

Migration and the Urban Informal Sector in Colombia

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Abstract:

Rural-urban migration has been an important determinant of the urbanization process in Colombia. Although migration flows have been declining and they explain less of urban population growth, the recent intensification of armed conflict in the country is again pushing rural population to urban centers. Migration flows can explain most of the increase of the urban labor supply, which along with a decreasing labor demand, brought by the crisis of the 1990's, has produced an increasing unemployment rate and deterioration in the quality of employment (unemployment and informal sector). This paper seeks to address two main questions. First, it looks for changes in the migrant profile from 1984 to 1992 and 2000. Second, the paper identifies, for year 2000, if migration status is one of the key determinants of working in the informal sector. Empirical findings confirm that migration profile has changed, especially from 1992 to 2000, towards a higher participation of rural flows and higher participation of men probably as a consequence of intensification of armed conflict. Results also indicate that migration condition has a large impact on the probability of being employed in the informal sector – under any definition used- or being unemployed, especially for women. Results suggest a strong assimilation process in the urban labor market for female migrants, but a weak process for male migrants. The analyses carried out here provide some lights on three dimensions for the relation between migration and informal labor markets: first, data quality; second, conceptualization of the informal sector; and third, evidence to facilitate a successful insertion of migrants in the labor market.

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Introduction

Rural-urban migration has been an important determinant of the urbanization process that the country has been experiencing since the middle of last century. Although there is no agreement on the estimates on the intensity of rural migration flows to urban sites, there is consensus on their large importance during the 1950's and 1960's and their declining role on urban population growth rate thereafter (Flórez, 2000). Besides the importance of rural migration on urbanization rate, there is a lack of information on rural urban migration behavior during the last decades¹. It seems that rural migration flows have been declining since the 1970's but selectivity by age and sex persists: rural migrants have been mainly young women. Although migration flows have been declining and they explain less of urban population growth, the intensification of armed conflict in the country is again pushing rural population to urban centers (Ibañez and Vélez, 2003a). However, patterns by age and sex may have changed. Women, children and ethnic minorities are respectively 49%, 49% and 38% of this population (RSS, 2002).

Migration flows can explain most of the accelerated increase of the urban labor supply in the 1980's, and, along with the increase in the level of education and the decline in fertility rates, explain great part of the increases in female labor force participation since the 1970's. The recent increase in rural-urban migration flows, as a consequence of the violence conditions, is now contributing to a larger urban labor supply. This increasing labor supply and a decreasing labor demand, brought by the crisis of the 1990's, has produced an increasing unemployment rate and a deterioration in the quality of employment, as it is evident from the increased underemployment and informal employment rates (Farné, 2001).

Several studies indicate that migrants in urban areas can be characterized by higher labor force participation rates, lower unemployment rates and a higher participation in the informal sector than urban natives (Castañeda, 1993; Leibovich, 1996). Those studies also indicate that although recent migrants tend to have lower earnings than natives, the earnings differentials tend to vanish as times goes by.

¹ It is not possible to estimate rural urban migration using the last two population censuses – 1985 and 1993 – since they did not ask for rural/urban area of residence at birth (origin) neither for previous area of residence.

This paper seeks to address two main questions. First, it looks for changes in the migrant profile from 1984 to 1992 and 2000. Year 1984 is the first year with available information on the informal sector and it is part of an upturn economic cycle. Year 1992 is also part of an economic boom but it represents a period before the escalation of forced displacement. Year 2000, on the contrary, is not only part of a period of economic crisis but it is a period of intensification and expansion of the political conflict. Second, the paper identifies, for year 2000, if migration status is one of the key determinants of working in the informal sector. Understanding the determinants of working in the informal sector might shed some lights on possible policy instruments to facilitate the insertion of recent migrants in the labor force.

Results suggest that migration profile has changed, especially from 1992 to 2000, towards a higher participation of rural flows and higher participation of men probably as a consequence of intensification of armed conflict. Results also indicate that migration condition has a large impact on the probability of being employed in the informal sector – under any definition used- or being unemployed, especially for women.

The paper is organized as follows. Section 2 summarizes the empirical literature on internal migration flows in Colombia and the behavior of the labor market during the last decade. Section 3 discusses the conceptualization of the informal sector and presents the model used here for the decision to work in the informal sector. Section 4 describes the data used. Sections 5 and 6 present the empirical results on the migrant profile and the occupational sector model respectively, and Section 7 concludes.

1. Background

This section reviews the empirical literature on migration and the informal sector employment in Colombia. It begins with a summary description of the trends in migration flows to urban areas in Colombia, to present then a summary of the findings for Colombia on the labor market conditions in urban areas during the last decades.

1.1. Internal migration flows in Colombia

During the last century, Colombia, as many others Latin American countries, experienced the demographic transition: the population growth rate first increased from 1.8% at the beginning of the century to 3% in the 1960's, and then it returned to 1.8% at the end of the 1990's. Parallel to the demographic transition, the country had an important process of urbanization: people living in urban areas increased from 31% in 1938 to almost 69% in 1993. However, this process occurred mainly during the 1950's and 1960's: the proportion of urban population increased from 39% in 1951 to 52% in 1964. The high and increasing rate of growth of the urban population observed in this period can be explained mainly by the high rural-urban migration rates, and an accelerated industrialization process (Flórez, 2000). The decline in the urbanization rate during the last decades is due to a different pace in the demographic (fertility) transition between urban and rural areas, to a decline in the rural-urban migration flows and to new urban-urban population movements. Several studies agree to indicate that rural migration flows have been declining since the 1970's, that urban-urban migration has been increasing and that new spatial movements not associated with a definite change of site of residence are taking place - such as circular migration (Flórez, 2000; Gouëset, 1998; Dureau et al, 1993).

During the 1940's and 1950's, the violence conditions and the rural fight for land property mainly explained rural-urban migration flows. It is estimated that from 1938 to 1951, approximately one million people migrated from rural to urban areas because of the violence conditions prevalent during that period. During the second half of the last century, however, rural-urban migration flows have been declining. Thus, in 1950's, rural migration explained 43% of urban population growth, 37% in the 1960's, 27% in the 1970's, 23% in the 1980's, and less than 28% in the 1990's (Castaño, 1998 cited in Ibañez and Velez, 2003).

Although there is a lack of information on internal migration in Colombia during the last decades, several case studies indicates that the expansion of the armed conflict, especially during the second half of the 1990's, seem to have given raise to new rural-urban displacement flows in particular to the main cities. It is estimated that during the last fifteen years, around two million people have been forcibly displaced from their rural communities as a result of armed conflict in the country (Women's Commission for Refugee Women and Children, 2002). Some studies

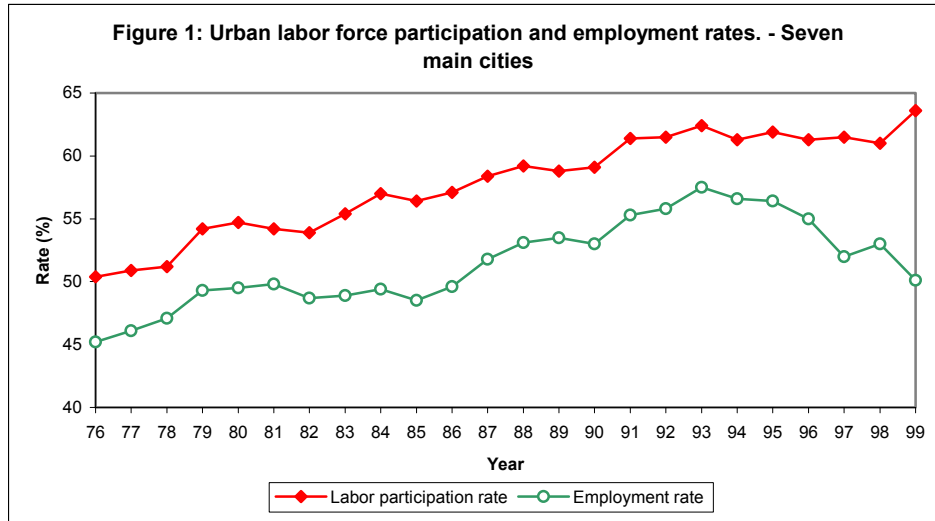
suggest that violence conditions have produced a change in the profile of recent migrant households since 1994, going back to a higher participation of rural origin, low educational level, and high illiterate rate, characteristics that can be associated to forced displacement and not to voluntary migration (Ibañez and Velez, 2003).

