

## VII

# Work, Formality, Education and Training

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**T**his chapter deals with the urban labor market to which will be referring to when speaking of the labor market (unless we point it otherwise). We divide our study object into formal and informal sectors. What we are particularly interested in is an estimation of the yield or income difference enjoyed by the formally employed in comparison to those working in informal conditions; we are as well concerned with differences owed to education and training opportunities enjoyed by workers in their last job in each of the sectors. We will generally refer to these income differences as “premiums” or “treats”. For this purpose we used micro data from the special Training and Education Module of National Employment Survey (Encuesta Nacional de Empleo, modulo de Capacitación y Educación or ENECE) for the 1991, 1993, 1995, 1997 and 1999 years. For starters, formal job posts enjoy a 16% premium within their direct hourly labor income that can be accrued to possible entrance barriers and institutional factors. Premiums for education are positive as well, they appear to increase along the schooling level and are higher in the formal sector than in the informal sector, except at the junior high level. There is also a positive premium for training, while qualified workers concentrate in the formal sector.

### FORMAL AND INFORMAL URBAN LABOR MARKETS

There is a wide spectrum of economic and sociological theories that seek to explain how the labor market works and its outcomes. The International Labor Office (ILO) has been the main promoter of the dualistic market notion, that is, that developing countries' labor markets are composed of formal and informal sectors. The former includes public and private economic activities which are those offering regular working conditions guided by formal rules regarding hiring, licenses, taxes and so on (ILO, 1987: vol. 1, 25); in contrast, the later gathers those economic activities that are not subject to formal regulation. Within this broad outlines, there are many operational definitions of what the economy's informal sector is (Roubaud, 1995). This chapter adopts the specific workers' perspective for the informal sector: *informal workers* are considered to be those who do not receive any of the standard social benefits given in Mexico (IMSS, ISSSTE, SAR, INFONAVIT<sup>2</sup>) nor any private health insurance.

There are alternative approaches that aim to explain the origin of the informal sector (Tokman, 1990). At the most, they all pretty agree in noting that such dualism derives from asymmetries and discontinuities in the economic system produced by significantly divergent labor productivities and incomes within distinct labor environments; it is also commonly accepted that both sectors interrelate in the making up of the labor market. The notion of dualism emphasizes the role of labor demand, as the driving force behind it. Given any growth of the labor supply, it is the wanting accumulation rate within the formal sector which determines the relative size of the informal sector. This ideas can be traced back to Lewis' unlimited labor supply development model (1954)

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<sup>2</sup> That is, social security benefits for privately employed workers; public functionaries (at any level); retirement pension funds now privately managed; or housing loans respectively.

which – for analytic purposes – assumes the economy as being made up of both a modern sector and a subsistence sector. There are nevertheless important differences:

a) The Lewis model assumes that surplus work – mostly located within the subsistence sector – is above all unqualified; whereas most current notions of the informal sector regard workers of *all* occupational categories and levels of competence. Put differently, labor supply for the formal sector – in economies alike Mexico's – is almost unlimited for all occupational categories.<sup>3</sup>

b) The Lewis model assumes that the transfer of workers from the traditional sector to the modern sector run smooth and costless, when in fact it doesn't (Ghatak, 1995: 82-83). This is because the formal sector demands labor force of all training levels which, in turn, implies investment costs in education and the development of labor skills. The process is thus neither continuous nor cheap.

The size of the modern formal sector is limited by a wanting capital accumulation. Moreover, this sector's functioning relies on capital and technology-intensive processes commonly imported, which means that their expansion does not bring about significant job growth. Instead, like in most underdeveloped countries during recent decades, Mexico's education system has expanded rapidly following high population growth rates. This increase has surpassed the formal sector's labor requirements. This along with mass migration from rural to urban generated: a) highly educated underemployed workers; b) an increase in the workers' education requirements for their jobs, a process reinforced by the drop in education standards; c) social dissatisfaction related with the scarce means of social mobility, and d) a want of legitimacy of political institutions as unsolved economic and social problems turn worse (Fagerlind and Saha, 1983; Llamas, 1989).

The different approaches (Tokman, 1990: 5; Roubaud, 1995: chapter I) that conceptualize the urban labor market into formal and informal agree in noting that activities within the latter lie outside regulations, either because the productive units need to increase their flexibility and reduce the labor force cost, or as a result of the workers' survival strategy in economies with surplus labor force, or because the government's regulation system is inappropriate.

In this paper, our basic analysis unit is the labor income earner. Informal workers are those workers considered to be unprotected by the formal regulations, particularly those that do not receive any of the following benefits: IMSS, ISSSTE, SAR, INFONAVIT or private health insurance. Based on a logistic regression model,<sup>4</sup> where the dependent variable is related to the probability that a remunerated or waged (and occupied) worker belongs to the formal sector, it was estimated that the independent explanatory variables related to the worker's personal characteristics, such as training in the last job, middle-high and higher education, as well as 11+ years of work experience, have a higher degree of influence than variables associated with the work post, such as size of the establishment or number of hours worked. It was also measure that married men who were full-time

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<sup>3</sup> This assumption is made in the absence of supply elasticities estimates. Professions that recruit experts in research and development might be the exception.

