Centro de Estudios Espinosa Yglesias

DOCUMENTO DE TRABAJO

No. 010/2015

Septiembre

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Labor cohorts and Socioeconomic Background as determinants of Occupational Attainment over the course of Mexico's Economic Development[♣]

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September 2015

Abstract

Drawing on two waves of the ESRU Survey on Social Mobility in Mexico 2006 and 20011 (EMOVI), I examine labor cohort differences in occupational status attainment to evaluate the extent to which Mexico's occupational achievement dynamics are shaped by Mexico's industrialization experience. The results reflect decreasingly negative average inter-cohort differences in the status of the first occupation. Status differences are present, both in the estimation of unmediated cohort effects, and net of controls for socioeconomic background. Controlling for respondent's education eliminates inter-cohort differences in status of the first occupation. I find no evidence of inter-cohort distinctions in the occupational status of respondent's current occupation. Instead, these effects seem channeled through the status of the first occupation. These results highlight that education has mediated and mitigated the role of historical timing in individual-level occupational attainment at the onset of adults' employment careers. More generally, these findings provide suggestive evidence of the similarity of Mexico's occupational attainment history with that of other developing countries.

Keywords: Labor Cohort, Socioeconomic Background, Occupational Attainment.

[♣] Forthcoming in Vélez-Grajales, Huerta-Wong and Campos-Vázquez (eds.) (2015). *México, ¿el motor inmóvil?* Mexico: The Espinosa Yglesias Research Centre.

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Introduction

Research in social stratification increasingly recognizes the importance of institutional variation in accounting for inter-country differences in social mobility (DiPrete, et al., 1997; Beller and Hout, 2006; Birkelund, 2006; Breen, 2008; Hout, 2010). However, the implications of this "institutional turn" have not been fully extended to improve our understanding of stratification in developing countries. Huge strides have been made in documenting how countries that experienced the greater part of their economic development in the post-war era possess distinct social stratification dynamics relative to Western European countries and the United States, but the impact on social stratification of the institutional transformation undergone by developing countries remains an open question (Ishida and Miwa, 2011; Torche and Costa, 2010; Park, 2004). This question gains particular salience in the aftermath of a lengthy period of neoliberal policy and structural adjustment in Latin America and in other developing regions across the world. While a full examination of the relationship between development and inter-country differences in social stratification is beyond the scope of my analysis, I evaluate whether the development process itself, as exemplified by Mexico's industrialization during the post-war era, impacts the occupational status of employed heads of households.

I exploit the presence of distinct epochs over the course of Mexico's economic history to analyze the extent to which timing of entry into the work force affects differences in occupational status. Labor cohorts can be conceived as a set of individuals that experienced a common set of labor market characteristics upon entering the work force. These characteristics refer to a composite of macro-economic conditions reflective of distinct periods during the course of economic development, periods that plausibly delimit long-term status achievement prospects.

I find that compositional differences across cohorts in average education and in social background characteristics undergird observed cohort differences in the status of the first occupation. However, I do not find significant direct effects of labor cohort membership on the status of the current occupation. Findings from Mexico's occupational achievement process highlight the distinctiveness of attainment under conditions of industrial change.

Like many developing countries, Mexico has undergone the transition from a predominantly agrarian to an industrial economy at a faster rate than early industrializing nations (Márquez, 2010). Mexico also experienced the demographic transition within a shorter time frame (Berry, et al., 2000; Watkins, 1987). Mexico's governments have invested heavily in education, thereby engendering large intergenerational differences in educational attainment, but without the requisite expansion in labor market institutions to absorb increasingly more educated populations; a pattern typical of many developing countries (Buchman and Hannum, 2001). For these various reasons, Mexico's industrialization can speak more broadly to the interplay between industrial change, timing of labor market entry, and social stratification in developing countries

Social Stratification, Mobility, and Status Achievement

Social stratification in its broadest sense refers to a set of positions in a hierarchy of rewards that is highly persistent over time (Duncan, 1968). Within the field of social stratification research, the study of social mobility can be distinguished from the study of occupational achievement. Mobility research has emphasized the analysis of contingency tables that array respondents on the basis of information about their social origin and about their social destination. Generally, social origins are measured with information about the occupation and education of the father, and destinations are measured with information about the respondent's occupation, at one or more points in time (Hout, 1983; Blau and Duncan, 1967).