1.2. The urban labor market

The urban labor force participation rate², an indicator of the labor supply, has consistently increased during the last three decades: it went up from 49.4% in 1976 to 63.6% in 1999 in the seven main cities³ (Figure 1). Rural-urban and urban-urban population re-distribution, as well as changes in the population age distribution – towards an older population as a consequence of the demographic transition -, increases in the level of education of the population, increases in the proportion of women entering the labor force – associated to a decline in fertility levels-, are factors, among others, that have positively affected the urban labor supply during the last decades. The accelerated increase of the urban labor supply in the 80's can be associated to the high rural-urban migration flows that characterized the urbanization process since the 1950's (Fedesarrollo, 1999). The increase in the level of education of the population and the decline in fertility rates explain great part of the increases in female labor force participation since the 1970's (Ribero and García, 1996; Flórez, 2000). The recent increase in rural-urban migration flows, as a consequence of the violence conditions, is now contributing to a larger labor supply.

² The labor force participation rate is the ratio of the economically active population (employed or looking for a job) to the population in working ages (12+ years of age).

³ The seven main cities are: Bogota, Medellin, Cali, Barranquilla, Bucaramanga, Manizales and Pasto.



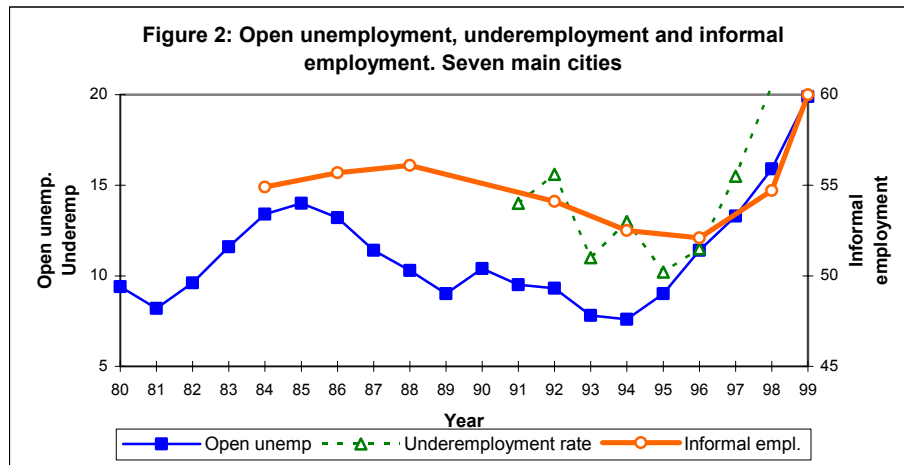
The employment rate⁴, an indicator of the labor demand behavior, shows the effect of the economic crisis of the early 1980's and the economic crisis of the 1990's (Figure 1), which were common to most of Latin American countries. From 1980 to 1985, the employment rate for the main seven cities did not increase; it remained almost constant around 48%. Afterwards, recuperation of the economy led to a positive growth in the labor demand: it started increasing in 1985, reaching a high level of 57.5% in 1993. However, the crisis of the 1990's brought a new and stronger contraction of labor demand: the employment rate declined from 57.5% in 1993 to 50.1% in 1999, the lowest rate observed in the decade of the 1990's.

Unemployment, as a result of a lack of equilibrium between labor supply and demand, may have its origin in an accelerated growth of labor supply (higher increases in the labor force participation) or/and in a deceleration of economic production, or it may reflect structural problems as well. Figure 2 shows the urban unemployment rate⁵ in the main cities. The rapid increase in the unemployment rate during 1981-85 and 1994-99 could be mainly associated to demand factors (a constant and a decline, respectively, in the absorptive capacity of economic activities), whereas the unemployment present in other periods, such as the early 1990's, is a problem associated mainly to increases in the labor supply. A comparison of the observed

⁴ The employment rate is the ratio of the employed population to the population in working ages (12+ years of age).

⁵ Unemployment is conformed by those who are not working and are looking for a job.

changes in the labor supply (economically active population) vs. the observed changes in the employed population confirms this hypothesis (Fedesarrollo, 1999).



The decline in labor demand during the 1990's economic crisis has been accompanied by deterioration in the quality of employment (Farné, 2001), as it is evident from the increased underemployment⁶ and informal employment⁷ rates (Figure 2), the higher proportion of workers who wants to change employment, and the higher proportion of workers in not-desired partial employment.

2. Analytical framework

This section discusses different definitions of informal employment existing in the literature and presents the selected model to analyze the individual choice of participation in the informal labor market.

2.1. Conceptualization of the urban informal sector

Keith Hart developed the concept of informal economy in the early 1970s as a result of a research project for the International Labor Office (ILO) on urban labor markets in Africa (Portes, 1994; Tokman, 1992). However, after almost thirty years of research on informal

⁶ Underemployment is conformed by those who want and are available to work more time than they actually do.

⁷ Informal employment is defined by DANE as: "self employed workers different from independent professionals, family workers, domestic servants, and paid workers in small firms (up to 10 workers)". Under this definition, informality is seen as a survival mechanism in response to insufficient modern job creation.

activities, there is still no consensus on its definition. The term informal economy⁸ covers a set of heterogeneous activities, from unpaid labor to any number of unregulated salaried jobs. This broad range of activities has made it difficult for analysts of the informal sector to agree on its definition. The differences in conceptualization of the informal sector rely largely on four key elements: state regulation, size of the firm, dynamism, and integration. The first two elements affect the size of the urban informal sector, whereas the last two are related to its function. Three main approaches can actually be identified: dualistic, excessive regulated and structural articulation (Table 1). State regulation is a common feature in all three approaches, suggesting an implicit consensus that the informal sector refers to activities taking place outside established institutional rules. However, the reasons for the existence of unregulated activities differ – because of survival strategies, functional requirements, inadequate regulatory system, or inefficiencies of the labor market regulations -, and then their function in the labor market and the implications in terms of labor policies also differ. Table 1 summarizes the view of each approach in relation to each of the key elements.

First, in the dualistic approach the informal sector is considered as the disadvantaged sector of a dualistic or segmented labor market not linked to formal activities. In fact, it views the informal economy as the collection of marginal enterprises characterized by: low entry barriers in terms of skills, capital, and organization; family ownership enterprises; small scale of operation; labor intensive production with outdated technology; unregulated and competitive markets; low levels of productivity; and low levels of capacity for accumulation (Portes, 1994; Tokman, 1992).