<sup>4</sup> ENECE 1999 micro data on waged (occupied) population within the more urbanized areas (or major urban settlements) were used to adjust the logistic (or logit) function. ENECE is a sample of the National Employment Survey (ENE) 1999. The logistic function is an appropriate instrument to estimate the probability that a waged (and, thus, an occupied) worker has a post in the formal sector of the labor market. This instrument provides an estimate of the influence of the independent variables that explain this probability and a hierarchization of such influences. The variables used in the specification of the econometric model were a binary dependent variable: 1 = labor post in the formal sector and 0 = labor post in the informal sector. The explanatory variables considered were: sex (male, base group: female); education (no schooling, elementary, middle education, higher education; base group: junior high school); labor experience (less than one year, between one and 10 years, between 11 and 20 years, between 21 and 30 years; base group: 30 years or more); civil status 1 (single, divorced, separated, widowed; base group: married or in a relationship). The explanatory variables related with work post characteristics were: training in the last job (trained, base group: not trained); size of the employing company (self-employed, from 2 to 15 employees, from 16 to 100 employees, from 101 to 250 employees, base group = 250 or more employees); number of hours worked during the previous week (six hours or less, part time —between 7 and 23 hours —, half-time —between 24 and 47 hours—, base group: full time, that is 48 hours or more); work position (employer, self-employed worker, piecemeal worker, worker by commission or percentage, base group: worker with fixed wages or salary).

waged workers in large establishments had a higher probability of being in the formal sector than workers with different characteristics.

In the period 1991-1999, an average of 48.7% within the total waged (occupied) population in the highly urbanized areas appertained to the informal sector (table VII.2.). A previous study that uses the same definition of informality (Llamas, Hernández Laos and Garro, 2000) shows – based on an input-output model – that even in the most optimistic of forecasts of economic growth during the current decade, the Mexican economy will not have the capacity to generate enough waged jobs to be able to absorb the new members of the economically active population, estimated as slightly over 1,050,000 per year. This means that the informal sector will clearly continue to be part of the Mexican labor market.

## EDUCATION

Throughout the mid-twentieth century and the beginning of the twenty-first, economic growth and development have been persistently thought as solutions for most of the country's economic and social problems. Because of the perceived association of education and training with work productivity and the improvement of living standards, politicians as well as leaders of the private sector consider that it is necessary to reform the education system so that its activities are oriented to promote economic growth and development via an increased productivity. The human capital theory offers theoretical support to those who sustain that schools and companies must prepare society's human resources stressing the development of working skills, even if this means sacrificing a more humanistic or value-based education system. It is argued that more education and training among the population and more rigorous education in schools will promote both the national economy and a better social and material life for all individuals. This is so because the existence of more productive workers implies an economy with higher living standards for all citizens.

This ideology of economic development and social progress exercises an increasing influence on the planning and deploying of education reforms, though it has also been subject to serious criticisms, for example: *a)* it neglects humanistic and value-based education; *b)* it also forfeits the fact that opportunities for social improvement that mere economic development offers are limited by the system's accumulation, in other words, the creation of jobs. This means that the yields individuals get for education and training will depend on their finding productive employment. Even if academic performance levels of lower class students were to rise, that would not necessarily imply that their future job opportunities nor their capacity to contribute to a productivity surge would improve. It is very probable that increasing schooling levels will only allow workers to remain in the same kind of job position as their parents and, it is highly likely they will remain in the lowest rungs of the occupational ladder. Students in marginal rural and urban areas do need quality education as a conditional imperative to survive, but this does not ensure social mobility. *c)* It is not clear that the economic system workings will allow an improvement in the standard of living in the less developed countries. On the contrary, there has been increasing income and wealth inequality. This means that the lower classes have been participating less in the national income (rather than more) as the less developed countries grow. In fact, the informal sectors have grown and with them employment in jobs with low productivity and low income levels.

Schooling levels of the economically active population (EAP) for the period from 1991 to 1999 shows important changes (table VII.1.): *a)* The relative participation of workers that do not comply with compulsory schooling (no schooling, with elementary school studies and uncompleted junior high school —between one and two years) decreased from 60.7 to 53.5%; *b)* There was a large increase in the participation of workers with completed junior high school, the obligatory level, which went from 12.8 to 17.1%; *c)* There was a drop in the sub-professional level<sup>5</sup> which went from 8.0 to 6.0%; *d)* Finally there was a big increase in the middle-higher level, from 6.7 to 9.3% in the average professional level,<sup>6</sup> from 0.9 to 1.5% and in the higher level, from 9.6 to 12.0%.

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<sup>5</sup> This classification includes those who completed their junior high school and did technical studies.

<sup>6</sup> It includes people with middle higher studies (high school) and studied or finished their professional studies at a middle level.

These changes stemmed out from the flow of the new labor force. As can be seen in table VII.1., in the period from 1991 to 1999, the EAP increased in more than eight and a half million workers. Out of every 100 new workers, 25 had less than three years of junior high education,<sup>7</sup> 33 had completed three years of junior high school, 19 had middle-higher education, 4 had mid-professional studies and 20 had higher education. Likewise, the number of workers with a sub-professional level decreased by one. To sum up, during the regarded period, unqualified workers with incomplete elementary school studies and job training, workers with incomplete junior high school and sub-professional studies, decreased their relative participation in the EAP, whereas those who completed junior high school and those who studied the middle-high or higher education levels increased their participation.

