# GEOGRAFIA Y DESARROLLO

Número 16

1998

COLEGIO MEXICANO
DE GEOGRAFIA A.C.

INEGI
INSTITUTO NACIONAL DE ESTADISTICA
GEOGRAFIA E INFORMATICA

# SPATIAL PATTERNS OF INCOME AND INCOME INEQUALITY IN MEXICO CITY*

**Ian MacLachlan**

Instituto de Geografía, Universidad Nacional Autónoma de México
y Universidad de Lethbridge, Lethbridge, Alberta, Canadá

**Resumen.** *Hay tres teorías para explicar la desigualdad en ingresos en México. Las cuales son: la "U" invertida de Kuznets, la crisis Mexicana y la formal-informal dualidad de operaciones. Información empírica es usada para construir mapas de la distribución de ingresos en la zona Metropolitana de la ciudad de México. Debido en parte a la gran cantidad de distritos en la ciudad, se encuentra una enorme heterogeneidad en cada distrito. Altos niveles de desigualdad en cada distrito reflejan el alto desacuerdo y desigualdad en ingresos de empleo en la escala nacional.*

**Abstract.** *To explain trends in inequality in Mexico, three theoretical approaches to income inequality are outlined: Kuznets' inverted "U", Mexican crisis theory, and the informal-formal duality. Empirical data are used to construct maps of the distribution of income in the Mexico City Metropolitan Zone. Due in part to the very large size of many districts in the city, there is enormous heterogeneity in each district. High levels of inequality in every district mirror the very high variance and inequality of employment income at the national scale.*

## INTRODUCTION

The goal of this paper is to explore the distribution of income in Mexico City. Two objectives contribute to this goal. The first is to map and analyze the geography of income in the Mexico City Metropolitan Area in 1990 and to compare the spatial distribution of income with Griffin and Ford's (1980) analog model of social structure in the Latin American City. Second, the level of income inequality within the metropolitan area's *delegaciones* and *municipios* is measured and linked to national scale income inequality.

The notion of inequality and its polar opposite, equality, is multidimensional and heavily value laden. As a social goal, equality refers to a level of access to opportunities for personal development and to scarce resources irrespective of social characteristics such as race, religion, brute physical strength, age, parentage or social class. But the very existence of these social characteristics is evidence that there can never be complete social equality in a plural society. In this paper we leave aside inequalities in the many important measures of social and physical well-being and focus on only one dimension of equality: the degree to which social groups share income in proportion to the number of people in that group. Equality of access to resources via income (both monetary and "payment in kind") is a vital measure of the quality of a society but it must be acknowledged that income fails to measure many other personal characteristics that advantage some people over others. For example, Langer, Lozano and Bobadilla (1991:199) describe Mexico's persistent "epidemiological polarization" in which the society is divided sharply between the healthy and unhealthy, groups which have sharp differences in rates of morbidity and mortality.

In recent years inequality has become one of the key issues in social science and a critical item on the social policy agenda of governments all over the western world. There is ample evidence that while the 1970s were characterized by declining levels

* The conscientious work of my research assistant, Silvia Andrea Vázquez Hernández is acknowledged with gratitude. Special thanks are due to Dra. Atlantida Coll-Hurtado, Maria Elena García Villagómez, Dr. Jim Simmons, Dr. Adrian Guillermo Aguilar, Dr. Chris Cook, Diane Clark, and two anonymous referees.

of inequality in employment earnings, the 1980s have experienced growing inequality in most of the developed countries of North America and Western Europe. While the reasons for this increase are unclear, post industrial changes in the occupational structure, changes in demographic structure, and a new division of labour between the young and middle aged that puts a premium on experience to the disadvantage of youth account for some of the growing wage dispersion (Davis 1992; OECD, 1993). A number of American commentators have established both theoretical and empirical connections between globalization (measured by dependence on international trade) and rising inequality in employment earnings in a wide variety of both developed and less developed countries. For example, Fieleke (1994: 1) observes:

> Rising income inequality has not been limited to the United States or even to the wealthiest countries; the gap between the rich and the poor has widened in at least some of the countries with appreciably lower incomes, including Mexico. Is it possible that globalization has generated greater inequality within the poorer as well as the richer countries?

Whatever its origin, the link between growing national scale inequality and spatial inequality between subregions is problematic. Housing initiatives to encourage mixed income neighbourhoods such as the emerging "neo-traditional planning" school in the United States could cause growing levels of inequality within neighbourhoods and convergence in levels of inequality between neighbourhoods. On the other hand, changing values and market preferences for greater levels of spatial segregation between different income groups and a housing market that facilitates residential mobility consummate with social mobility could lead to greater levels of interneighbourhood disparity despite a constant or even declining level of national equality. The forces creating more or less income segregation within urban areas are more nationally idiosyncratic than the broad trends towards national level inequality that are shared by most western countries. In short, there is no necessary connection between national scale inequality and spatial income inequality among different parts of the city.

## THEORIES OF INCOME INEQUALITY

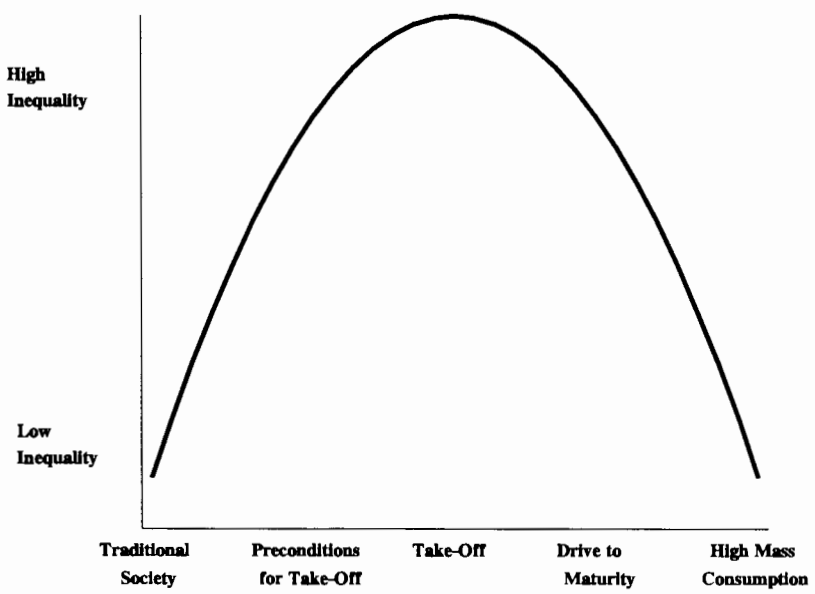
### Modernization Theory: Kuznets' Inverted U and Rostow's Stages of Economic Growth

In 1955 Simon Kuznets proposed his inverted "U" hypothesis: as regions develop over time they experience growing income inequality which peaks and later declines.

> One might thus assume a long swing in the inequality characterizing the secular income structure: widening in the early phases of economic growth when the transition from the pre-industrial to the industrial civilization was most rapid; becoming stabilized for a while; and then narrowing in the later phases. (Kuznets 1955: 18)

Five years later Walter Rostow's (1960) "Stages of Economic Growth" model put Kuznets' inverted U in a broader five stage context of national economic development (figure 1). The inevitable process of modernization and industrialization would see less developed regions and countries following the

**FIGURE 1:** *Kuznet's inverted "U" and Rostow's "stages of economic growth"*



historical growth patterns of countries that developed earlier Wealth and income would necessarily become concentrated through savings in a class of industrial capitalists and entrepreneurs to accumulate and finance capital formation and to undertake the large scale capital investments in plant and machinery required for industrialization. Later in the process, industrial unionization and the emergence of the welfare state would foster a more equal distribution of income during the "drive to maturity", a necessary precursor to "high mass consumption". Reductions in inequality were associated with increases in real income per capita, thus per capita incomes of lower income groups would increase faster than upper income classes (Kuznets 1955: 5).