Table 1: Conceptualization of the urban informal sector by approach

Element	Approach		
	<i>Dualistic</i>	<i>Excessive Regulated</i>	<i>Structural Articulation</i>
State regulation	Unregulated	Unregulated	Unregulated
Size of the firm	Small	Any	Any
Integration	None	None	High
Dynamism	Low	Any	High

Source: Flórez, 2001.

⁸ Informal economy and informal sector are interchangeable used here.

Second, the excessive regulated economy approach sees informality as the response to the rigidities and limitations of the mercantilist state (De Soto, 1989 cited in Portes and Schauffler, 1993).

Third, the structural articulation approach (Castells and Portes, 1989) characterizes the informal economy as income-earning activities unregulated by the state but closely interlinked with activities in the formal sector. The basic distinction between formal and informal activities relies entirely on the character of production and distribution processes, namely degree of compliance with the terms of the laws⁹. Given the heterogeneity of the informal sector, at least two sub sectors can be identified under this approach with different goals and roles in labor market: informal activities with direct subsistence goals (subsistence informal sector); and dynamic activities with decreasing labor costs and capital accumulation goals (salaried workers of large and small firms, and owners of small firms). The former is a disadvantaged sector with a counter-cyclical behavior, and the latter one is integrated to the formal sector showing a pro-cyclical behavior (Flórez, 2002).

According to each approach, the operational definitions based on household survey and the size of informal employment in 2000 is presented in Table 2¹⁰. Clearly, the size of the informal sector is large, under any definition used: more than half of employed population is in the informal sector. However, when the dualistic approach is used, the size increases to 61%, almost 10 points above the size under the structural articulation approach.

⁹ This view clearly differentiates criminal activities from informal activities. The first ones specialize in the production of goods and services socially defined as illicit (like drugs), whereas informal activities refer to unregulated (illicit) production and distribution of otherwise licit goods and services (Castells and Portes, 1989).

¹⁰ The excessive regulated approach is not included given the limitations of the available data to operationalize the concept behind this approach.

Table 2: Urban informal sector (UIS) definition and size by approach

Approach	Empirical definition	Size in 2000
Dualistic	Self-employed – minus professionals and technicians, unremunerated family workers, domestic servants, owners and salaried workers in small firms (with 10 or less employees).	61.4%
Structural articulation	Owners and workers who do not have health insurance and are therefore not protected (includes all unremunerated family workers and domestic servants).	51.7%
	Dynamic Sub sector (not protected owners and salaried workers)	18,8%
	Subsistence Sub sector (not protected self-employed, domestic service, and unremunerated family workers)	32,9%

Source: Flórez, 2002.

Given the heterogeneity of the informal labor market and the large differences in size from the application of each definition of informality, it is hard to keep a single definition. Since the two definitions share some workers, Table 3 provides statistics for the combinations between them, showing how they overlap with each other. Thus, 95% of informal workers in the subsistence sub sector are also informal under the dualistic approach. However, almost one third of formal workers under the structural articulation approach are informal under the dualistic approach. Those are mainly protected owners and workers in small firms. Similarly, one quarter of informal workers under the dualistic approach are formal under the structural articulation approach; those are again protected owners and workers in small firms. Definition under the dualistic approach may capture better those workers who are at an economic disadvantage. However, definition under the structural articulation approach may capture better those workers who are more socially vulnerable (unprotected). Therefore, both definitions – dualistic and structural articulation approach would be used here.

2.2. Model of participation in the informal sector

Participation in the labor market has been widely studied in Colombia (Riberio and Meza, 1996) and will not be the focus of the analysis here. The interest is on the occupational sector choice once the decision to participate in the labor market has been taken. The alternatives for

occupational sector considered here are: formal sector, informal sector¹¹ and unemployment. Therefore, a multinomial logit model is used (Greene, 1993).

Consider the unordered outcomes j : (1) formal sector, (2) informal sector, and (3) unemployment, recorded in the dependent variable “ Y ” (occupational sector), and the explanatory variables “ X ”. The multinomial logit model would estimate a set of coefficients $\beta^{(j)}$, corresponding to each outcome category j :

$$\Pr(Y = j) = \frac{\exp(\beta'_j X_i)}{\sum_{k=1}^3 \exp(\beta'_k X_i)}$$

To identify the model, the coefficient for one category j , $\beta^{(j)}$, must be set to zero, and the remaining coefficients measure the change relative to that outcome (reference group or base category). The exponentiated value of a coefficient, $\exp(\beta_i^{(j)})$, is the relative risk ratio for a one unit change in the corresponding variable “ i ”, it being understood that risk is measured as the risk of the category “ j ” relative to the base category. Coefficients are estimated by maximum likelihood procedures.

3. The data

This paper uses data from the National Household Survey Program (ENH), carried out by the National Department of Statistics (DANE) since 1976, which is designed to gather quarterly information on the labor market mainly in urban areas. Each survey includes information on place of birth and, some of them, on previous place of residence, and information on number of years living in the current municipality of residence. Although the survey captures rural-urban migration across municipalities, it does not capture rural-urban migration within the municipality of current residence. This means that “natives” includes not only natives from the urban area of the municipality – that is the city where the survey was carried out - but it also includes people born in the rural area of the municipality who migrated to the city and were living there at the moment of the survey. This may underestimate the real level of migration flows, since rural

¹¹ Under the structural articulation approach, both sub sectors of the informal sector are included and then four outcomes are considered: formal, informal dynamic, informal subsistence, and unemployment.

urban migration within municipalities (short distance migration) characterize not only forced displacement movements but in general migration flows in Colombia (Martinez y Rincón, 1997; DANE, 1998). Just to dimension the possible effect of this data limitation, an study done in Yopal (a municipality of Casanare state) in 1997 indicated that only 30% of the people living in the city were really native of the city; the other 70% considered as “native” were born in the rural area of the municipality and moved to live in the city (Dureau and Flórez, 2000).

Every two years since 1984, the June survey has included a special module devoted to the informal sector, including questions on size of the firm, access to social security, place of work, etc. Years 1984, 1992 and 2000 are used here.

The survey is statistically representative of the main 10 cities and its metropolitan areas¹². Each survey interviews around 20,000 households. This sample size permits estimates of the population by migration condition and labor market characteristics.

4. The migrant profile

This section tries to identify changes in the migrant profile from 1984 to 1992 and 2000, in relation to socio-demographic and labor characteristics. Tables 4 and 5 present the results for both approaches used to define informal labor market.

More than half of the working age population or the economically active population is migrant¹³, but the proportion of migrants persistently declines through time (from 42.8% to 49.1%; and from 36% to 47.8%) (Table 4). This is mainly consequence of the large migration flows of the 1950's and 1960's when migration contributed to almost 40% of population growth rate. However, contrary to it was expected, the annual gross immigration rate steadily declines from 1984 to 2000: the proportion of recent immigrants (<1 year) declines from 3% to 2.4% among working age population and from 3.2% to 2.6% among economically active population. Given the increasing flows of forced displacement to urban areas, especially since 1994, suggested in several studies on violence in Colombia, it was expected that recent migration rates would have

¹² The ten main cities are: Bogotá, Medellín, Cali, Barranquilla, Cartagena, Cúcuta, Bucaramanga, Ibagué, Pereira and Manizales. According to the 1993 Population census, about 66% of the urban population -- living in cities with 50.000 or more inhabitants-- was located in those ten cities and their metropolitan areas.