Occupational achievement refers to the examination of the determinants of "differential occupational success" of individuals as they move within a given hierarchy of positions (Blau and Duncan, 1967: 9). Empirically, the analysis of occupational achievement involves examining the individual-level determinants of location in the structure of occupations, it self conceived as ranked on the basis of some indicator for the quality of the jobs comprising specific occupations. In the context of this paper, I focus on occupational status. Following conventional sociological analysis, I conceptualize occupational status as a general measure of the relative standing of occupations abstracted from substantive attributes. Occupational status is interpretable as a proxy for the bundle of resources that accompany a specific type of job. It is a measure of the quality of an occupation (Hauser and Warren, 1997).

Early researchers hypothesized that industrial change would engender similar patterns of social stratification across societies. Whether this proposition took the form of a gradual evolutionary process as was found in modernization theory, or whether it was envisioned as a threshold shift toward more openness, early research and theory posited a strong convergence thesis (Parsons, 1953; Lipset and Zetterberg, 1959). Industrialization was expected to generate strong pressures toward institutional homogeneity, and thereby declining differences between countries in the occupational achievement process. The functional necessities of modern economies were presupposed to heighten the increasing importance of education and work-force experience for occupational status. Social inequalities in industrializing societies were expected to converge to those of developed societies both in shape as well as in the causes affecting the relative positioning of individuals in the distribution of occupational status.

Contemporary stratification research rejects the convergence thesis. When examining social mobility, stratification research has documented for industrial countries the same degree of exchange mobility. That is, industrialized countries reflect very similar patterns of association between origins and destinations. However, industrialized countries reflect marked differences in overall mobility because of persistent differences in the degree of dissimilarity between the distribution of occupational origins and the distribution of

occupational destinations, a key determinant of what is known as structural mobility (Hout, 2010; Hout, 1989: 56-57; Featherman, Jones, and Hauser, 1975).

This finding has led to the suggestion that market societies engender very similar patterns of exchange mobility, but that overall differences among them result from the role played by state action and policy in mitigating or exacerbating inequality, which in turn impacts structural mobility (Erikson, Goldthorpe, and Portocarrero, 2010; Hout and Diprete, 2006). Consistent with this picture of inter-country differences in stratification, some research has found a link between type of welfare regime and differences in the coupling of origins and destinations regarding both, occupational status, and education (Beller, and Hout, 2006). The conception of social mobility and of status achievement that has emerged emphasizes the role of "history" (Hout, 2010), wherein history refers to the importance of persistent differences over time in how countries configure the relationship between education, training, labor force participation, and occupational status.

Taking as a point of departure the plausibility of such "historical" constraints in the process of social stratification, in what follows I attempt to tease out the presence of labor cohort effects on occupational status. Research into occupational achievement typically attempts to disentangle the effects of respondents' human capital from the effects of respondent's social background. The respondent's human capital is analyzed by examining the impact of education and work experience on status, and social background is analyzed by including covariates for the education and occupation of the parents. I follow a similar strategy and incorporate in my analysis these covariates. Additionally, when the dependent variable is the occupational status of the current occupation, an additional variable for the status of the first occupation constitutes a component of the respondent's own labor market achievements (Sewell, and Hauser, 1975; Hauser and Featherman, 1977).

Change in Mexico's Economy and Labor Markets

The Mexican economy during the post-war era has undergone various changes that generally typify the process of modernization: Consistent urban growth (Balán, Browning, and Jelin, 1973), industrial deepening, and a decline in agricultural employment with a simultaneous diversification of employment in services and manufacturing. Many of these processes are checkered by sharp discontinuities induced in large part by the change from a an economy that industrialized under high tariffs and with a large degree of state control over key economic sectors, to one burdened by (a) increased indebtedness and (b) the ensuing devaluation, restructuring, and opening to external investment and trade.

For example, as is well known, the twenty-year period between 1950 and 1970 saw sustained improvements in a range of macro-economic measures. During the period known as "desarrollo estabilizador", GDP growth rates were at a sustained average of 5.6 percent in the decade of the 1950s, and of 7.1 percent during the subsequent decade (Bulmer-Thomas, 1995 [2003]). Such growth rates in aggregate economic activity translated into improvements in

standards of living and were in part driven by improvements in labor productivity, as well as by a dramatic re-composition in the structure of the economy (Hoffman and Mulder, 1998). Throughout this period, Mexico's government relied on a variety of licensing requirements to stimulate purchase of domestically made capital inputs. Tariff protections and content requirements led to a high degree of articulation across economic sectors (Ross, 1993: 1-4). These policies, coupled with the already highly regionalized attributes of Mexico's economy, stimulated growth in manufacturing employment that was itself regionalized, and stimulated rural-urban internal migration.