In attempting to explain the inverted U model, Kuznets identified an interesting geographical paradox, that should, in fact, have caused an increase in inequality rather than the observed decrease. Industrialization coincided with urbanization and a relative shrinkage in the rural population. Income inequality and the average level of income in rural areas tends to be lower than in urban areas, a generalization that holds true in Mexico (Garcia-Leon 1972: 551). As industrializing nations urbanized, the weight of the more unequal group increased. Thus higher levels of urbanization with higher levels of inequality should have driven national inequality higher. Kuznets' solution to this paradox was, that after a short lag, urban industrialization leads to rapid increases in the productivity and incomes of the lowest income groups in the city:

> Once the early turbulent phases of industrialization and urbanization had passed, a variety of forces converged to bolster the economic position of the lower-income groups within the urban population. The very fact that after a while, an increasing proportion of the population was "native," i.e., born in cities rather than in the rural areas, and hence more able to take advantage of the possibilities of city life in preparation for the economic struggle, meant a better chance for organization and adaptation, a better basis for securing greater income shares than was possible for the newly "immigrant" population coming from the countryside or from abroad. (Kuznets 1955: 17)

In short, Kuznets proposed that the gradual urban socialization and upward mobility of rural outmigrants would drive urban inequality down which, due to the increasing level of urbanization, would contribute to declining national scale inequality.

By 1965, Williamson had extended the Kuznets model from aggregate levels of national income inequality to show that the intranational pattern of income inequality between regions also followed Kuznets' inverted U. Early industrialization resulted in regional concentrations of income and factors of production in nascent industrial complexes such as Britain's Midlands or the industrial Midwest of the United States. Growth poles such as steel and coal, automobile parts and assembly, or petroleum and petrochemicals benefit from agglomeration economies as a process of circular and cumulative causation becomes entrenched (Pred 1977). Later in the process, industrial technologies and capital begin to flow outward from the industrial hearth, regional factor prices gradually come into equilibrium and regional inequalities begin to diminish. Thus modernization theory proposes that the industrialization and urbanization process creates an inverted U in regional inequality: regional divergence followed by regional convergence (Fan and Casetti 1994).

**The Mexican Crisis: The Macroeconomy and Social Trends**

In much of the contemporary social science literature in Mexico one finds allusions to the impact of the crisis of 1982 and the ensuing neo-liberal policy responses on a wide variety of social and economic measures (Barkin 1990; Fleck 1994; Lustig 1992; Vilas 1995). While the folly of excessive leverage and international borrowing predicated on continued high world oil prices, the severity of the debt crisis of 1982 and ensuing double digit inflation should not be gainsaid, gross inequalities in the distribution of income are not a new phenomenon in Mexico. Whether growing, stagnant or in outright decline, economic output has historically had little bearing on the status and living standards of either Mexico's poorest, or indeed, its richest. Neo-classical development economics predicts that the benefits of industrialization, rising productivity and growth in the gross domestic product per capita will "trickle down" to raise the living standards of even the poorest people and the poorest regions.

Yet in the case of Mexico, inequality between household income quintiles seems to have been unresponsive to national economic growth trends. After thirty years of rapid industrialization, Bergman (1980: 17) observed that income is distributed very unequally in Mexico and that, "changes in inequality in Mexico since 1963 have been small or nil...three different measures of inequality...show no significant trend between 1963 and 1977".

The poorest 20 percent of the population in Mexico City earned 7.8 percent of total income in 1950 but only 1.9 percent in 1975. The richest decile earned 38.6 percent of total income in 1950 and 43.5 percent of total income in 1975 (Baer, 1986:197-198). Thus in the traditional view of the Mexican crisis that is sketched here, it must be borne in mind that high levels of interquintile inequality in household incomes long predate the crisis of 1982 (Banco de México 1968; Calderon and Aguilar 1989; De la Rocha and Latapí 1991).

Through most of the post war boom, and up until 1982, the Mexican economy enjoyed growth in its per capita gross domestic product, rising real standards of living, relatively rapid industrialization and urbanization. The proportion of the population in the generally poorer rural areas gradually declined and employment opportunities opened up in industrializing urban areas as multinational enterprises expanded behind Mexico's tariff wall (Coll de Hurtado 1983). Multinational enterprise absorbed or competitively displaced many medium and small scale enterprises thus both the agricultural and industrial sectors became concentrated and polarized between highly capitalized multinational enterprises and small scale workshops and *ejidos*. Ironically, self-employed workers in both rural and urban areas were transformed into waged employees or piece-rate workers (Barkin 1990: 79) thus formal sector employment flourished at the expense of the traditional informal sector. The well paid public sector bureaucracy grew ten fold between 1940 and 1980 to reach some one fifth of the total labour force. During this period, the corollary of inequality was persistent high levels of poverty amidst general economic growth.

Following the 1976 crisis and a 40 percent devaluation of the peso, rising world petroleum prices and massive hydrocarbon discoveries along the Gulf coast fuelled an oil boom. Government polices swiftly turned from the monetary crisis and the redistribution of scarce resources to "administering the abundance" in the words of then President, José López Portillo (quoted in Lustig 1992: 20). Erroneous predictions of continued high petroleum prices and relatively low interest rates were the justifications for a massive international borrowing program to finance both public and private investment in the late 1970s. The fiscal deficit peaked at 14.1 percent of GDP in 1981 just as oil prices began to slump, interest rates began to climb, and nearly half of the foreign debt was due for refinancing in 1982. Following massive outflows of domestic currency, the peso suffered a catastrophic devaluation from 3.8 cents U.S. to 2.2 cents in March, 1982 (Lustig 1992: 20-25). The crisis year of 1982 was marked by a 0.6 percent decline in total economic output and an inflation rate of 98 percent.

The outfall of the crisis for consumers was an average 22.9 percent fall in the purchasing power of wage income (though nominal wages did not decline) in 1983 and an average annual decline in real wages of 8.6 percent from 1983 to 1988 when economic growth resumed. As the real value of aggregate wage income declined due to crisis-induced restructuring in the formal sector, domestic market demand declined creating a downward spiral in consumption and purchasing power. Devaluation also reduced the effective demand for imported goods which had a negative impact on employment in import dependent sectors such as transportation and wholesale trade (Gilbert 1994: 611).

The decrease in the purchasing power of wage income had the most devastating impact on the wage-earning middle class as the lowest income groups derive more of their income from non-monetary sources and self-employment, while the tiny wealthy minority rely on non-wage income from domestic corporate profits and investment income. The plight of the middle class was exacerbated by fiscal policies that tax middle-class consumption and salaried wage earners disproportionately (Barkin 1990: 91). The lowest wage earners suffered from the declining real purchasing power of the minimum wage and the percentage of workers earning less than the minimum wage vaulted from only 13 percent in 1982 to 37 percent by 1985 (De la Rocha and Latapí 1991: 6 n.7). Middle class workers in the public sector suffered from government austerity measures on top of the real declines in income. For example, teachers' base salaries dropped from 2 times the minimum wage in 1981 to only 1.3 by 1989 (Latapí and Roberts 1991: 104).

So-called "open unemployment" increased by 50 percent in 1983 but soon subsided to pre-crisis levels. Declining real wages in the formal sector allowed firms to cope with declining demand without reductions in the work force or prolonged high unemployment (Fleck 1994; Lustig 1992: 75-6). Of course, the "open unemployment" figure excludes those who work as little as one hour per week, those who work without remuneration (e.g. in family businesses) and the "self-employed" (*por su cuenta* workers) which includes a wide variety of informal sector

occupations. As most of the unemployed in Mexico have little option except to turn to informal employment and because of the way Mexico defines "open unemployment" for statistical purposes, the level of unemployment officially reported for Mexico during the crisis was considerably lower than in other North American and Latin American countries (Fleck 1994; De la Rocha and Latapí 1991: 7).

Since 1980 real unemployment levels have grown rapidly throughout Latin America, caused by labour shedding by manufacturing enterprises which had a particularly severe impact on industrial centres such as Mexico City. Those who lost wage employment as a result of the crisis were often forced into self-employed informal sector activity. Paradoxically, the openly unemployed in Mexico are considered to be the fortunate minority among victims of job loss who can afford the "luxury" of not working (Lustig 1992: 75). According to this argument, the openly unemployed tend to be those with some education and savings and are typically better off than the working poor. Most of the less privileged who lose employment in the formal sector have no choice but to attempt to scrape by in some form of informal sector activity.