¹³ A person is migrant if he/she was born in a municipality different to the one where he/she currently lives in.

increased during the last years. This apparent contradiction could be explained by several facts. First, it could be because migration in DANE household surveys does not capture rural urban migration within municipalities. It captures only migration across municipalities, including rural and urban areas. Second, it could be that the sample used in DANE household surveys do not include geographic areas in the city where displaced people is concentrated. Displaced people generally arrive to poor and marginal areas which are of recent urban development (Ibañez and Velez, 2003b). Third, it could be that forced displacement is overestimated in case studies and it does not have had a large impact on urban population as a whole. However, evidence suggests that this third explanation is the less possible one.

Among migrants, around 20% - in average- arrived during the last four years and almost 5% during the last year. This numbers are large and reflect the importance of migration flows to urban areas. However, it seems that recent migration has been declining especially from 1992 to 2000: their proportion among total migrants declined from 19.4% in 1992 to 17.4% in 2000 (Table 4). This result, contrary to expected, could be again consequence of the not measured rural urban movements within municipality or excluded geographic areas in the urban sample survey.

As expected, rural origin of migration substantially changes during the period (Table 5). From 1984 to 1992, rural site declines as origin of migration to urban cities, in particular among recent migrants: in 1984, 20% of recent migrants (< 1 year) had rural origin, in 1992 that percentage declined to 13%, and it increased again to 19.5% in 2000 (Table 5). In 2000, rural origin is also higher among recent migrants (<1 year) than among migrants with 1-2 years of residence in the place of the survey. Those facts could be associated to the increasing rural forced displacement as a consequence of the intensification of violence conditions.

Available literature on migration in Colombia suggests that migration flows to urban areas have been characterized by a higher proportion of women arriving at youth ages (Castañeda, 1993). Although this pattern is also evident here, it seems that the proportion of women in migration flows has been declining. Thus, in 1984 and 1992, almost 40% of recent migrants were men whereas that proportion was 48% among native working age population. In 2000, the proportion of men among recent migrants increased to 44% whereas it remained at 48% among natives

(Table 5). This increase in the male/female ratio among recent migrants could be related to the new migration flows associated to the intensification of the armed conflict. Previous studies indicate that voluntary rural migration to the city observed in the 1960's and 1970's had a large proportion of women, who migrated alone looking for better economic opportunities in the city. Forced displacement is composed by complete families, including men and children. Available studies suggest women are 49% of the displaced population (RSS, 2002).

Migrants have lower educational levels than natives and the differentials are highest for recent migrants (<1 year) who have, in average, 1.4 less years of education than natives (Table 5). From 1984 to 2000, educational levels have increased among migrants as the level of education has increased in the country as a whole. However, educational differentials by migration condition have slightly declined, especially between 1984 and 1992: in 1984, natives had 1.25 times the years of education of recent migrants; in 1992 and 2000, the relation been 1.18. This suggests that educational improvements observed among migrants from 1984 to 1992 bring to a halt in 2000, may be as a consequence of higher importance of rural origin among recent migration flows.

Labor force participation rates have steadily increased from 1984 to 2000, independently of migration condition. However, migrants always show higher labor force participation rates than natives, all along the period. Labor force participation is even higher among recent migrants than among old migrants who tend to resemble natives.

Underemployment and unemployment rates as well as informality of the labor market evidence the economic cycles: they decrease from 1984 to 1992 during the economic upturn, and increase again from 1992 to 2000 during the economic crisis, in all population groups independently of migration condition. However, although, in both 1984 and 1992, underemployment rates are similar across migration condition, in 2000 they are highest among recent migrants. Along the period, recent migrants show higher unemployment rates and higher participation in the informal sector (independently of the informality definition used) than natives (Table 5). These differentials have increased from 1992 to 2000 suggesting that the economic crisis have affected most recent migrants. However, data also indicate that, in all analyzed years, those labor

differentials tend to vanish as time of residence increases suggesting a process of assimilation among migrants, and confirming results from previous studies (Leibovich, 1996).

In summary, results suggest that migration profile has changed, especially from 1992 to 2000. First, rural migration has been increasing probably as a consequence of intensification of armed conflict. Second, sex selectivity may have declined towards a higher participation of men in the new flows which could also be related to the violence conditions (migration of complete families). Third, although migrants tend to assimilate to natives as time of residence increases, the insertion of migrants in the labor market has deteriorated during the last years. It seems that the economic crisis of last years has affected most recent migrants. Recent migrants have higher participation in the labor market but they have less human capital to find high quality jobs than natives or than old migrants. Recent migrants, especially those from rural areas, have fewer skills to work in the city labor market. Therefore, unemployment, underemployment and low quality jobs (subsistence informal activities) are higher among recent migrants than among old migrants or natives.

5. The determinants of participation in the urban informal sector

In this section, the individual choice of participation in the informal labor market is modeled through multinomial logit models. Table 6 and 7 present the estimated results, using the two alternative approaches to define the informal sector specified in section 3.1 above: structural articulation approach - informal subsistence and informal dynamic sub sectors- (Table 6), and dualistic approach (Table 7). In both cases, in order to identify the model, the coefficient for the formal sector, $\beta^{(1)}$, is set to zero, and the remaining coefficients measure the change relative to the formal sector group (reference group or base category). Three sets of explanatory variables “X” are considered in the estimated occupational sector choice model: socioeconomic individual characteristics, household socioeconomic status, and conditions of the local labor market. Individual’s characteristics included are: age, sex, years of education, migration condition (7 categories, being recent migrant the reference category) and rural-urban origin (birthplace). Socioeconomic status (SES) of the household is included as a categorical variable, with 6 categories (low-low SES being the reference category). The unemployment rate of the city where the individual lives is included as indicator of the local labor market conditions. The models are

estimated for the whole sample and separately for men and women. Test of differences in the male and female coefficients in the separate gender models have been performed implying different behavior by gender in the labor market as other studies suggest (Ribero, 2003).

In order to facilitate the interpretation of the estimated models, marginal effects were calculated at the means of the independent variables. Tables 8 and 9 present the results under the two approaches used for informality. All the included variables were statistically significant and showed the expected sign. The results under any definition for informality indicate that, for both men and women, age has a negative effect on unemployment and a positive effect on informal subsistence. Thus, older individuals tend to be unemployed less than younger individuals, but they tend to participate more in informal subsistence sector. That is, younger individuals have higher probability of being unemployed but older individuals have higher probability of being in the informal sub sector. This result coincides with the evidence from other studies in relation to the highest unemployment rates among youth. It also supports López (1996) results in relation to the “employment life cycle hypothesis”. According to López: “Since modern enterprises hire preferably young workers and discriminate against older individuals, they, using the labor savings from previous wage jobs, tend to establish small business”, suggesting long run informal-formal-informal movements.

Years of education decrease the probability of being in any of the informal sub sectors or being unemployed. However, the reduction in the probability of being in the informal sector or being unemployed of an additional year of schooling is higher for women than for men. This differential effect by gender is particularly important in the subsistence informal sub sector (Table 8) and the dualistic informal sector (Table 9). These results may be related to the expected role of the informal sub sectors under the structural articulation approach: it is expected that the dynamic sub sector behaves similarly to the formal sector and the subsistence sub sector similarly to the dualistic approach - a disadvantaged sector with low technology and low capital accumulation (Flórez, 2002).