**Table VII.1. Economically Active Population According to Schooling Level 1991 and 1999**

Schooling Level	1991		1999		Variation 1991-1999	
	Thousands	%	Thousands	%	Thousands	%
No Schooling	3614	11.6	3479	8.8	-135	-1.6
Elementary School						
1 to 5 years	7382	23.6	7470	18.8	88	1.0
6 years	6259	20.0	8186	20.6	1927	22.6
Labor Training	360	1.2	268	0.7	-92	-1.1
Junior High School						
1 to 2 years	1722	5.5	2091	5.3	369	4.3
3 years	4008	12.8	6799	17.1	2791	32.7
Sub-professional	2484	8.0	2385	6.0	-99	-1.2
Middle Higher Education						
1 to 3 years	2082	6.7	3681	9.3	1599	18.8
Mid-Professional	279	0.9	614	1.5	335	3.9
Higher Education	3035	9.7	4776	12.0	1741	20.4
Total	31225	100.0	39749	100.0	8524	100.0

SOURCE: INEGI-TPS National Education, Training and Employment Survey 1991 and 1999 (Encuesta Nacional de Educación, capacitación y Empleo, 1991 – 1999).

Although changes in the EAP's school composition are positively correlated with premiums for education in the labor market, there is not a lineal or simple relation between these two variables. A recent study (Hernández Laos, Garro and Llamas, 2000) showed that in terms of labor incomes the Mexican labor market rewards education more than mere permanence in the labor market.<sup>8</sup> For example, from 1991 to 1996, income differentials per hour and schooling level increased in favor of the workers with more education; in comparison to unqualified workers, the increase went from 26, 42, 46 and 68% for the elementary, junior high, middle high and higher education levels, respectively. The differentials point to the existence of increasing incentives to remain in the education system or to accumulate skills under the form of schooling.

#### TRAINING

*Training* is the learning process through which individuals acquire work skills. The economic agents, workers and employers, allocate limited economic resources to training. The only reason why they allocate resources to this activity at all is that they expect to receive a monetary or psychological benefit. People decide to train in order to raise their income levels. They might however be driven

<sup>7</sup> This figure resulted from an increase in the group with six or less years of schooling (22.0%), a decrease in the group that received training (-1.1%) and an increase in the group with one to two years of junior high school studies (4.3%).

<sup>8</sup> Schooling years, rather than permanence in the labor market is considered to be an indicator of a worker's skill level, which is not necessarily correlated with accumulation of skills (human capital), but with the acquisition of labor rights derived from seniority in the labor market.

by other reasons, such as the desire to improve their performance at work or to increase their self-esteem. Training thus improves their income expectations, which might be met or not depending on how the labor market is working. The expectation for improvement might not be met unless enough jobs are created to employ the supply of qualified workers. If there is a surplus of qualified workers or of workers with a higher schooling level, they will find themselves unable to pick up the jobs they were trained for and, thus compete for jobs open to workers with lower qualifications, displacing the later to occupations with even lower work skills. Companies train their workers because they expect to increase their profitability and competitiveness in the market via an increase in work productivity generated by training.

**Table VII.2.** Average Premiums for Formality\*\* and Distribution of Waged (Occupied) Population in Highly Urbanized Areas, 1991-1999(Percentages)

<i>Workers</i>	<i>Premium *</i>	<i>Gainfully Occupied Population</i>
Formal Workers	16	51.3
Formal and Trained Workers:	18.7	16.9
With Elementary School	16.9	1.6
With Junior High School	9.2	3.3
With High School	18.7	5.7
With Higher Education	24.1	6.3
Formal and Untrained Workers:	15.1	34.4
With Elementary School	20.9	8.4
With Junior High School	9	7.9
With High School	9.3	10.2
With Higher Education	22.6	7.9

SOURCE: The author's own estimates based on micro data from the National Employment Survey (Encuesta Nacional de Empleo, Módulo de Capacitación y Educación / ENECE, 1991, 1993, 1995, 1997, 1999).

\*Rewards for formality in relation to informality in terms of direct labor incomes.

\*\* Formality: Workers belonging to IMSS, ISSSTE, INFONAVIT or with private health insurance.

For the last two decades, Mexican social policies gravitated around the issue of training and, as such, there are different ways in which people receive capacitación: they can receive training even if they are unemployed, they can be trained for a job; or, else, they can be trained while being on a job.

Training the unemployed is part of the labor market's active policies, which purpose to improve the working of the market as to increase the quality of employment and reduce both unemployment and underemployment and so contribute to economic growth and a higher level of social justice (ILO, 1993: 7). The Labor Department (Secretaría del Trabajo y Previsión Social / STPS) held training projects partly funded by the World Bank, such as the Labor Force Training Project (1988-1992) and the Labor Market Modernization Project (1993-1997). These projects strengthened the Program for Training Grants for the Unemployed (PROBECAT), a program aimed to help the unemployed to find employment. How do these programs work? Grants last an average of three months and consist of minimum regional wages, assistance for transport expenses and basic health care. This type of training can be institutionalized through courses in educational institutions or mixed training, including practices in the establishments or companies participating in the program. In 1998, PROBECAT gave 506,660 grants of which more went to mixed training than to institutionalized training. This is due to the fact that the former has the advantage of occurring at the workplace and in the vacant posts; besides, employers are committed to hiring at least 70% of those completing the training.

Training for a job comprises the capacitación that either the young receive before joining the labor market, or that given to adults who wish to learn a new trade or change trades in public or private institutions. Each country has its own laws, institutions and norms defining the division of labor between the public and private sectors regarding the meeting of educational and training needs. In Mexico, the degree to which the government responds to public interest by offering education and training services is defined by article 3 of the Mexican Constitution, by the General Education Law and the Federal Labor Law. At present, private institutions train more people for a job than what is done by public institutions.