However, Gilbert (1994: 613) argues that the "luxury unemployment hypothesis" is breaking down as the informal sector is becoming choked with entrants. Informal sector jobs are growing harder to find, more difficult to enter, and there is simply less money available to sustain it. Open unemployment in Third World cities seems to be rising fastest among the poorest and least well educated, calling the luxury unemployment hypothesis into question. Unemployment is no longer a luxury, but a hallmark of the utterly desperate conditions faced by the very poorest strata in urban society. Behind the grinning made-up face of every person "employed" as a fire breathing clown at Mexico City's major intersections is a desperate member of the effectively unemployed with no alternative to informal activity.

The crisis contributed to worsening levels of inequality in three ways. Real wage declines had a disproportionately severe impact on the middle class, increasing percentages of lower income workers found themselves unemployed, and the formal sector declined in favour of the informal sector creating an income duality consonant with the duality in terms of employment.

**The Formal-Informal Duality**

Informal economic activities tend to be unregulated and autonomous in contrast to similar activities that are fully regulated and articulated with the institutional superstructure. In Mexico City chiclets are sold on street corners and in Sanborn's stores. The concept of informality is notoriously difficult to define. Informal activity is typically characterized by an elemental division of labour in which the owner and family are directly involved in the production of goods and services; the production function tends to substitute labour for capital, the scale of production is low and technology is typically traditional and labour intensive. Fleck (1994) observes that the contribution of informal sector activities to total non-agricultural employment in Mexico ranges from 26 to 38 percent depending on precisely how the informal sector is defined.

Informality is often a family or household endeavour geared towards urban survival. To survive under crisis conditions, Mexican households have been forced to become "flexible producers", sending growing numbers of women and children into precarious informal street jobs to sustain the household as a unit of basic survival in the city. Women's labour force participation rates have been forced upward, the total number of workers per household has increased and households have diversified their sources of income (De la Rocha 1991: 117-118).

One of the most striking aspects of the urban landscape in a developing country such as Mexico is the irony of juxtaposition (a feature of the postmodern city) between the "modern" and the "traditional". While developing countries have no monopoly on informal employment, the striking difference is in the scale of informal urban activity and its enormous variety. In Mexico City one sees a typical upscale North American enclosed shopping mall within sight of an open air periodic market with cultural roots in the indigenous *tianguis*; a bicycle borne knife sharpener grinds tools beside the service bays of a General Motors dealership; a vendor hawks pirated audio tapes outside a theatre playing a first-run Time-Warner film; a shrouded beggar holds out her hand on subway stairs, just steps away from a 200,000 peso automobile; and street bands play for pesos flung down from 10 storey apartment buildings. Thus one of the central features of informality is its inner heterogeneity brought about by a modernization process that, despite investment and the creation of some industrial employment, is unable to absorb the growing supply of urban

labour. A large proportion of the urban labour force has had to create its own employment using indigenous technologies and traditional marketing methods. Its motive (unlike micro-enterprise) is not profit but basic subsistence (Pérez Sánz and Menjívar Larín 1994). In essence this is a political economy theory of the informal sector. It emphasizes its nature as a household survival strategy for a "reserve army" of unemployed that has been squeezed out of a stalled capitalist industrialization process.

De Soto (1986) offers a novel neoclassical alternative that challenges orthodox political economy. He argues that excessive regulation imposed through the bloated bureaucracy of the "mercantilist" Latin American state confers the privilege of economic legitimacy on only a narrow elite in society. Informality is characterized by its clandestinity and illegitimacy. Informality is a popular response to institutionalized political and legal barriers that create a system of "economic apartheid" crafted to restrict access to employment and hence the most basic human needs. *"Cuando la legalidad es un privelegio al que sólo se accede mediante el poder económico y político, a las clases populares no les queda otra alternativa que la ilegalidad. Este es el origen del nacimiento de la economia informal...."* (De Soto 1986: xix). The "illegal pursuit of legal economic ends" is a rational economic outcome of the excessive and often corrupt regulation brought about by the *dirigiste* policies of the state. The informal self-employed "entrepreneur" becomes the hero of the piece, quite consistent with the "supply side economics" and newfound emphasis on the dynamism in the private sector that gained sway during the Reagan and Thatcher decade.

The three theoretical accounts very briefly sketched above anticipate and explain a trend towards increasing income inequality. The traditional economic modernization theories see inequality as an unavoidable consequence of development that will even out with the passage of time as developing countries follow in the growth path of the developed west. Current trends towards increasing income inequality in the developed west creates a real problem for this approach. Modernization theorists might have to reinterpret Kuznets' inverted "U" as an upright "N". The portrayal of Mexico's fiscal crisis as the root cause of profound social changes is a regional variant of the "global shift" theory linking a wide range of socioeconomic transitions to macroeconomic cycles such as Kondratiev waves (Dicken 1992). Theories of informal activities offer two dualities: one is the essence of the formal-informal dichotomy and second is the division in explanations between the political economy and the "New Right" approaches (Bromley 1990). However, both approaches envision an occupationally polarized economy which yields an unequally compensated society.

## DATA SOURCES AND LIMITATIONS

### Conceptualizing Income

There is no ideal measure of income for the purposes of measuring inequality at the urban scale (Bourne 1993). Individual employment earnings may be misleading without a sense of the number of dependents who must share it. Mexico's census of population (INEGI 1991) does not collect family income data and in any case Mexican family structures are changing rapidly, calling the relevance of income defined according to traditional family concepts into question. Households and their associated dwelling units are the "atomic units" of the urban social landscape thus households are the most logical unit of income aggregation and reporting for an assessment of spatial patterns of inequality. Household income is relevant as it captures the income of all household residents who typically pool their incomes in some way to pay for accommodation and food costs, the largest expenditure for most households. Household income is reported in the *Encuesta Nacional de Ingresos y Gastos de los Hogares* (ENIGH) at the national level, the best source of data for measuring income inequality. Due to changes in format, the ENIGH is only comparable for the years 1984, 1989, 1992, and 1994 (INEGI 1996: iii; De la Rocha and Latapí (1991:3). Unfortunately household income is not available at the scale of the *delegación/municipio* through the ENIGH.

The primary data source for microregional income data in Mexico is the decennial census and the only type of income data collected is employment income by employed persons which is tabulated and published for each *delegación* and *municipio*. Unfortunately, there were two major changes in the definition used for income reporting in 1990 which makes meaningful comparison between 1990 and preceding years impossible. In 1970 and 1980 monthly income was reported for the *población economicamente activa* which is defined as all persons over the age of 12 that were employed or looking for work *(essentially the labour force)*. In 1990, income data were reported for the *población*

*ocupada*, all persons over the age of 12 that performed an economic activity during the census week for any form of remuneration either monetary or payment in kind *(essentially the employed population)*. Second, the 1970 and 1980 income data were reported in different peso ranges (to account for inflation) while in 1990 they were reported in ranges defined as multiples of the *salario minimo* (minimum wage). For these reasons it is not possible to compare changes in the level of inequality between 1980 and 1990.

**Measuring Inequality**

To measure inequality within a region, two data vectors are required: one containing the level of income received and the other containing the number of observations for each level. Typically income data are grouped in the vector according to deciles or groups of contiguous income ranges with an open-ended category for the highest income group. The number of observations corresponds to the number of income reporting units, for present purposes, employed persons. Beginning in 1990, Mexico's census of population and housing began to collect income data according to a group of categories composed of multiples of the minimum wage (table 1). The advantage of this method is that the minimum salary inflates through time as the consumer price index rises, thus future census data will be approximately comparable to the 1990 census, no matter how much wages inflate.