The effect of migration condition, the variable of interest here, on occupational choice is even more difficult to interpret than previous variables since we have categories in both the dependent

and the independent variables. Tables 8 and 9 indicate that number of years of residence in the city decreases the probability of being employed in the informal sector. To understand the effect of migration on the occupational choice, Table 10 presents the predicted probabilities of occupational sector by migration condition based on the estimated coefficients in the model. Using the estimated coefficients, predicted probabilities are calculated assuming that individuals have the same migration condition but holding their other characteristics constant. The difference in the sets of calculated probabilities is the difference due to migration condition, holding other characteristics constant.

Results indicate that migration condition has a large impact on the probability of being employed in the informal sector – any definition- or being unemployed, especially for women. The impact is largest for the subsistence informal sub sector – under the structural articulation approach. Thus, the probability of being employed in the subsistence informal sub sector is 35.5% among recent migrant women but it is only 27% among native women. For men, those probabilities are lower and are more similar: 25.7% and 25.4% respectively. Under the dualistic approach for informality, being recent migrant also has a large impact on the probability of being in the informal sector but there are not large differences by gender. Thus, the probability of being employed in the dualistic informal sector is 52.6% among recent migrant women but it is 47.6% among native women (Table 10). For men, those probabilities are 52.1% and 51.3%, respectively.

Similarly, migration condition has a large impact on the probability of being unemployed, for both men and women. The probability of being unemployed is 26.6% among recent migrant women but it is only 23.2% among native women. For men, the probabilities are 20% among recent migrants and 15% among natives. Migration condition affects the probability of a successful insertion in the labor market.

Results also indicate that it is among female migrants that the process of assimilation is clearer. Thus, for women the probability of being in the informal sector decreases as time of residence increases (from 35.7% to 28.5% in the subsistence sub sector; and from 52.6% to 47.6% under the dualistic definition), whereas the probability of being employed in the formal sector increases

with time of residence in the city. The probability of being unemployed is also higher among recent migrants, and it declines as time of residence increases, for both men and women. These results support a strong assimilation process in the urban labor market for female migrants, but a weak process for male migrants.

Rural origin did not show a statistically significant effect across models neither the effect was always in the same direction¹⁴. This result suggests that origin does not really matter in the insertion in the labor market; what really matters are the other included variables such as years of education and migration condition (in particular, years of residence in the city).

The effect of household socioeconomic status indicates that the higher the stratum the lower the probability of being unemployed or employed in the informal subsistence sector, especially for women. Thus, socioeconomic status per se is highly related to being in the informal labor market.

The variable on local labor market conditions indicate a negative effect on the probability of being informal, suggesting that the higher the unemployment rate in the city where the person lives, less likely the person is employed in the informal sector. This effect, contrary to expected, may be indicating a limited capacity of the informal sector to absorb workers, which is especially true when the economy is in recession. It could be also explained by the low variability of unemployment rate across cities: it ranges from 18% in Barranquilla to 22% in Manizales. On the contrary, unemployment rate in the city positively affect the probability of being unemployed.

6. Summary and conclusions

Using data from the National Household Survey carried out by DANE in urban sites in 1984, 1992 and 2000, this paper analyzed the profile of the migrant to the main ten cities during the last twenty years and the effect of migration condition on the choice of occupational sector.

¹⁴ The estimated correlation matrix did not show high correlations among variables which could explain this unexpected result. The highest correlation in the matrix was 0.42 between years of education and employed in the dualistic informal sector. This number can be considered low. The correlation between rural origin and migration condition was only 0.20.

More than half of the working age population or the economically active population in the ten main cities is migrant, consequence of the large migration flows of the 1950's and 1960's. The intensification and expansion of the armed conflict, especially since 1994, led us to expect an increase in migration rates, especially from rural to urban areas. However, contrary to expected, results show an annual gross immigration rate steadily declining from 1984 to 2000. This unexpected result could be consequence of data limitations: DANE household surveys do not capture rural urban migration within municipalities but captures only migration across municipalities. Available studies suggest the importance of short distance migration in internal migration flows in Colombia, including forced displacement. It also could be consequence of exclusion of marginal areas in the DANE urban sample survey where displaced people tend to concentrate.

Results indicate that migrant profile to the cities has changed during the last years, especially from 1992 to 2000. First, rural migration has been increasing probably as a consequence of intensification of armed conflict. Second, sex selectivity may have declined towards a higher participation of men in the new flows which could also be related to the violence conditions. Third, although migrants tend to assimilate to natives as time of residence increases, the insertion of migrants in the labor market has deteriorated during the last years. It seems that the economic crisis of last years has affected most recent migrants. Recent migrants have higher participation in the labor market but they have less human capital to find high quality jobs than natives or than old migrants. Therefore, unemployment, underemployment and low quality jobs (informal activities) are higher among recent migrants than among old migrants or natives.

The size of the informal sector in Colombia depends on which definition is used. It ranges from 51.7% under the structural articulation approach – workers in unregulated activities- to 61.4% under the dualistic approach – a disadvantaged and small firm sector. Given the heterogeneity of the informal labor market and the large differences in size from the application of each definition of informality, both definitions are used in the analyses.

The choice of occupational sector - once the decision to participate in the labor market has been taken- is analyzed using a multinomial logit model by gender. The alternatives for occupational sector are: formal sector, informal sector and unemployment.

Results indicate that migration condition has a large impact on the probability of being employed in the informal sector – under any definition- or being unemployed, especially for women. The impact is largest for the subsistence informal sub sector – under the structural articulation approach. Under the dualistic approach for informality, being recent migrant also has a large impact on the probability of being in the informal sector but there are not large differences by gender.

Results also support a strong assimilation process in the urban labor market for female migrants, but a weak process for male migrants. It seems that rural origin does not really matter in the insertion in the labor market; what really matters are other variables such as years of education and migration condition (in particular, years of residence in the city).

The analyses carried out here provide some lights on three dimensions for the relation between migration and informal labor markets: first, data quality; second, conceptualization of the informal sector; and third, evidence to facilitate a successful insertion of migrants in the labor market.

Data on migration is scarce and the available one has important limitations to understand short distance migration flows, which characterize spatial movements in Colombia. Household survey and population censuses should make an effort to capture rural urban migration within municipalities and not only migration across municipalities. Additional efforts to gather information on migration should be done, including forced displacement, especially under the current intensification of armed conflict.

Given the heterogeneity of the informal sector, it is not possible to talk about “the” informal sector. Informal workers, under any definition, are heterogeneous in occupation, earnings, sector of activity, etc. Although the various definitions of the informal sector overlap each other in

various ways, they reflect different group of workers, vulnerable in different dimensions, and playing different roles in the labor market.

Migration condition is a major determinant of low quality employment (informal sector or unemployment). Therefore, programs to facilitate migrant's integration to urban life would be a key instrument to facilitate their successful insertion in the labor market.