On the job training is wholly carried out by firms so that the form this training acquires depends on the company's productive characteristics: size, organization, required. Small firms provide informal training on the job: the workers with more experience train the new workers in the use of technology and in solving the every day problems that come up in production. Training in large companies happens to be a bit more formal: they use either their own or external facilities, as well as hired experts. Companies contribute to the development of work skills as that by institutions explicitly concerned with education and training, however contributions by these two types of institutions are not replaceable. Formal education and training in institutions placed outside the productive apparatus provide basic skills, that must increase and be enriched by the lessons learned in the companies. Besides, there are skills and knowledge that are only acquired in companies via their investments in learning through practice (*learning by doing*) or training.

**Table VII.3.** Average Premiums for Education and Distribution of Waged (Occupied) Population in Highly Urbanized Areas, 1991-1999 (Percentages)

<i>Workers</i>	<i>Premium *</i>	<i>Waged (Occupied) Population</i>
Total	100.0	
With Elementary School or less	**	30.4
With Junior High School	9.4	20.7
With High School	12.9	25.1
With Higher Education	23.3	23.8
Formal Workers ***:	51.3	
With Elementary School or less	**	10.0
With Junior High School	4.3	11.2
With High School	13.9	15.9
With Higher Education	28.2	14.2
Informal Workers:	48.7	
With Elementary School or less	**	20.4
With Junior High School	15.4	9.5
With High School	11.0	9.2
With Higher Education	16.1	9.6

SOURCE: The author's own estimates based on micro data from the National Employment Survey (Encuesta Nacional de Empleo, Módulo de Capacitación y Educación / ENECE, 1991, 1993, 1995, 1997, 1999).

\*Reward for education in relation to previous cycles in terms of direct labor incomes. \*\* Base group.

\*\*\* Formality: Workers belonging to IMSS, ISSSTE, INFONAVIT or with private health insurance.

Empirical evidence shows that the most profitable investment in developing working skills is derived from training on the job (Llamas, 1999: 385). Such kind of training benefits both workers whom receive a premium or monetary reward for better performance facilitated by training, and employers whom profit from a better performance or higher productivity levels among the trained workers.

Our work focused in training received during the last job. Within Mexico's most urbanized areas<sup>9</sup> in 1991 there were 14.4 million waged workers with only a 14.9% having received training in their last job. Most trained workers were then located in the economy's formal sector which by then trained four times more workers than the informal sector. Although comparison is made difficult because of changes in geographic coverage and size in the sample that produce variations in the statistical results that were analyzed, it is worth noting some of the trends. We know throughout the nineties a great effort was carried out in matters of training. Therefore, data reveals that in 1999 28.6% of the waged workers had received training while holding their last job, almost doubling the figure for 1991. During that period, the greatest training effort was carried out by the informal sector. Still, at the end (1999), the formal sector of the economy, was training three times more workers than the informal sector (Llamas and Garro, 2002).

<sup>9</sup> That is, settlements with more than 100,000 inhabitants.

Shares of qualified population among the occupied increases with the schooling level and it is a fact that more workers are trained within the formal sector than inside the informal sector at all schooling levels. From this follows that there are very few opportunities to overcome the disadvantages of a low schooling level, and that chances are fewer for those working in the informal sector of the economy. Observed education and training patterns after entering the labor market reveal that the skills gap between workers with higher and lower schooling levels increases throughout their working life. Workers with a lower schooling level have less possibilities of receiving training on the job. In the early nineties, workers with university studies in the United States and Germany (OECD, 1994: 119 and 122) received more training than workers with low schooling levels (in around five and four times, respectively); it was also noted that investment in training and greater work stability mutually reinforce each other, since slower rotation makes employers more willing to offer training. In the period from 1991 to 1999, the formal sector had three times more qualified workers than the informal sector; besides, in both sectors the number of workers with higher education doubles that of those with only junior high level (table VII.4.).

**Table VII.4.** *Average Premiums for Training while in the Last Job and Distribution of Waged (Occupied) Population in More Urbanized Areas, 1991-1999 (Percentages)*

<i>Workers</i>	<i>Premium *</i>	<i>Gainfully Occupied Population</i>
Trained Workers	23.9	22.5
Trained Formal Workers:**:	26.4	16.9
With Elementary School or less	19.2	1.6
With Junior High School	19.0	3.3
With High School	24.2	5.7
With Higher Education	34.3	6.3
Trained Informal Workers:	23.1	5.6
With Elementary School or less	23.3	1.0
With Junior High School	18.6	1.1
With High School	14.8	1.5
With Higher Education	32.9	2.0

SOURCE: The author's own estimates based on micro data from the National Employment Survey (Encuesta Nacional de Empleo, Módulo de Capacitación y Educación / ENECE, 1991, 1993, 1995, 1997, 1999).

\*Reward for training in the last job in relation to direct labor incomes.

\*\* Formality: Workers belonging to IMSS, ISSSTE, INFONAVIT or with private health insurance.

Between 1991 and 1999 in Mexico, 51.1% of the occupied and waged population had no more than mere junior highschool education level, of which, on average, only 7% was trained (tables VII.3. and VII.4.). These results are alike those of others countries; for example, during the eighties in Peru (Arriagada, 1989), the male population with a schooling level below junior high accounted for more than 50% of the urban labor force among which none received training. A study for the United States (Tan, 1990) confirms the strong relationship of complementarity between education and training since, according to its forecasts, the probability of being trained is greater for workers with a higher schooling level (both men and women) and increases with school achievement. Recent studies in the United Kingdom (Cassen and Mavrotas, 1997) also conclude that workers with a higher schooling level receive more training.