The key problem in measuring inequality with primary income data collected on a categorical basis is that there is no direct measure of the total income earned by each group. This requires two different assumptions. For closed categories, the total earned by each group may be estimated as the median of the category, assuming that income is distributed symmetrically within each category. As there is ample evidence that income as a whole tends to have a positively skewed distribution, this assumption is dubious at best. Second, and more worrisome, is that there is no empirical basis for determining the total income earned by those in highest, open-ended income category. For example, Simmons and Kamikihara (1994) estimated the size of markets in Mexico City using an arbitrary scalar of two to calculate the average income within the highest income category. Simmons assumed that the average income of the small group earning greater than ten times the minimum wage was twenty times the minimum wage based simply upon long experience (Simmons 1996, personal communication). While the exactitude of this assumption has little impact on an assessment

**TABLE 1:** *Comparison of Mexican Income Data Classifications in Minimum Wage Units*

| **TOTAL HOUSEHOLD INCOME IN URBAN PLACES, 1994** | | | **TOTAL INCOME OF EMPLOYED POPULATION, MEXICO CITY METROPOLITAN AREA, 1990** | | |
|---|---|---|---|---|---|
| **Multiples of the Minumum Wage** | **Number of Households** | **Percent** | **Multiples of the Minumum Wage** | **Number Employed** | **Percent** |
| 0.00-0.50 | 14,998 | 0.10 | 0 | 54,300 | 1.09 |
| 0.51-1.00 | 220,115 | 1.50 | 0.01-0.50 | 197,200 | 3.96 |
| 1.01-1.50 | 339,013 | 2.30 | 0.51-0.99 | 664,200 | 13.35 |
| 1.51-2.00 | 667,517 | 4.53 | 1 | 38,900 | 0.78 |
| 2.01-3.00 | 2,049,606 | 13.92 | 1.01-2.00 | 2,076,300 | 41.73 |
| 3.01-4.00 | 2,172,692 | 14.76 | 2.01-3.00 | 784,100 | 15.76 |
| 4.01-5.00 | 1,651,186 | 11.22 | 3.01-5.00 | 533,000 | 10.71 |
| 5.01-6.00 | 1,418,083 | 9.63 | 5.01-10.00 | 307,500 | 6.18 |
| 6.01-7.00 | 1114048 | 7.57 | 10.01+ | 170,400 | 3.42 |
| 7.01-8.00 | 806,153 | 5.48 | No data | 149,600 | 3.01 |
| 8.01 + | 4,268,351 | 28.99 | ***Total*** | ***4,975,800*** | ***100.00*** |
| ***Total*** | ***14,721,762*** | ***100.00*** | | | |
| **Note:** *Income received in third quarter of 1994* | | | **Note:** *Income received in Reference Week, March 3-11, 1990* | | |
| **Source:** *INEGI, Encuesta Nacional de Ingresos y Gastos de los hogares 1984, 1989, 1992, 1994,* Table 7 | | | **Source:** *Censo General de Población y Vivienda, 1990,* Volume III, Table 36 | | |

of aggregate purchasing power due to the small size of this elite group, it is a fundamental flaw for any measure of income inequality.

A partial solution to this problem was to use the detailed household income data from the *Encuesta Nacional de Ingresos y Gastos de los Hogares* to calibrate average employment incomes for the census data (table 1). In effect, two new arbitrary, though slightly more plausible assumptions were introduced: that household income is distributed in the same way as personal incomes and that the national proportion in the highest category is the same as is found in each of the districts of the metropolitan zone. The calibration of the highest open-ended income category was complicated by the fact that the multiples of the minimum salary used in the *Encuesta Nacional de Ingresos y Gastos de los Hogares* differs from that used by the census.

**Conceptualizing Subregions for the Measurement of Intra-Urban Spatial Inequality: The *Delegación/ Municipio*, the *Colonia/ Barrio* and the *Area Geoestadistica Basica***

The measurement of spatial patterns of urban social geography is dependent on the nature of decennial census data collection and the protocols followed by central statistical reporting agencies to define subregions. The conclusions drawn in international comparative studies depend as much on the definition of census regions as they do on underlying differences in the social differentiation of space.

Mexico City's functional urban region and primary labour market, the *Area Metropolitana de la Ciudad de México* (MCM) covers all of the *Distrito Federal* (DF) and a horseshoe-shaped *zona metropolitana* that includes 27 *municipios* in the *Estado de México* (EM) lying to the west, north and east of the DF. The criteria for inclusion of EM *municipios* in the MCM include occupational characteristics of the population, accessability to the DF, and contiguity with the DF. The *Distrito Federal* is unique in Mexico because it is subdivided into 16 *Delegaciones* which have political jurisdiction over urban services such as policing, parks and recreation. Outside the DF, the primary political unit is the *municipio* which has more comprehensive political jurisdiction than the *delegación*. Full census data are provided for both *delegaciones* and *municipios*.

*Delegaciones* are further broken down into *colonias*, however, they have almost no political function and data are not collected at this scale. The *barrio* (neighbourhood) is used in casual parlance to indicate the bounds of a territorial sense of social community but does not, unfortunately, correspond to any data gathering unit. Thus, unlike Canadian and American census collection protocols with tracts which approximate neighbourhood units, there has historically been no empirical base for fine grained analysis of urban social trends in Mexico's great cities.

This changed with the 1990 *Censo General de Población y Vivienda* which inaugurated the *Area Geoestadistica Basica* (AGB) as a very small scale reporting unit which approximates the Enumeration Area in Canada and the United States. Unfortunately the AGB data were unsuitable for measuring inequality because income is reported for only three salary ranges (measured as multiples of the *salario minimo*) instead of the nine categories reported for districts[1]. Thus the empirical research is limited to the very coarse scale of analysis represented by the *delegación* and *municipio* (hereafter districts).

**NATIONAL SCALE INCOME DISTRIBUTION IN MEXICO**

By any measure and according to many estimates, Mexico has one of the most unequal income distributions anywhere in the world. In its *World Development Report 1980*, the World Bank described Mexico as having, "one of the worst profiles of income distribution of any nation on earth" (quoted in Barkin 1990: 80). In 1994 the richest 20 percent of the households appropriated 54.5 percent of the total household income (monetary and non-monetary) while the poorest quintile was left with 4.4 percent of total income (INEGI 1996, Table III.4).

Payment-in-kind is an important component of total household income in Mexico. In 1992 non-monetary income amounted to some 26.1 percent of total household income. It might be assumed that payment-in-kind is typically in the form of agricultural produce and is only significant in rural areas. In fact, non-monetary income accounted for some 27.5 percent of total household income in the MCM in 1992 according to the ENIGH (INEGI 1993). Non-monetary income includes the value of goods produced and consumed in the home, social security benefits (*prestaciones*

1 From a very pragmatic perspective, the AGB data is available only in CD-ROM format and it does not appear to be possible to download the data for further analysis using other software (Coll de Hurtado 1996 personal communication).

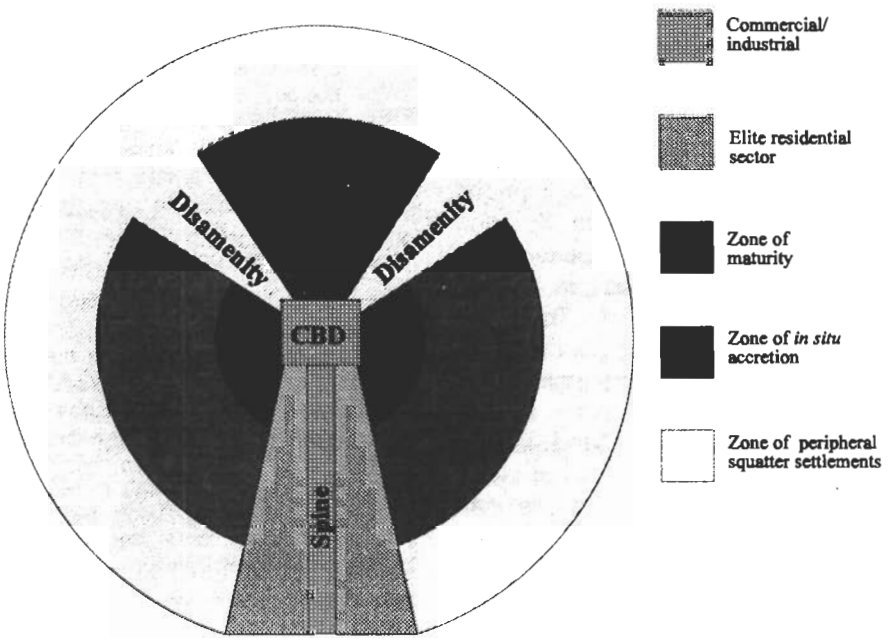
*sociales*), gifts of goods and services and the imputed value of rents and rent subsidies received by households. Figure 2 shows the Lorenz Curves for 1994 for each of total, monetary and non-monetary income. The distribution of total income is slightly closer to the diagonal of perfect equality than either monetary or non-monetary income taken individually. This family of curves is a good example of the ambiguity inherent in Lorenz curve analysis as the non-monetary and monetary curves intersect at the 82nd percentile, making it difficult to make a definitive conclusions about which, of monetary and non-monetary income, is more unequally distributed. When Lorenz curves intersect it is always possible to find two inequality measures that yield contradictory conclusions about their relative levels of inequality (Karoly 1992; Winship 1978). Thus the Gini coefficients presented in the 1994 ENIGH (INEGI 1996, Tables III.4-6, p. 43) are potentially misleading.