Table 3
Interactions between definitions of Informality- 2000. (%)

Structural articulation approach	Dualistic approach		
	Formal	Informal	Total
Formal	67.5	32.5	100.0
	84.4	25.5	48.2
Dynamic Informal	23.3	76.7	100.0
	11.4	23.5	18.8
Subsistence Informal	4.9	95.1	100.0
	4.2	51.0	33.0
Total	38.5	61.5	100.0
	100.0	100.0	100.0

Table 4
Distribution of urban population by Migration Condition.
1984, 1992 and 2000

A. Working age population

Migration condition	1984	1992	2000	1984	1992	2000
<1 year	3.0	2.8	2.4	5.3	5.1	4.7
1 - 2 years	4.4	4.0	3.3	7.7	7.1	6.5
3 - 4 years	4.4	4.0	3.2	7.6	7.2	6.2
5 + years	45.4	44.5	42.0	79.4	80.6	82.6
Subtotal migrants	57.2	55.3	50.9	100.0	100.0	100.0
Native	42.8	44.7	49.1			
Total	100.0	100.0	100.0			

B. Economically active population

Migration condition	1984	1992	2000	1984	1992	2000
<1 year	3.2	3.1	2.6	5.0	5.3	5.0
1 - 2 years	4.8	4.2	3.4	7.5	7.2	6.5
3 - 4 years	4.7	4.1	3.3	7.4	7.1	6.4
5 + years	51.2	46.9	42.9	80.1	80.4	82.1
Subtotal migrants	63.9	58.3	52.2	100.0	100.0	100.0
Native	36.1	41.7	47.8			
Total	100.0	100.0	100.0			

Table 5: Demographic and labor characteristics of working age urban population by migration condition. 1984, 1992 and 2000

1984

Migration condition	% Rural origin	% Male	Mean Age	% Illiterate	Mean Years of Education	Labor force participat.	Unemploy rate	Underempl rate	% Employed Dualistic Informal sector	% Employed Dynamic Informal sector	% Employed Subsistence Informal sector
<1 year	20.2	39.7	27.9	6.1	6.1	60.3	19.0	16.4	70.7	25.1	47.3
1 - 2 years	19.6	41.9	28.1	4.6	6.6	58.3	13.2	17.9	65.1	23.3	39.3
3 - 4 years	21.3	42.8	28.9	4.1	6.7	58.2	13.4	13.9	60.0	22.4	33.4
5 + years	22.5	45.0	38.4	5.4	6.5	58.1	10.4	15.4	56.0	18.7	33.0
Native		48.2	25.9	2.3	7.6	47.7	18.2	16.8	52.2	24.1	26.2
Total	22.1	46.0	31.9	4.0	7.0	53.7	13.9	16.0	55.7	21.3	31.3

1992

Migration condition	% Rural origin	% Male	Mean Age	% Illiterate	Mean Years of Education	Labor force participat.	Unemploy rate	Underempl rate	% Employed Dualistic Informal sector	% Employed Dynamic Informal sector	% Employed Subsistence Informal sector
<1 year	13.0	39.9	28.7	3.9	7.1	67.1	14.0	14.9	66.8	26.5	39.5
1 - 2 years	12.1	42.7	29.4	3.1	7.7	65.4	11.0	15.2	60.8	27.2	29.8
3 - 4 years	12.3	44.9	30.2	3.1	7.7	64.0	10.0	15.9	55.8	25.3	27.6
5 + years	18.3	44.2	40.6	4.7	7.2	64.6	8.6	15.5	56.4	22.2	28.8
Native		48.0	27.8	1.5	8.5	57.5	13.9	17.7	52.5	26.5	22.0
Total	17.2	45.6	33.7	3.1	7.8	61.5	11.1	16.4	55.3	24.4	26.4

2000

Migration condition	% Rural origin	% Male	Mean Age	% Illiterate	Mean Years of Education	Labor force participat.	Unemploy rate	Underempl rate	% Employed Dualistic Informal sector	% Employed Dynamic Informal sector	% Employed Subsistence Informal sector
<1 year	19.5	43.9	30.7	4.0	7.9	70.1	26.8	39.3	75.8	22.7	44.4
1 - 2 years	15.0	45.0	31.0	3.1	8.6	64.7	20.0	32.8	65.4	21.7	36.6
3 - 4 years	20.0	42.0	30.6	2.1	8.5	67.7	18.3	36.2	68.1	19.8	36.8
5 + years	23.1	44.0	43.6	4.5	7.8	64.8	17.0	32.8	64.3	16.9	35.4
Native		47.8	29.6	1.6	9.3	61.7	23.4	35.3	57.0	20.2	29.5
Total	22.2	45.9	35.6	2.9	8.6	63.5	20.5	34.2	61.4	18.8	33.0

Table 6: Multinomial logistic model of occupational sector by sex. 2000
Structural articulation approach for informal labor market

Occupational sector	TOTAL		MALE		FEMALE	
	Coefficient	Std. error	Coefficient	Std. error	Coefficient	Std. error
<i>Dynamic informal sector</i>						
Age	-0.0321 ***	0.0014	-0.0317 ***	0.0014	-0.0336 ***	0.0025
Sex (Female)	-0.4047 ***	0.0325				
Education in years	-0.1728 ***	0.0044	-0.1872 ***	0.0057	-0.1466 ***	0.0073
Migrant 1-2 years	-0.2136 *	0.1189	-0.2495 *	0.1492	-0.1555 ***	0.2003
Migrant 3-4 years	-0.3246 ***	0.1188	-0.4188 ***	0.1521	-0.1414	0.1922
Migrant 5+ years	-0.4980 ***	0.0942	-0.5118 ***	0.1195	-0.4457 ***	0.1558
Native	-0.3673 ***	0.0937	-0.3493 ***	0.1190	-0.3580 **	0.1545
Rural origin	0.0286	0.0507	0.1032 *	0.0637	-0.1218	0.0859
Middle-low SE stratum	-0.0643	0.0684	-0.0094	0.0836	-0.1515	0.1201
Middle-middle SE stratum	-0.2536 ***	0.0661	-0.1830 **	0.0811	-0.3560 ***	0.1155
Middle SE stratum	-0.4833 ***	0.0787	-0.4003 ***	0.0994	-0.5979 ***	0.1317
Middle-high SE stratum	-0.5024 ***	0.1057	-0.1640	0.1382	-0.8785 ***	0.1689
High SE stratum	-1.1183 ***	0.1648	-0.5073 *	0.2091	-1.8258 ***	0.2777
City Unemployment rate	-0.1191 ***	0.0121	-0.1079 ***	0.0153	-0.1403 ***	0.0198
Constant	5.4939 ***	0.2774	4.7778 ***	0.3467	5.2125 ***	0.4532
<i>Subsistence informal sector</i>						
Age	-0.0002	0.0011	0.0019	0.0014	-0.0026	0.0018
Sex (Female)	0.3482 ***	0.0270				
Education in years	-0.2176 ***	0.0038	-0.1885 ***	0.0051	-0.2497 ***	0.0057
Migrant 1-2 years	-0.1364	0.1052	-0.1083	0.1450	-0.1178	0.1561
Migrant 3-4 years	-0.3434 ***	0.1056	-0.2689 *	0.1471	-0.4047 ***	0.1544
Migrant 5+ years	-0.5518 ***	0.0839	-0.3983 ***	0.1168	-0.6912 ***	0.1230
Native	-0.4484 ***	0.0838	-0.1991 *	0.1167	-0.6946 ***	0.1228
Rural origin	-0.0361	0.0425	-0.0502	0.0585	-0.0382	0.0625
Middle-low SE stratum	-0.3377 ***	0.0586	-0.3608 ***	0.0749	-0.3266 ***	0.0947
Middle-middle SE stratum	-0.5997 ***	0.0564	-0.6272 ***	0.0722	-0.5927 ***	0.0908
Middle SE stratum	-0.6193 ***	0.0656	-0.6862 ***	0.0872	-0.5872 ***	0.1018
Middle-high SE stratum	-0.6730 ***	0.0861	-0.7637 ***	0.1262	-0.6966 ***	0.1242
High SE stratum	-1.0719 ***	0.1170	-1.1749 ***	0.1889	-1.1566 ***	0.1581
City Unemployment rate	-0.2344 ***	0.0103	-0.2365 ***	0.0140	-0.2281 ***	0.0154
Constant	6.9616 ***	0.2384	6.9040 ***	0.3183	8.0600 ***	0.3536
<i>Unemployed</i>						
Age	-0.0468 ***	0.0014	-0.0416 ***	0.0018	-0.0538 ***	0.0021
Sex (Female)	0.4928 ***	0.0289				
Education in years	-0.1270 ***	0.0041	-0.1238 ***	0.0058	-0.1377 ***	0.0059
Migrant 1-2 years	-0.2584 **	0.1092	-0.4808 **	0.1562	-0.0403	0.1574
Migrant 3-4 years	-0.6655 ***	0.1129	-0.7670 ***	0.1634	-0.5781 ***	0.1599
Migrant 5+ years	-0.5563 ***	0.0865	-0.5599 ***	0.1219	-0.5580 ***	0.1247
Native	-0.3283 ***	0.0856	-0.2687 **	0.1207	-0.4058 ***	0.1234
Rural origin	-0.0698	0.0498	0.0096	0.0713	-0.1519 **	0.0704
Middle-low SE stratum	-0.1910 ***	0.0643	-0.0395	0.0887	-0.3532 ***	0.0971
Middle-middle SE stratum	-0.4203 ***	0.0620	-0.2149 **	0.0860	-0.6334 ***	0.0932
Middle SE stratum	-0.6018 ***	0.0718	-0.2630 ***	0.1015	-0.9126 ***	0.1052
Middle-high SE stratum	-0.7168 ***	0.0932	-0.0774	0.1338	-1.2446 ***	0.1329
High SE stratum	-1.4604 ***	0.1498	-0.7256 ***	0.2205	-2.0380 ***	0.2054
City Unemployment rate	-0.0355 ***	0.0111	-0.0220	0.0159	-0.0494 ***	0.0157
Constant	3.1259 ***	0.2569	2.8296 ***	0.3599	5.0610 ***	0.3642
N	41,912		22,488		19,424	
LR chi2(48)	10645.0 ***		4714.4 ***		5439.3 ***	
Pseudo-R2	0.0948		0.0782		0.1063	