There are several reasons that account this low probability of finding trained workers among those with lower schooling levels. First of all, the relative disappearance of life-long careers perspectives within a firm; thus, training opportunities have been more unequally distributed than in the past. In a rapidly changing world, the time needed to learn new skills becomes more critical, since a company's life span has become shorter so firms no longer hold life-long workers or patronizing feelings. Employers perceive that as planning horizons have shrounk, clever workers have realized that once trained they should take advantage of better opportunities of getting a job in another company. This, in turn, reduces the firms' incentives to provide on-the-job training. As a result, if skills are such that cannot be learned rapidly, they will not be taught on the job. Companies tend to train those workers who can be trained rapidly and inexpensively; i.e., the workers with

higher schooling levels to start with since the more a person has learned, the easier it is keep on learning (Thurow, 1999: 145). A second reason is that workers with lower schooling levels have fewer possibilities to find a stable job; i.e., their rotation levels are much higher than among the workers with higher education levels. An OECD study (1993: cap. 4) found that in France, Japan and the United States the workers with higher schooling levels potentially have a greater opportunity of getting stable jobs than workers with lower schooling levels. This is the reason why employers would have fewer probabilities to harvest benefits from the training of workers with lower schooling levels than from workers with higher schooling levels. Additionally, those workers with lower schooling levels would have fewer incentives to participate in the training programs the employers offer if they expect to remain in the company for a short period of time.

A third and final reason is related to the slow growth of formal work demand in the less developed economies in relation to the growth of the economically active population. In Mexico, it is estimated that the demand for work in the formal sector grew by 1.2% from 1991 to 1996, whereas the EAP grew at rates above 3% (Hernández Laos, Garro and Llamas 2000). This explains why an important part of employment is generated in the informal sector that concentrates workers with lower schooling levels and has few training opportunities.

#### THE REWARD FOR FORMALITY

Workers' incomes on average are much higher in the formal sector. A previous study (Hernández Laos, Garro and Llamas, 2000) shows that for 1988, 1993 and 1996 the average income per hour the workers got in the urban formal sector was systematically higher than in the urban informal sector when occupation, establishment size and schooling levels are considered.<sup>10</sup> Roubaud (1995: 249-250) based on ENEU data from the 1987 third quarter, shows that average income for informal sector workers were almost 40% lower than that of formal workers with the same personal attributes in education, work experience and gender.<sup>11</sup> Our results differ from Roubaud's since we not only defined informality and labor income per hour in different terms but also controlled both the worker's personal variables and the job's variables. Our estimates reveal an average 16% premium for formality within hourly direct labor hourly incomes for the period from 1991 to 1999<sup>12</sup> (table VII.2.).<sup>13</sup>

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<sup>10</sup> The authors defined *formal occupied population* as the occupied population with some of the following benefits: IMSS, ISSSTE or voluntary or facultative social security. *Informal occupied population* was defined as the occupied population without any of the above. Not all of these results and consequences are shared by all researchers. For instance, Maloney (1997) and Maloney and Cunningham (1997), analyze whether the labor market is segmented into a formal sector with wages that are higher than the workers' opportunity costs, that are downwards rigid (that is, not easy to lower), while the informal sector was thought of as constituted by workers who do not have access to formal jobs and manage to find shelter in low productivity and low wage occupations while in waiting to gain access to formal employment. About this, these authors have not found evidence of informal waged workers lining up at the points of access to formal jobs, but they did find self-employment is better paid than formal employment. Self-employed is thought as being made up of two classes: that constituted by small-scale employers that seek to become independent and voluntarily join the informal sector where they are able to remain for long periods of time; and one other which functions as a reserve of the formal sector likely to join it in boom periods and of being displaced when the demand for labor decreases. The authors found no evidence that labor regulation discourages the mobility needed to ensure an efficient work allocation, and conclude that the Mexican labor market is reasonably well integrated and functions efficiently.

<sup>11</sup> Roubaud considers informal sector workers to be those occupied in the unregistered sector of the economy and, in turn, by "unregistered sector" the author understands all of those productive establishments that are not registered at the official tax offices.

<sup>12</sup> Semi-logarithmic (or semi-log) functions of labor income per hour worked were used to estimate the premiums (i.e. income yields or compensating differentials) to job formality, education and training. For the econometric estimates, we used micro data from the National Employment, Training and Education Survey (ENECE) for 1991, 1993, 1995, 1997 and 1999. These surveys are a sample of the National Employment Survey (ENE) for the same years and, apart from the ENE data, contain additional data on education and training. In order for the estimates to be comparable, we focused on the major urban settlements (those with more than a hundred thousand inhabitants, which in the surveys are denoted as "more urbanized areas"). It was deemed inconvenient to include data on less urbanized areas because their size and geographic location have varied significantly in time, which affects results and hinders comparison. Whereas for the more urbanized areas, changes in geographic coverage and sample size have been less drastic and less frequent (we would like to thank Teresa Rendón for this clarification). Comparison faces additional problems, for example, in ENECE 1991 the workers occupied in these areas were not asked what kind of benefits they received (question 7d in the questionnaire of the other years). This question is crucial to define formal or informal employment.

The specified regressors of the econometric model trying to explain the natural logarithm of labor income per hour worked were also used in the logit regression in detailed in footnote 4.

This premium or reward for formality may be thought of as evidence of a group of workers within the informal sector waiting to move into the formal sector. Likewise, it probably points out to the existence of limits to labour mobility between both sectors and the likely (very, indeed) of a series of mechanisms to determine labor incomes. Let us analyze these two phenomena more closely.