The Gini coefficients displayed in table 2 measure household monetary income from four separate ENIGH surveys for both urban and rural households using a consistent survey methodolgy throughout the period. Taken at face value, table 2 shows a trend of increasing inequality in total income from 1984 to 1994, however the increment between surveys is growing smaller suggesting that the upward trend is slowing as it reaches a peak. (The data are collected in the third quarter of each survey year thus the impact of the catastrophic 42 percent devaluation in the peso in the last 11 days of 1994 is not captured in these published data.)

Gini coefficients for urban areas show monotonic growth in the level of inequality of household monetary income from 1984 to 1994 in urban areas, however the rate of increase in inequality is also slowing. In rural areas inequality increased up to 1992 and then decreased very slightly in 1994. Urban areas had smaller Gini coefficients than rural areas in 1984 and 1989 but greater Gini coefficients in 1992 and 1994. Put another way, urban areas went from having less income inequality than rural areas in 1984 and 1989 to having more income inequality in 1992 and 1994.

These data seem to refute Kuznets in two ways. First, as a newly industrializing country (NIC), Mexico should be experiencing declining rather than growing inequality. And second, the differential between urban and

**FIGURE 2:** *Generalized Land Use and Income Structure of the Latin American City*




**SOURCE:** *Griffin and Ford, 1980*

**TABLE 2:** *Distribution of Household Income in Mexico: Urban and Rural Areas*

| | GINI COEFFICIENTS | | |
|---|---|---|---|
| | TOTAL | URBAN | RURAL |
| 1994 | 0.477 | 0.484 | 0.461 |
| 1992 | 0.475 | 0.474 | 0.469 |
| 1989 | 0.469 | 0.458 | 0.459 |
| 1984 | 0.429 | 0.420 | 0.454 |

**NOTE:** Income received in third quarter of year.
**SOURCE:** Raw data from INEGI, *Encuesta Nacional de Ingresos y Gastos de los hogares* 1984, 1989, 1992, and 1994

rural areas should be converging as urbanization slows while the data suggest just the opposite. Mexican cities have become the arena for growing inequality between rich and poor while the countryside becomes more equitable than the cities in 1994.

Two explanations are possible. First, the Kuznetsian assumptions that industrialization and urbanization would eventually bring about a decrease in income inequality is incorrect. Thus the world-wide trend towards increasing income inequality may be encountered in both mature industrial economies and in the "newly industrializing countries". On the other hand, the Mexican crisis school might argue that the past decade of economic dislocation has caused a reversal in the benefeits of industrialization for lower income groups thus Mexico is regressing along the inverted "U".

**National Scale Inequality and Neighbourhood Inequality: Linking Macro and Micro**

The question remains, how is the manifest wage inequality in the urban labour markets of both developed and developing cities articulated with spatial inequality? The standard explanation posits a three phase causal linkage between economic restructuring and a socially segregated urban geography :

1a. Deindustrialization causes the loss of manufacturing sector employment and the loss of middle income earners.

1b. The fast growing service sector is occupationally polarized into high paid primary occupations and low paid and insecure secondary forms of employment.

2. These processes result in a polarized social structure and decline of the hitherto dominant middle class.

3. The urban outcome of social polarization is a polarized socio-spatial structure: a growing segregation between the poorest and the richest districts and neighbourhoods of the city. In the context of "world cities" Friedmann (1995: 324) argues very simply: "Spatial polarization arises from class polarization". In a growing number of cities in the developed countries:

> there are two realities instead of one, which are spatially discrete and only have the name of the city and some public spaces...in common: a "city of despair and squalor" and a "city of hope and splendour", which can be some blocks or streets away from each other (van Kempen 1994: 997)

In her critique of this simple causal sequence van Kempen (1994: 1000-1001) questions the assumption that changes in the income and employment structure of the city have an immediate impact on the social-spatial structure of the city. Increasing social segregation and its corollary, that there is a direct relation between one's income and place of residence, assumes a direct and smooth linkage between social mobility and spatial mobility. In a Dutch context van Kempen identifies three factors that call this assumption into question. First, there is an increasing diversity in housing preferences and household composition in developed western societies. The traditional family type is declining in importance: while alternative lifestyles may lead to the gentrification of some older inner city neighbourhoods and extended immigrant families may occupy traditional single family dwellings in the suburbs. Second, European social housing policies often permit downwardly mobile lower income households to remain in good quality housing in neighbourhoods they otherwise might not be able to afford. Third, "restrained moving behaviour" may motivate upwardly mobile households to remain in lower income areas and increase the consumption of goods other than housing. Rent subsidies accruing to the incumbents of public or rent-controlled private housing create a market in which households cannot afford to move to lower quality housing. For all of these reasons, there is good reason to question the causal link between increasing inequality city-wide and a truly polarized social geography between high income and low income neighbourhoods. The growing social polarization measured at the macroscale may only be manifest as growing diversity and polarization *within* neighbourhoods at the microscale.

**THE GEOGRAPHY OF INCOME IN MEXICO CITY**

Notwithstanding its many critics, the Chicago school of human ecology characterized by the work of Park and Burgess (1925) has had a lasting legacy in contemporary urban social geography. The ecological metaphor of a community became the basic unit for exploring social differentiation in urban space. The community seems to be the logical unit for analysis at the intraurban scale because of its social homogeneity and the visible contrasts between neighbourhoods that were the essence and subject of the human ecology approach in North American cities of the 1920s. Walking to work was the norm for the working class in an age when the street car was still comparatively expensive, thus working class neighbourhoods developed within walking distance of the mill, the mine, or the factory and neighbourhoods such as Chicago's Packingtown reflected the narrow income range of

meatpacking plant workers.

In the planning literature, Clarence Perry (1929) developed the "neighbourhood concept" as the logical unit for urban development. A population of about 6,000 represented the maximum number of human acquaintanceships that could be accommodated in social space and its mile square size was dictated by the physical walking capacity of children on their way to neighbourhood schools and churches, the primary arenas of socialization. The neighbourhood thus conceived was the immutable result of human physiological limitations. And finally, there was a growing property development industry, an active housing market and a cultural predisposition to move in response to changes in social, age and family status. Thus neighbourhoods became more homogeneous with the increased mobility of both home owners and tenants seeking dwelling units and neighbourhoods that matched their precise needs and ability to pay.

There is reason to question the appropriateness of the homogeneous neighbourhood concept in Mexico City and perhaps more generally in the Latin American city. Griffin and Ford (1980: 403) assert that the prerequisites for the filtering down process, a vital component in the Burgess concentric ring theory, are not present in Latin American cities. There appears to be both more and less horizontal mobility depending on income levels and migration status. Casual observation suggests that the home-owning urban-born middle and upper class is relatively immobile as houses and land tend to stay in families for generations. The residential property market is weakly developed in relation to the United States or Canada, residential mortgages are costly and difficult to obtain and one sees few occupied homes for sale. Whether upwardly or downwardly mobile, incumbents tend to stay in place, upgrading housing *in situ* or enduring its gradual deterioration. The middle and lower middle class urban tenantry is similarly immobile as the effect of rent controls and numerous other public housing policies and subsidies make moving prohibitively expensive for long time tenants.