Formal sector is the comparison group

*** Significant at 1%; ** Significant at 5%; * Significant at 10%

Table 7: Multinomial logistic model of occupational sector by sex. 2000
Dualistic approach for informal labor market

Occupational sector	TOTAL		MALE		FEMALE	
	Coefficient	Std. error	Coefficient	Std. error	Coefficient	Std. error
Informal sector						
Age	-0.0012	0.0011	0.0007	0.0014	-0.0044 **	0.0018
Sex (Female)	0.1216 ***	0.0255				
Education in years	-0.2421 ***	0.0037	-0.2126 ***	0.0047	-0.2834 ***	0.0059
Migrant 1-2 years	-0.1992 **	0.1014	-0.1953	0.1304	-0.1537	0.1632
Migrant 3-4 years	-0.2021 **	0.1021	-0.0981	0.1333	-0.3446 **	0.1601
Migrant 5+ years	-0.3589 ***	0.0815	-0.2049 **	0.1058	-0.5426 ***	0.1288
Native	-0.3304 ***	0.0811	-0.1327	0.1055	-0.5635 ***	0.1280
Rural origin	-0.0514	0.0435	-0.1106 **	0.0568	0.0218	0.0678
Middle-low SE stratum	-0.1785 ***	0.0596	-0.1885 ***	0.0749	-0.1722 *	0.0982
Middle-middle SE stratum	-0.2463 ***	0.0572	-0.3000 ***	0.0721	-0.1811 **	0.0942
Middle SE stratum	-0.0157	0.0650	-0.1173	0.0840	0.1048	0.1040
Middle-high SE stratum	0.1667 **	0.0795	-0.0291	0.1077	0.3549 ***	0.1219
High SE stratum	0.3127 ***	0.1044	0.2359 *	0.1432	0.3367 **	0.1563
City Unemployment rate	-0.1540 ***	0.0097	-0.1358 ***	0.0128	-0.1754 ***	0.0150
Constant	6.4213 ***	0.2274	5.7772 ***	0.2930	7.6850 ***	0.3526
Unemployed						
Age	-0.0406 ***	0.0014	-0.0336 ***	0.0019	-0.0502 ***	0.0022
Sex (Female)	0.5417 ***	0.0302				
Education in years	-0.1720 ***	0.0044	-0.1558 ***	0.0061	-0.2020 ***	0.0066
Migrant 1-2 years	-0.2905 ***	0.1146	-0.4972 ***	0.1600	-0.0660	0.1727
Migrant 3-4 years	-0.5921 ***	0.1190	-0.6203 ***	0.1686	-0.6160 ***	0.1743
Migrant 5+ years	-0.4794 ***	0.0913	-0.4173 ***	0.1257	-0.5626 ***	0.1370
Native	-0.3002 ***	0.0904	-0.1852	0.1243	-0.4424 ***	0.1355
Rural origin	-0.0908 *	0.0534	-0.0746	0.0748	-0.0888 ***	0.0779
Middle-low SE stratum	-0.1392 **	0.0677	-0.0143	0.0927	-0.2691 ***	0.1032
Middle-middle SE stratum	-0.2657 ***	0.0653	-0.1226	0.0899	-0.3976 ***	0.0992
Middle SE stratum	-0.2679 ***	0.0759	-0.0095	0.1063	-0.4675 ***	0.1123
Middle-high SE stratum	-0.2823 ***	0.0979	0.1642	0.1387	-0.5913 ***	0.1414
High SE stratum	-0.7199 ***	0.1564	-0.2160	0.2275	-1.1000 ***	0.2175
City Unemployment rate	-0.0265 **	0.0116	-0.0068	0.0164	-0.0506 ***	0.0167
Constant	3.1741 ***	0.2689	2.6739 ***	0.3717	5.6115 ***	0.3893
N	41,912		22,488		19,424	
LR chi2(32)	9194.1 ***		3919.6 ***		5154.6 ***	
Pseudo-R2	0.1076		0.0879		0.1273	

Formal sector is the comparison group

*** Significant at 1%; ** Significant at 5%; * Significant at 10%

Table 8: Marginal effects after Multinomial logistic model of occupational sector by sex. 2000. Structural articulation approach for informal labor market