In the first place, school credentials can inhibit the entrance to the formal sector. This sector holds higher education requirements which might limit inter-sectoral mobility. Roubaud (1995, p. 210) finds that the profile of the labor force for the formal and informal sectors hardly differs except for schooling levels. A study of the informal sector in Latin America (López, Sierra and Henao, 1987; quoted by Roubaud, 1995: p. 211) shows that both sectors tend to share similar labor force characteristics, except for schooling levels and workers' age. While our research found differences in training, education and, to a lesser extent, labor experience amid the workers' profile

It is likely that work processes within the formal sector are more complex than those in the informal sector. More complexity of the work tasks asks for more competence of the labor force, so that the recruitment and training costs faced by employers rise (Lay and Wiebelt, 2001). These costs can induce employers to establish higher wages than those prevailing in the market as a way to retain the hired workers and as an incentive for efficiency,<sup>14</sup> that would limit the competitiveness of the already hired workers which might partly explain the presence of a reward for formality. In the considered period, as noted in theory, we found a higher reward for formality among qualified workers (18.7%) than among unqualified workers (15.1%) and, besides, the reward for formality among the more skilled workers —noted by their middle-higher and higher schooling levels— is higher among qualified workers than among unqualified workers (table VII.3.). It is also likely that the rotation and lay-off costs generate “profits” and negotiation power in already hired workers and protect them against the competition of the unemployed and the workers in the informal sector.<sup>15</sup>

Secondly, what may be the institutional factors determining direct labor incomes? As we hinted, premiums for formality exist because even if labour productivity is positively related with labor income, payments may still diverge because of differences in the mechanisms that help to estimate them. For instance, we took into account both the personal attributes that point to the workers' potential productivity and job characteristics. This premium persists even during sluggish periods characterized by drops in real incomes of the entire labor vector. What other factors apart from the aforementioned can explain its presence?

One additional factor would akin to the institutional nature of the Mexican urban labour market, such as the Minimum Wages Law and labor union presence. By the mid-nineties compliance with the law was found to be quite restricted in the informal urban sector (Hernández Laos, Garro and Llamas, 2000: 63, and table 46), which contributed to a large proportion of waged workers in this sector receiving incomes below the minimum, particularly workers with a schooling level of elementary school or below. Thought not a general fact, compliance with the law is higher in the formal urban sector than in the informal sector. Consequently, in 1991, the proportion of waged workers with elementary schooling or below that had middle-level hourly incomes equal or lower than the minimum wages was 47.9% in the informal sector and 11.8% in the formal sector, whereas in 1996 these figures increased to 61.5 and 34.2%, respectively. Since a sizeable portion of the

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Coefficients of the estimated semi-log function of labor incomes signal the direct percentage change in labor incomes (in percentages) due to changes in each of the explanatory variables included in the model. In particular, the regressed coefficients allow us to estimate the rewards for education, training in the last job and formality in the work post. Based on these disaggregated results and the distribution of the waged (and occupied) population within highly urbanized areas, the premiums or yields for formality, training while in the last job and education were estimated using averages weighted for 1991, 1993, 1995, 1997 and 1999. These averages are presented in tables VII.2., VII.3. and VII.4.

<sup>13</sup> This 16% premium estimation refers to the average situation and that there might actually be subgroups of workers for whom there is a negative premium for formality. For example, Meléndez (2002) estimated that within the group of waged workers which are Social Security (IMSS) constituents, approximately half of them have a direct labor income that is lower than the incomes of around 13% of the waged workers without IMSS, this is in fact interpreted as a positive valuation of constituency. The author used quarterly micro data of the National Urban Employment Survey (ENEU) from 1994 to 1999.

<sup>14</sup> The wage efficiency theories (Lindbeck, 1994: 36) claim that employers are willing to pay higher wages than those fixed by the competitive labor market in order to recruit good workers, reduce desertion or encourage works to improve performance.

<sup>15</sup> This argument is theoretically based upon mechanisms regarding workers who have already been hired *versus* workers searching for employment (insiders-outsiders); (Lindbeck, 1994: 37). The difference between this theory and the wage efficiency theory lies in that in the latter it is the company that is interested in not reducing wages, whereas in the former it is the workers who are interested in maintaining their negotiation power in order to keep wages higher above that the market.

remunerated informal labor market is made up of waged workers – 39.4% in 1991 and 41.4% in 1999 – the restricted compliance of the Minimum Wages Law means that informal waged workers are earning progressively less than formal workers on average. Besides, the income differential favoring the latter is positively affected by the presence of the unions in the formal sector. One of the effects unions produce is an increase in the wages of union members over their level of competitiveness. Panagides and Patrinos (1994), for example, based on the 1989 National Household Incomes and Expenditures Survey report that average remuneration for unionized workers is 10.4% higher than that of the un-affiliated, controlled by differences in education, gender and sector of activity; alternatively, Alarcón and McKinley (1995) show that the wage differential between unionized workers and non-unionized workers is closing down since they went from 25% in 1984 to 14% in 1989 and only 3.2% in 1992; it seems, however that the gap remained stagnant as Hernández Laos, Garro and Llamas (2000), based on the 1991 and 1996 National Employment Surveys, found an average wage premium of 3% for the unionized workers in manufacturing. Although the estimated wage differential favoring unionized workers in relation to non-unionized workers is now modest, the presence of unions in the formal sector is a positive contribution to a premium for formality.