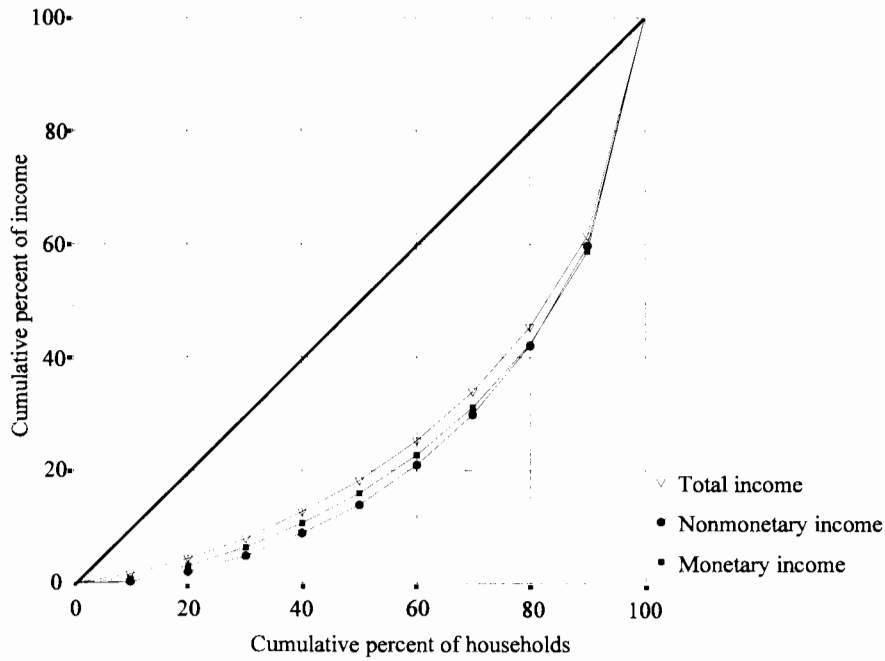
The lowest income groups include large numbers of rural out migrants. In the most common scenario they move from the countryside to live with friends or relatives, later moving to their own dwellings in a *colonia popular* or squatter settlement. Due to the insecurity of tenure in *colonia populares*, residents may be forced to move several times during the family life cycle. Thus Mexico City's lowest income groups appear to be more mobile than the middle and upper classes (Ward, 1976).

Areas with a large percentage of high income earners tend also to have large numbers of low income domestic service workers that live either within the household or on the roof tops of multi-storey apartment buildings to provide services as maids, cooks, porters, and chauffeurs. Paradoxically, the higher the income status, the greater the opportunities for low income domestic servants and informal sector workers. One sees very few organ grinders or windshield washers in low status districts of the city. High income areas are also low income areas and high social status areas actually have a bimodal income distribution. The internal income inequality is likely to be far greater in the more central high (and low) income areas than in the more peripheral low and middle income districts. And the homogeneity of high status neighbourhoods is likely to be far less than in low status neighbourhoods. This property of heteroscedasticity (unequal variance through the sample range) tends to invalidate any attempt to compare mean incomes levels by AGB or *delegación/municipio* as it conceals a considerable amount of intraregional variation.

Griffin and Ford (1980) offer a generalized graphic model of the major structural elements of the Latin American city (figure 3). The CBD corresponds to the central portion of *Delegación* Cuauhtémoc in Mexico City while the central spine is interpreted as the *Paseo de la Reforma*, the grand but relatively short ceremonial boulevard. It could also represent *Avenida de los Insurgentes*, a broad shopping arterial which runs both north and south of the CBD. In either case, the "elite residential sector" flanking the spine has suffered from functional change and the demolition of most of the grand downtown residences to make way for high rise office towers. The traditional rent and income gradient of the North American City is reversed in this model with the zone of maturity characterized by formerly affluent housing that has filtered down to middle class incumbents.

The zone of *in situ* accretion is characterized by a chaotic variety of good quality housing units adjacent to older squatter settlements of generally poor quality but displaying a wide variety of upgrading over the years depending on the age of the community. The zone of peripheral squatter settlements is portrayed as a vast ring of low income tracts of spontaneous urbanization, generally with no security of land tenure and low standards of construction, sanitation and infrastructure. However islands of

**FIGURE 3:** *Lorenz curves of household income in Mexico, 1994*




higher income households and higher quality housing may be located in pre-existing towns and villages which were later engulfed by urban expansion. Coyoacan and San Angel are fine examples of towns that were engulfed by the city by the turn of the century yet they survived and enhanced their elite residential character in an otherwise impoverished fringe. Many other examples exist in the present urban fringe though the level of income and housing quality is considerably lower.

Measures of high and low income were used to assess how well the Griffin and Ford model fits the distribution of income in 1990. The low income group was defined as those earning between 0.01 and 0.99 of the minimum wage. The size of the low income group was expressed as a percentage of the total population and then classified into four categories with 0-9, 10-19, 20-29, and 30+ percent of the employed population (figure 4). This classification scheme was selected because the percentage of the employed population earning exactly the minimum wage is extremely small (table 1) and the population employed but not receiving income was potentially deceiving as unpaid labourers typically permit another family member to earn an income substantially above zero. Only four equal-sized categories were used in an effort to highlight the broadest spatial income trends. High income was defined as greater than five times the minimum wage. A threefold classification scheme was used for high income earners as no district has more than 30 percent of its employed population earning greater than five times the minimum wage. Figure 5 displays the size of the high income population in each district.

The overwhelming impression from both of these maps is of great heterogeneity within districts. The poorest district, Milpa Alta, has 31 percent of the employed population earning less than the minimum wage in figure 4, while Tlahuac to its north-east has 24.5 percent. All of the other "low income" districts range from 20 percent to 22 percent earning less than the minimum wage. In short, the "low income" districts clearly have substantial numbers earning well above the minimum wage. Benito Juarez, the highest income *delegación* (figure 5) has only 25 percent of its population earning greater than five times the minimum wage; 75 percent earn less. Thus the high earning districts are far from being homogeneously high income.

The dominant spatial impression is of a combined radial and sectoral pattern of concentration. The low income districts seem to be concentrated in sectors running south and southwest from the CBD while most of the *municipios* around the periphery of the metropolitan area have relatively small numbers earning less than the minimum wage. The percent earning low incomes gradually increases towards the south with Milpa Alta as the southernmost fringe district of low income earners.

Turning to high income areas, the central Benito Juarez Delegación clearly has the greatest concentration of high income earners while most of the other *delegaciones* with significant percentages of the high income group are on the west side of the metropolitan zone. With the excep-

*FIGURE 4*

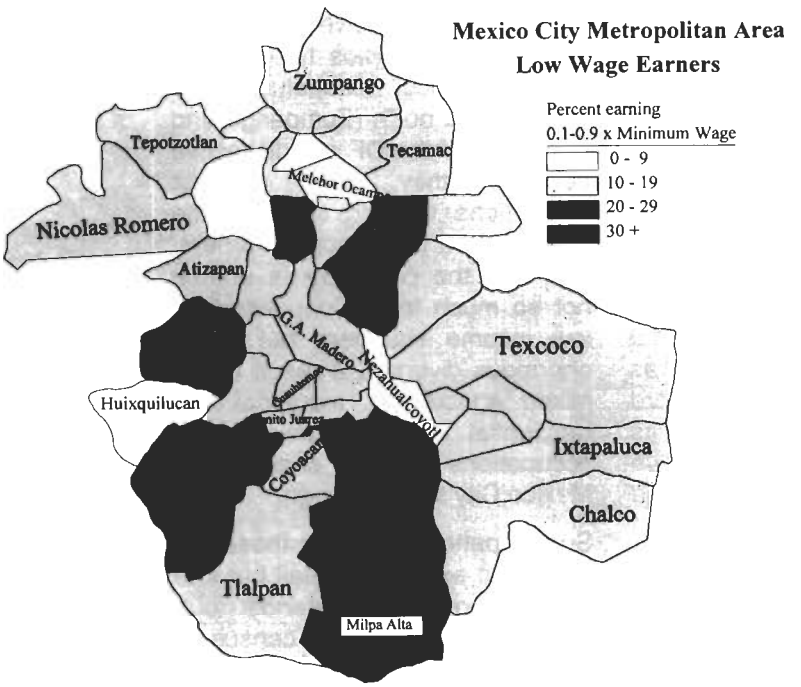
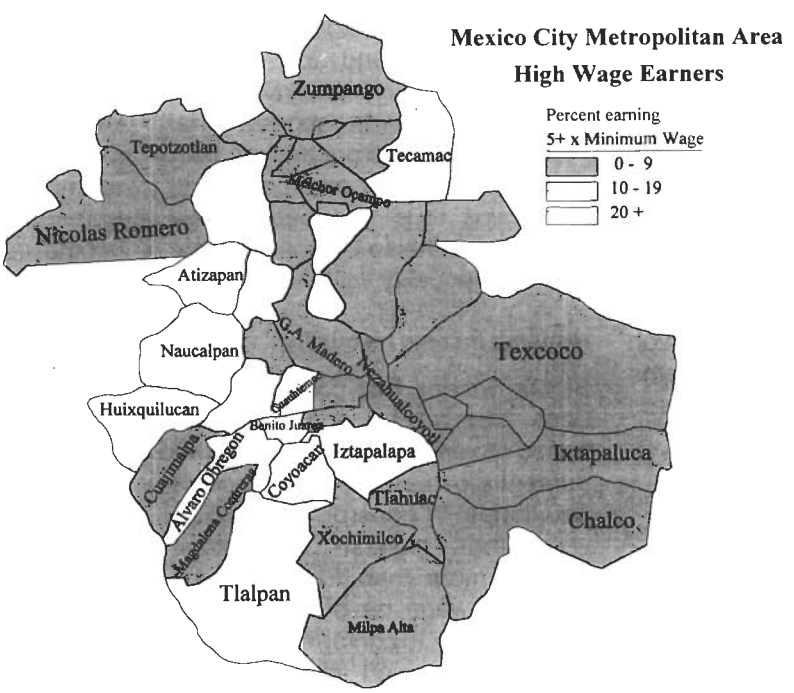



