
Informal Salaried (IS)	2	2	1	3	16	41	29	7	0	100
Formal Salaried (FS)	1	1	1	0	6	7	71	5	0	100
Contract	1	0	1	0	15	10	26	43	1	100
Other	0	0	2	0	26	6	34	6	27	100
Total (P _{.j})	5	4	2	2	22	12	45	8	1	100

P_{ij} standardized by final sector size, P_{ij}/P_{.j}

Initial Sector	Final Sector									
	OLF	School	Unemp	Unpaid	SE	IS	FS	Contract	Other	
Out of Labor Force (OLF)		24	321	45	43	23	12	13	15	
School	31		155	389	11	77	55	41	13	
Unemployed	385	113		161	51	91	53	60	0	
Unpaid	61	306	259		72	159	30	77	0	
Self Employed (SE)	41	9	91	71		77	23	70	128	
Informal Salaried (IS)	31	54	60	180	71		64	83	38	
Formal Salaried (FS)	26	26	38	30	27	63		58	50	
Contract	25	12	36	17	68	86	59		72	
Other	9	0	97	0	115	49	75	73		

$$V_{ij} = P_{ij}/P_{.j} * (1 - P_{ii}) * (1 - P_{jj})$$

Initial Sector	Final Sector									
	OLF	School	Unemp	Unpaid	SE	IS	FS	Contract	Other	
Out of Labor Force (OLF)		180	1551	229	517	145	201	89	79	
School	230		394	1050	71	257	498	146	36	
Unemployed	1856	287		283	209	199	313	140	0	
Unpaid	311	825	454		314	369	185	190	0	
Self Employed (SE)	487	57	374	309		413	335	406	556	
Informal Salaried (IS)	199	182	130	418	383		491	257	88	
Formal Salaried (FS)	449	234	224	187	397	483		483	312	
Contract	172	45	85	41	393	266	483		180	
Other	45	0	171	0	500	114	468	182		

Notes: Sample aggregates three panels 1990:3-91:3, 1991:1-1992:1, 1991:2-92:2 generating roughly 15,000 observations. Includes male workers, 16-65 with high school education or less in 16 metropolitan areas. Informal defined as workers in firms under 6 workers. SE, IS, Contract are informal. FS is Formal. Boxed cells represent work, light shading=paid work, darker shading=probability of remaining in same sector. By compensating for final sector size, P_{ij}/P_{.j} gives a measure of fluidity among sectors. By compensating for rates of turnover in initial and final sectors, V_{ij} gives a measure of disposition (logic) to move to a sector.

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