A further contributing set of institutional factors is related to the firms' social norms, customs that may affect the determination of labor incomes. Companies might have their reasons to pay their workers higher incomes than the labor market. Firms have different payment capacity so marginal companies in competitive industries usually make low profits and have to pay the lowest wages possible in order to survive whereas large companies, particularly those with protected markets, generally make higher profits and thus hold may be in position to pay higher wages than the rest so long as they have additional goals to maximize profits (such as having a good image in the community or treating the workers in a patronizing way). Firms also vary their strategy and management horizon so one firm may be paying low wages because management may be narrowly focused in short-run results or may hold a perspective in labor relations based on rivalry. There are also historical factors and customs to regard: some companies have a relatively high payment scale because they are growing very rapidly and cannot reduce it that easily since it might generate dissatisfaction and bring down the workers' morale (Lester, 1951: 63-64; Kaufman, 1988: 153-154).

#### PREMIUM FOR EDUCATION

Empirical studies on the effects of education within labor markets usually point out that more educated people systematically receive higher incomes. Our results do not differ from this. In fact, for waged populations inhabiting the major urban settlements, premiums for formal education are positive and increase with schooling level (table VII.3.).

The estimated premium for junior high schooling level is lower in the formal sector than in the informal sector. The presence of unions and a greater compliance with the minimum wages law in the formal sector positively affect the workers' wages within its lower tiers, which are usually those with mere elementary schooling or even lower levels; whereas in the informal sector, which is marked by an important agglomeration of poor schooled workers (i.e. with elementary or even lower education), the yield of such school achievements, in monetary terms, is generally depressed.<sup>16</sup> This may cause that within the formal sector the precession upon the junior-high premium may divert towards the informal sector.

In fact, between 1991 and 1996, an overall drop in real labor incomes was observed, but it was greater for workers with lower schooling levels than for workers with higher schooling levels. This drop was due to inflation (after the 1995 crisis), adjustment programs requiring strict nominal wage increases, and the agreements backed by the top leaders of corporatist labour unions (Hernández, Garro and Llamas, 2000: 35-36). Because the informal sector gathers those workers

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<sup>16</sup> The gainfully occupied population in the more urbanized areas in the period from 1991 to 1999 was on average distributed as follows: 51.3% in the formal sector and 48.7% in the informal sector. Out of the total gainfully occupied population, the formal sector occupies 10% with a schooling level of elementary school or less, 11.2% with junior high level, 15.9% with middle-higher education level and 14.2% with a higher level, whereas the informal sector was 20.4%, 9.5%, 9.2% and 9.6%, respectively.

with the meagrest schooling level (elementary school or less), and because of the high labor income flexibility within it, workers with junior high schooling enjoyed a wider premium within the informal sector than that enjoyed by formally employed workers.

Now, more accordingly with what common sense would dictate, the premiums for education at a middle-higher and higher education level are higher in the formal sector than in the informal sector. This is probably due to the presence and quality of inputs complementary to education in the formal sector that enhance higher yields and are rather denied to those of the informal activities. Among these Levin and Kelley (1997) mention: *i*) new investments that are an essential requirement to increase productivity through new technologies; *ii*) new work organization methods that are necessary to take advantage of the greater productive capacity of the workers with higher schooling levels; *iii*) new managerial or executive approaches that support or establish an increased integration of training, product development, research, marketing, production and financing.

The highest premiums for education are observed in the higher schooling levels. The premium at this level might have been positively affected by greater relative increases in the demand for workers with higher schooling levels. Hernández Laos, Garro and Llamas (2000), based on the 1991 and 1996 National Employment Surveys, use the change and participation model developed by Katz and Murphy (1992), and conclude that there is a technological bias favoring the highly educated workers within non-agricultural economic activities, which implied a higher relative demand for workers with higher education.<sup>17</sup> They also state identify a growing incentive for human capital accumulation (under the form of education) due to the perceived (positive) association between income differentials and schooling level. Another study (World Bank, 1998: tables VII.5. and VII.6.) reports increasing private and social rates of return to education for 1994 based on data from the National Household Incomes and Expenditure Surveys. These results are consistent with the presence of higher premiums for higher schooling levels.

#### PREMIUM FOR TRAINING WHILE IN THE LAST JOB

Estimates for the period from 1991 to 1999 show that, in average, a low percentage of workers are trained at their workplace – just 22.5% of the waged population within the major urban settlements and only 16.9% of those working in the formal sector (table VII.4.).

Training while in the last workplace does translate into higher earnings for the workers. In fact, between 1991 and 1999, the average premium was 23.9% (table VII.4.). This result is compatible with previous studies. For example, in the early nineties a premium of 21.6% of the labor incomes due to one year's training at the workplace in the Monterrey Metropolitan Area shown by Garro and Llamas (1995)<sup>18</sup> or, more recently, Garro, Gómez and Meléndez (1997) estimated a 9.9% premium for training.<sup>19</sup>

Put briefly, premium for training is higher than the premium for education in both the formal and informal sectors whatever the schooling level. These results are similar to those shown by national (Llamas, 1999) and international research (Middleton *et al.*, 1993; Freeman, 1994).