*FIGURE 5*



tion of Cuajimalpa de Morelos and La Magdalena Contreras in the southwest and Nicolas Romero and Tepotzotlan in the northwest, there is a great north-south lineament of districts on the west side of the metropolitan area with a disproportionate percentage of high income earners, consistent with Gilbert and Ward's (1985: 65) observations. The long narrow Alvaro Obregon *delegación* gives the appearance of an elite residential sector but it does not flank a major commercial spine as expected in the Griffin and Ford model and only 11.2 percent of its employed earn greater than five times the minimum wage. The great north-south swath through the western half of the MCM of some 14 districts with greater than 10 percent of the population earning greater than five times the minimum wage is also a little reminiscent of the elite residential sector but it too is not associated with a single arterial road way. The east side tends to have smaller proportions of high earners. This east-west income gradient is a common feature of many temperate zone cities in the northern hemisphere (which tend to have prevailing west winds), ostensibly because of the desirability of living upwind of urban pollution sources.

The shading scheme in figure 5 is arranged so that districts with high concentrations of high income earners should have the same shading pattern as in figure 4, assuming of course that districts are in fact homogeneously high income or low income. This is indeed the case for *delegaciones* such as Milpa Alta, the MCM's poorest *delegación*, Xochimilco, Iztapalapa, and Tlahuac, all in the south. The central sector of *delegaciones* extending north from Tlalpan through Coyoacan to Gustavo Madero have relatively small low income populations with 11.5 to 19 percent of the employed population earning less than the minimum wage. However many of the larger *municipios* lying to the east (Texcoco, Ixtapaluca and Chalco) and north (Zumpango and Tecamac) of the DF are distinctive because they have modest proportions of both high income earners and low income earners. In short, the periphery is unique not so much for its population of low income squatters but in its enormous diversity, a result of the mixed agricultural, industrial and residential land uses and occupations that characterize Mexico City's urban fringe.

Spatial patterns such as these are difficult to explain in detail but one central conclusion stands out. According to the 1990 census of population there is little evidence that the social geography of Mexico City was consistent with the concentricity suggested by Griffin and Ford's (1980) model of the Latin American City. There are, however, broad sectors dominated by both high and low income groups. Qualitative analysis of the two income maps suggest that there is great heterogeneity in both core *delegaciones* and peripheral *municipios* thus it appears likely that there will also be considerable income inequality within districts.

**Mapping Income Inequality**

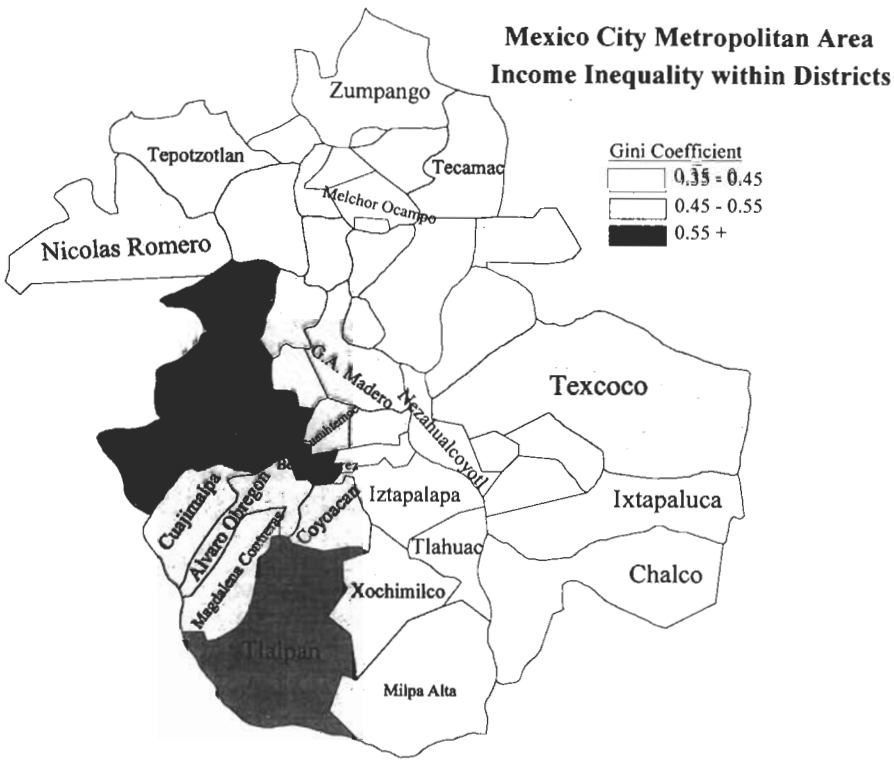
Figure 6 maps Gini coefficients for each *delegación* and *municipio* based on the cumulative percentage in each of nine income categories. In general, the districts with the highest percentage earning more than five times the minimum wage have the greatest inequality, conforming to expectations: high income areas are also low income areas. In accounting for the social polarization of large internationally connected cities, Sassen (1991) points to occupational changes in the non-basic, residentiary sector which is created by the demand for luxury goods and services to satisfy the consumption preferences and spending power of the new urban elite.

Two of Mexico City's most famous elite *delegaciones* are cases in point. Benito Juarez and Coyoacan have a high percentage in the high income ranges and they also have large low income populations. This is reflected in their relatively high Gini coefficients of 0.556 and 0.530 respectively.

A number of other middle to high income *municipios* with large disparities between high and low income earners are found on the western periphery: Naucalpan, Atizapan de Zaragoza, and Tlalpan. Huixquilucan, the most unequal district in the MCM, has a Gini coefficient of 0.624. The districts with the lowest Gini coefficients and lowest levels of inequality are Melchor Ocampo (0.372) well to the north of the DF and Tlahuac (0.388) in the south of the DF itself.

The districts with the lowest Gini coefficients tend to be found in a north-south band that generally corresponds to the newer lower income districts. For example, Nezahualcoyotl, the largest dormitory suburb in Mexico (Coll de Hurtado 1989: 428) grew quite rapidly between 1960 and 1980. It is in the lowest income category but has low levels of inequality, suggesting a considerable degree of homogeneity in this low income suburb. Chalco is another example of a recently developed area though with higher incomes than Nezahualcoyotl. Nevertheless it has the same low level of inequality. The income structure of long peripheral *municipios* such as Chalco can be quite deceiving. The city side of the *municipio* tends

*FIGURE 6*




to be composed of dense spontaneously settled *colonias populares* while the eastern side remains dominantly horticultural (Coll de Hurtado and Sanchez-Salazar 1995). Xochimilco is a fringe *delegación* famous for its *chinampas*, in which flood irrigation is used for intensive agriculture. In many of the urban fringe districts of the MCM, attempts to measure "urban income inequality" are actually capturing rural-urban contrasts in average income and income distribution.

## CONCLUSIONS

The geography of income and income inequality in the Mexico City Metropolitan Area appears as chaotic and heterogeneous as the broader Mexican space-economy of which it is a part. State-of-the-art high technology exists along side traditional technologies with roots to pre-Columbian cultures. Wealthy professionals of the comprador class and Mexico's growing technocracy enjoy a typically North American lifestyle alongside indigenous peoples with strong cultural roots in traditional Meso America. But the contrasts are extremely fine grained and there is great variety within all of Mexico City's districts. There are no homogeneously low income or high income *delegaciones*. In part this is simply an artifact of the very coarse scale of the data analysis; districts such as Alvaro Obregon or Coyoacan have enormous populations of over 600,000. Larger districts have greater variance simply because they cover more territory.