Occupational sector	Formal	Dynamic Informal	Subsisten Informal	Unemploy
Total				
Age	0.0051	-0.0028	0.0042	-0.0065
Sex (Female)	-0.0472	-0.0869	0.0611	0.0729
Education in years	0.0404	-0.0090	-0.0292	-0.0021
Migrant 1-2 years	0.0446	-0.0142	-0.0042	-0.0263
Migrant 3-4 years	0.1020	-0.0100	-0.0229	-0.0691
Migrant 5+ years	0.1229	-0.0236	-0.0576	-0.0417
Native	0.0888	-0.0181	-0.0555	-0.0152
Rural origin	0.0070	0.0078	-0.0046	-0.0102
Middle-low SE stratum	0.0509	0.0127	-0.0538	-0.0098
Middle-middle SE stratum	0.1038	0.0070	-0.0859	-0.0249
Middle SE stratum	0.1377	-0.0204	-0.0704	-0.0469
Middle-high SE stratum	0.1545	-0.0193	-0.0752	-0.0600
High SE stratum	0.2890	-0.0641	-0.1066	-0.1183
City Unemployment rate	0.0326	-0.0040	-0.0405	0.0120
Male				
Age	0.0046	-0.0037	0.0040	-0.0049
Education in years	0.0393	-0.0154	-0.0215	-0.0024
Migrant 1-2 years	0.0570	-0.0191	0.0111	-0.0490
Migrant 3-4 years	0.1033	-0.0300	-0.0036	-0.0697
Migrant 5+ years	0.1100	-0.0408	-0.0259	-0.0433
Native	0.0608	-0.0355	-0.0083	-0.0170
Rural origin	-0.0030	0.0188	-0.0160	0.0002
Middle-low SE stratum	0.0372	0.0186	-0.0666	0.0108
Middle-middle SE stratum	0.0871	0.0116	-0.1032	0.0046
Middle SE stratum	0.1130	-0.0221	-0.0945	0.0035
Middle-high SE stratum	0.0838	0.0097	-0.1179	0.0244
High SE stratum	0.1977	-0.0125	-0.1428	-0.0423
City Unemployment rate	0.0321	-0.0036	-0.0400	0.0116
Female				
Age	0.0060	-0.0019	0.0047	-0.0088
Education in years	0.0416	-0.0023	-0.0369	-0.0024
Migrant 1-2 years	0.0212	-0.0109	-0.0161	0.0058
Migrant 3-4 years	0.0949	0.0152	-0.0413	-0.0688
Migrant 5+ years	0.1319	-0.0059	-0.0868	-0.0392
Native	0.1159	-0.0008	-0.1016	-0.0135
Rural origin	0.0209	-0.0071	0.0079	-0.0218
Middle-low SE stratum	0.0681	0.0060	-0.0373	-0.0368
Middle-middle SE stratum	0.1243	0.0026	-0.0642	-0.0626
Middle SE stratum	0.1640	-0.0191	-0.0440	-0.1009
Middle-high SE stratum	0.2170	-0.0372	-0.0479	-0.1320
High SE stratum	0.3636	-0.0819	-0.0987	-0.1830
City Unemployment rate	0.0321	-0.0051	-0.0392	0.0123

Table 9: Marginal effects after Multinomial logistic model of occupational sector by sex. 2000. Dualistic approach for informal labor market

Occupational sector	Formal	Informal	Unemploy
Total			
Age	0.0022	0.0042	-0.0064
Sex (Female)	-0.0440	-0.0296	0.0736
Education in years	0.0419	-0.0410	-0.0009
Migrant 1-2 years	0.0440	-0.0197	-0.0242
Migrant 3-4 years	0.0588	0.0056	-0.0644
Migrant 5+ years	0.0742	-0.0369	-0.0373
Native	0.0610	-0.0490	-0.0120
Rural origin	0.0116	-0.0027	-0.0089
Middle-low SE stratum	0.0321	-0.0292	-0.0029
Middle-middle SE stratum	0.0475	-0.0319	-0.0156
Middle SE stratum	0.0150	0.0239	-0.0390
Middle-high SE stratum	-0.0117	0.0690	-0.0573
High SE stratum	-0.0219	0.1351	-0.1132
City Unemployment rate	0.0225	-0.0352	0.0127
Male			
Age	0.0014	0.0033	-0.0048
Education in years	0.0392	-0.0375	-0.0016
Migrant 1-2 years	0.0533	-0.0073	-0.0459
Migrant 3-4 years	0.0404	0.0246	-0.0650
Migrant 5+ years	0.0500	-0.0115	-0.0385
Native	0.0285	-0.0152	-0.0133
Rural origin	0.0201	-0.0202	0.0001
Middle-low SE stratum	0.0294	-0.0452	0.0159
Middle-middle SE stratum	0.0511	-0.0622	0.0111
Middle SE stratum	0.0183	-0.0281	0.0098
Middle-high SE stratum	-0.0036	-0.0235	0.0271
High SE stratum	-0.0281	0.0751	-0.0470
City Unemployment rate	0.0208	-0.0328	0.0119
Female			
Age	0.0033	0.0054	-0.0088
Education in years	0.0449	-0.0443	-0.0006
Migrant 1-2 years	0.0225	-0.0299	0.0074
Migrant 3-4 years	0.0816	-0.0163	-0.0654
Migrant 5+ years	0.0973	-0.0630	-0.0344
Native	0.0928	-0.0833	-0.0096
Rural origin	0.0023	0.0170	-0.0194
Middle-low SE stratum	0.0363	-0.0089	-0.0274
Middle-middle SE stratum	0.0438	0.0063	-0.0501
Middle SE stratum	0.0096	0.0814	-0.0909
Middle-high SE stratum	-0.0217	0.1497	-0.1280
High SE stratum	-0.0087	0.1807	-0.1720
City Unemployment rate	0.0236	-0.0371	0.0135

Table 10: Predicted probabilities of occupational sector by migration condition by sex. 2000

TOTAL

Migration condition	Informal sector - Structural articulation approach				Informal sector - Dualistic approach		
	Formal sector	Informal Dynamic S.	Informal Subsist S.	Unemployed	Formal sector	Informal sector	Unemployed
<1 year	0.2976	0.1649	0.3061	0.2313	0.2445	0.5246	0.2309
1 - 2 years	0.3335	0.1535	0.3071	0.2060	0.2821	0.5123	0.2056
3 - 4 years	0.3806	0.1618	0.2953	0.1623	0.2974	0.5397	0.1630
5 + years	0.4008	0.1462	0.2608	0.1923	0.3118	0.4957	0.1925
Native	0.3699	0.1506	0.2616	0.2179	0.2981	0.4846	0.2174

MALE

Migration condition	Informal sector - Structural articulation approach				Informal sector - Dualistic approach		
	Formal sector	Informal Dynamic S.	Informal Subsist S.	Unemployed	Formal sector	Informal sector	Unemployed
<1 year	0.3251	0.2171	0.2576	0.2002	0.2804	0.5212	0.1984
1 - 2 years	0.3757	0.2027	0.2735	0.1481	0.3312	0.5217	0.1471
3 - 4 years	0.4153	0.1946	0.2643	0.1258	0.3222	0.5519	0.1259
5 + years	0.4213	0.1815	0.2399	0.1573	0.3288	0.5134	0.1578
Native	0.3770	0.1852	0.2542	0.1837	0.3071	0.5095	0.1835

FEMALE

Migration condition	Informal sector - Structural articulation approach				Informal sector - Dualistic approach		
	Formal sector	Informal Dynamic S.	Informal Subsist S.	Unemployed	Formal sector	Informal sector	Unemployed
<1 year	0.2690	0.1077	0.3575	0.2658	0.2071	0.5261	0.2668
1 - 2 years	0.2845	0.0988	0.3435	0.2733	0.2241	0.5013	0.2746
3 - 4 years	0.3427	0.1267	0.3275	0.2031	0.2729	0.5235	0.2036
5 + years	0.3769	0.1054	0.2851	0.2326	0.2915	0.4758	0.2327
Native	0.3620	0.1094	0.2723	0.2564	0.2861	0.4584	0.2556

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