The average premium for this kind of training is higher in the formal sector than in the informal sector. We can take for granted that there is more training in the formal sector and education, and we can also assume education and training to be complementary, so it well may be that the factors determining the premiums for formality and education may also influence the presence of a higher average premium for training, particularly in the formal sector. This subject to some conditions: *i*) if it is true that the labor processes in the formal sector are more complex than the labor processes in the informal sector which would require a more qualified labor force, that may induce employers to establish higher premiums for trained workers as a stimulus to improve

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<sup>17</sup> The presence of a technological bias does imply a shift of relative marginal productivities favoring the workers with more schooling against those with less schooling. A recent paper by Llamas and Garro (2001) shows that the relative increases in the labor incomes of workers with higher schooling is due both to increases in relative marginal productivity and to *credentialism*: the process through which employers increase the school credential requirements for a job. The workers with higher schooling levels thus displace those with lower schooling levels from the better paid jobs and increase their relative incomes without necessarily increasing their relative productivity.

<sup>18</sup> The estimate was based on a sample of 2,000 households or 3,531 workers in the Monterrey Metropolitan Area. The survey was conducted in mid-1993.

<sup>19</sup> The estimate was based on micro data from the National Urban Employment Survey 1993, second quarter.

performance and retain them, and; *ii*) the presence of more and better complementary inputs to working skills under the form of training generate greater earnings in the formal sector than in the informal sector.

For workers with elementary schooling level or less, premiums for training are, once again but not altogether surprisingly, higher in the informal sector than in the formal sector. This might be due to the fact that training in the informal sector is effective, oriented to solving the problems related to the productive activity carried out, whereas in the formal sector training may in part be fictitious or non-effective. That is, employers register their training programs in the corresponding bodies in order to comply with the Federal Labor Law, but in practice the workers with low schooling level are not trained since the formal employer finds it expensive to train workers with less than 7 years' schooling (Llamas and González, 1997; Llamas, Hernández and Garro, 2000).

For workers with junior high schooling, the premiums for training in the last job are slightly higher in the formal sector than in the informal sector. For workers with middle-higher education, the yields for training in the formal sector are higher than in the informal sector. It is likely that qualified workers with middle to higher education in the formal sector work with more complementary productive inputs, usually in processes that are technologically more complex than in the informal sector. This would produce higher productivity levels, higher premiums for training and higher incomes for the qualified workers.

For workers with higher education, premiums for training are similar in both sectors. It is likely that this is due to the fact that training is addressed to management, planning and similar skills, that have equal earnings regardless of the sector.

Premiums for training in the formal sector increase with schooling level revealing complementarity between education and training since, as schooling increases, premiums for training also increase. On the other hand, a weak complementarity between training and schooling level can be observed in the informal sector, since the proportion of qualified workers increases with schooling level, but not the premiums.

## CONCLUSIONS

Empirical research, theory and common sense indicate that higher schooling levels favor the creation of a more and better qualified labor force and with more possibilities of improving production processes. This is a general truth revealed in multiple ways contingent on the country's historical, cultural and social context. In Mexico's case, insertion into the global economy delivered low economic growth—around 3.5% per year during the nineties—and low skill levels among the economically active population. The low growth rate made the economy's formal sector absorb almost half the growth of the EAP while the informal sector grew slightly. The low level of labor skills is manifested in the fact that almost half the waged occupation merely reaches a schooling level of nine years or less. It is therefore a population that is difficult to train.

Private economic activities are driven by the search for high profits, not for a universal increase of labor skills. It is naive to think that economic competition will encourage employers to invest in increasing labor force competence in the economy (Brown, 2001: 35). A labor force with a high level of competence is necessary so that companies and the economy can increase their level of competitiveness, but it is not the only source. Indeed, reducing labor costs and expenditure in training is another way of increasing profits and competitiveness. Actually this seems to have been the way Mexican firms chose to reach competitive prices in the global market. This explains the wide presence of low-qualified waged population in the formal sector.

Our results support the thesis that the labor market is segmented into a formal sector and an informal sector, and contradicts the notion that the informal sector is a kind of "reserve army" of the formal sector. It is assumed that workers acquire experience and training in the informal sector that become "human capital" when they move into the formal sector. The *reserve* factor implies that workers are expecting to, eventually, being incorporated into the formal sector (Hallak and Cailods, 1981: 25). The informal sector is a structural characteristic of underdeveloped economies and, in the case of Mexico, its presence seems to be getting stronger rather than weakening. Because of this, it cannot be foreseen whether or not an important part of the labor force will join the formal sector. Differences between sectors, regarding schooling levels, training in the workplace and mechanisms to determine labor incomes confirm the presence of segmentation. Premiums for the

workers' education and training in the informal sector are likely to have an anchoring effect rather than expel workers to join the ranks of those willing to enter the formal sector. We likewise found that workers are drawn to premiums for formality, resulting from multiple factors. There is nevertheless no easy transition into this sector; schooling level is the main constraint since it defines the possibilities of receiving training in the workplace and, probably of even remaining there.

The premium for education and training shows that those who join the labor market with a low schooling level are at a serious disadvantage throughout their work trajectory. An OECD study (1994: 126-127) concludes that there is no ideal profile of labor skills nor a key distribution of schooling levels for best work performance. Empirical research clearly shows that the levels previous to the higher level must be reinforced. After this conclusion, there is no evidence that "more is better". What is important is the quality of the formation of professionals oriented to research and development and, in general, to the application of knowledge to productive processes. In Mexico, it is necessary to retain youth in the education system until they acquire the basic skills that will facilitate the future acquisition of new competences.

What strategy should Mexico follow to develop competences related to the workers' education and training? First of all, the government must develop policies to retain youth in school and improve the quality of education services. Secondly, it must not be ignored that high competence systems emerge from the formulation of national strategic projects, they are not a product of spontaneity (Brown, 2001: 35). They require the joint efforts of government, employers and workers' organizations.

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