But there is also a striking interdependence of high and low income groups. The high income areas are also low income areas due to the demand for domestic and personal services by high income earners. Thus the delegaciones with the greatest proportion of high income earners also tend to have the highest levels of inequality. The true level of income and income inequality on the poor urban margin is extraordinarily difficult to assess due the presence of a large rural population in huge fringe *municipios* such as Chalco and Milpa Alta.

The original goal of the paper was to chart trends in urban income inequality within and between districts. This proved impossible using published data sources due to definitional changes between census years. One challenge for future research would be to use unpublished historical census data to reconstruct comparable income

categories and adjust income figures for the 1970 and 1980 census to reflect the difference between employed persons and the economically active. Another direction for future research is to use the *area geoestadistica basica* (AGB) data in a finer grained study. For example, the AGBs might be meaningfully combined to create a neighbourhood or *colonia* scale of data aggregation with more income categories than are presently provided at the level of the AGB. In both cases, future research on the distribution of income requires close cooperation between INEGI and geographic researchers. Only in this way can the distribution of income be better understood in Mexico City.

## BIBLIOGRAPHY


- Banco de México 1968 *La Distribución del Ingreso en México* Fondo de Cultura Económica
- Baer, Werner 1986 "Growth with inequality: The cases of Brazil and Mexico" *Latin American Research Review* 21(2):197-207
- Barkin, David 1990 *Distorted Development: Mexico in the World Economy* Boulder: Westview Press
- Bergsman, Joel 1980 "Income Distribution and Poverty in Mexico" World Bank Staff Working Paper No. 395, Washington, D.C.
- Bourne, L.S. 1993 "Close together and worlds apart: An analysis of changes in the ecology of income in Canadian cities" *Urban Studies* 30: 1293-1317
- Bromley, Ray 1990 "A new path to development? The significance and impact of Hernando De Soto's ideas on underdevelopment, production and reproduction" Economic Geography 66:328-348
- Calderon, Lourdes Godinez and Adrian Guillermo Aguilar 1989 "Desigualdad del ingreso y expansión metropolitana en México" Vivienda 14(2): 138-157
- Coll de Hurtado, Atlantida 1983 "La crise mexicaine: Un essai d'explication historique et géographique" Annales de Géographie 512: 414-432
- Coll de Hurtado, Atlantida 1989 "L'espace rural face à l'espace urbain: une bataille perdue au centre du Mexique" Annales de Géographie 548: 422-433
- Coll de Hurtado Atlantida and Maria Teresa Sanchez-Salazar 1995 "Mexico City: A geographical approach" Latin American Studies 14: 63-70
- Davis, Stephen J. 1992 "Cross-Country Patterns of Change in Relative Wages" Working Paper 4085 National Bureau of Economic Research, Cambridge, Mass.
- De Soto, Hernando 1986 El Otro Sendero: La Revolución Informal México: Editorial Diana
- Dicken, Peter 1992 Global Shift: The Internationalization of Economic Activity New York: Guilford
- De la Rocha, Mercedes González and Agustín Escobar Latapí 1991 Social Responses to Mexico's Economic Crisis of the 1980s San Diego: Center of U.S.-Mexican Studies, University of California
- Latapí, Agustín Escobar and Bryan R. Roberts 1991 "Urban stratification, the middle classes, and economic change in Mexico". In Mercedes González de la Rocha and Agustín Escobar Latapí (eds) Social Responses to Mexico's Economic Crisis of the 1980s 91-113 San Diego: Center of U.S.-Mexican Studies, University of California
- Fan, Cindy C. and Emilio Casetti 1994 "The spatial and temporal dynamics of US regional income inequality, 1950-1989" Annals of Regional Science 28:177-196
- Fieleke, Norman 1994 "Is global competition making the poor even poorer?" New England Economic Review (November-December): 3-16
- Fleck, Constance 1994 "Employment and Unemployment in Mexico's Labor Force" Monthly Labour Review 117 (November):3-31
- Friedmann, J. 1995 'The world city hypothesis' In P.L. Knox and P.J. Taylor (eds) World Cities in a World System 317-331 Cambridge: Cambridge University Press
- Garcia-Leon F. 1972 "Regional and Family Contrasts in the Mexican Economy" International Geography 1972 22nd International Geography Congress, Montreal, Canada, 551-552. Toronto: University of Toronto Press
- Gilbert, Alan 1994 "Third world cities: Poverty, employment, gender roles and the environment during a time of restructuring" Urban Studies 31(4/5):605-633
- Gilbert, Alan and Peter M. Ward 1985 Housing, the State and the Poor: Policy and Practice in Three Latin American Cities Cambridge: Cambridge University Press

- González de la Rocha, Mercedes 1991 "Family well-being, food consumption, and survival strategies during Mexico's economic crisis" In Mercedes González de la Rocha and Agustín Escobar Latapí (eds) Social Responses to Mexico's Economic Crisis of the 1980s 115-128 San Diego: Center of U.S.-Mexican Studies, University of California
- Griffin, Ernst and Larry Ford 1980 "A model of Latin American city structure" Geographical Review 70:297-342
- INEGI 1991 XI Censo General de Población y Vivienda, 1990 Mexico: Instituto Nacional de Estadistica Geografia y Informatica
- INEGI 1993 Encuesta Nacional de Ingresos y Gastos de los Hogares 1992 Mexico: Instituto Nacional de Estadistica Geografia y Informatica
- INEGI 1996 Encuesta Nacional de Ingresos y Gastos de los Hogares, 1994 Mexico: Instituto Nacional de Estadistica Geografia y Informatica
- Karoly, L.A. 1992 "Changes in the distribution of individual earnings in the United States: 1967-1986" The Review of Economics and Statistics 74:107-15
- Kuznets, Simon 1955 "Economic Growth and Income Inequality" The American Economic Review 45(1):1-28
- Langer, Ana, Rafael Lozano and José Luis Bobadilla 1991 "Effects of Mexico's economic crisis on the health of women and children" In Mercedes González de la Rocha and Agustín Escobar Latapí (eds) Social Responses to Mexico's Economic Crisis of the 1980s 195-219 San Diego: Center of U.S.-Mexican Studies, University of California
- Lustig, Nora 1992 Mexico: The Remaking of an Economy Washington, D.C.: The Brookings Institution
- OECD 1993 "Earnings Inequality: Changes in the 1980s" Employment Outlook Organization for Economic Co-Operation and Development
- Park, R.E. and E.W. Burgess 1925 The City Chicago: The University of Chicago Press
- Pérez Sánz, J.P. and R. Menjívar Larín 1994 "Central American men and women in the urban informal sector" Journal of Latin American Studies 26: 431-447
- Perry, Clarence 1929 Neighborhood and Community Planning: The Neighborhood Unit New York: Regional Plan of New York
- Pred, A.R. 1977 City Systems in Advanced Economies London: Hutchinson
- Rostow, Walter W. 1960 The Stages of Economic Growth: A Non Communist Manifesto Cambridge: University of Cambridge Press
- Sassen, Saskia 1991 The Global City: New York, London, Tokyo (Princeton: Princeton University Press)
- Simmons, Jim and Shizue Kamikihara 1994 "The commercial structure of Mexico City" Geografía y Desarrollo II(11):5-20.
- van Kempen, Eva T. 1994 "The dual city and the poor: Social polarization, social segregation and life chances" Urban Studies 31(7):995-1015
- Vilas, Carlos M. 1995 "Economic restructuring, neoliberal reforms and the working class in Latin America". In Sandor Habelsky and Richard Harris (eds) Capital Power and Inequality in Latin America 137-163 Boulder: Westview Press
- Ward, Peter M. 1976 "Intra-City migration to squatter settlements in Mexico City" Geoforum 7:369-382
- Williamson J.G. 1965 "Regional inequality and the process of national development: A description of the patterns" Economic Development and Cultural Change 13(4 Part 2):3-45
- Winship, C. 1978 "The desirability of using the index of dissimilarity or any adjustment of it for measuring segregation" Social Forces 57: 717-720