A second period in Mexico's industrialization began in the early 1970s and arguably lasted until the 1982 debt crisis (Moreno-Brid and Ros, 2004; Pastor and Wise, 1998). A series of macro-economic crises induced a sequence of boom and bust cycles, which in part were accelerated by increased deficit spending and by the discovery in the 1970s of new oil reserves. A checkered growth process was marked by sputtering economic activity, increasing indebtedness, and high inflation. Under President Echeverría, a large number of firms across Mexico's economic sectors were nationalized. This plausibly implied increased bureaucratization of firm structures, and thereby a more formalized hiring process at least in large firms across Mexico's economy. This period is ostensibly a transitional one as Mexico underwent an increasing shift towards a more liberalized economy, with more constrained fiscal and monetary policy even as it retained various protectionist schemes.

A third period in Mexico's economic development can be said to unfold after the 1982 debt crisis. The 1980s and early 1990s up to the signing and enactment of the North America Free Trade Agreement (NAFTA) were characterized by a transition away from a highly regulated and coordinated market-state relationship. Policy makers slowly shifted the role of the state in the economy through a reduction in the tariff and protection structures used during the preceding thirty years, away from direct financial support for various sectors, and away from the large scope of government ownership. Initially macroeconomic conditions became highly unstable in spite of the implementation of structural adjustment policies and various attempts at controlling currency appreciation through structured devaluations (Ross, 1993). GDP growth became highly erratic and inflation became difficult to control. GDP growth rates were negative on average during the 1980s in spite of an average rate of 8.6 percent in the first two years of the decade (Cárdenas and Malo, 2010; Pastor and Wise, 1998). Inflation in consumer prices galloped at the rate of 69.8 percent annually. For example, inflation rose to 98 percent in 1982, declined somewhat in subsequent years, but rose as high as 152 percent in 1987 (Pastor and Wise, 1998: 45). Additionally, during the late 1980s, employment in manufacturing seems to have contracted even as new establishments were increasing (Ross, 1993). This period witnessed a shift to the maquila industry as the source of growth in manufacturing employment, but within the context of a *de facto* tiered system of industrial policy, wherein consumer goods were nested in traditional import substitution schemes; a second sub-sector comprising electronics, automobiles, and computer parts were oriented toward exports but received

import protection and the use of import licenses to restrict the entry of comparable products. Finally the key source of manufacturing growth and of industrial exports were the maquila manufacturing plants which through the late 1990s reflected positive net growth, but remained a source of low-end employment with few linkages to the domestic economy (Weintraub, 2006; Ross, 1993).

The administration of President Carlos Salinas and the subsequent signing of NAFTA mark the beginning of a distinctive fourth historical moment in Mexico's economic development. Macroeconomic and industrial policy shifted in the direction of trade-liberalization and a concomitant focus on export-based growth. Although these changes had been initiated under de la Madrid's administration, under Salinas this policy shift becomes fully institutionalized (Centeno, 1997). By 1990 imports from Mexico to the U.S had increased to 17 billion dollars from approximately 3 billion in the 1950s (Kay, 2011). This suggests a dramatic re-configuration of the internal linkages that had articulated the Mexican economy during the preceding decades. Macroeconomic conditions and the shift to an export-oriented development policy framework ushered in a re-composition of the relative importance of economic sectors in the span of twenty years.

Based on data from Mexico's decennial census, Table 1 highlights the changes in employment by sector across these four broad periods in the post-war era. As late as the 1970s agriculture comprised 41.14 percent of all employment. By 1990 its share had declined to 23.13 percent. By the 1990s, services and manufacturing had each risen from a quarter of all employed to 38.71 and 32.37 percent respectively. During the last decade of the 20th century the service sector has continued to increase its share of the work force, and in spite of the emphasis placed by government policy on export manufacturing, the share of employment in this sector has remained stable at or near 30 percent (Cooney, 2001).

At least two dynamics underpinned these broad shifts in employment, particularly in manufacturing: First a shift in the size of establishments toward larger and more formal employment while small and micro-sized firms declined; second, although the maquila industry experienced a decline of 20 percent in employment between 2000 and 2002, it has increased its share of employment in manufacture over time; a trend that has lasted until at least the early years of the 21st century (Contreras, 2006; Weintraub, 2006).

Table 2 summarizes Mexico census data on occupational employment and documents changes in its re-distribution for the period between 1960 and 2000 that are consistent with the changes across industrial sectors. In general, the occupational structure reflects a high degree of persistence during the 1950-1970 period with employment among agricultural labor hovering near 40 percent of the civilian work force. The share of the work force subsumed under plant, assembly, and machinery operators has risen from 6.67 percent of the work force in the 1970s to 10.19 in 2000, likely a reflection of the growth of maquila manufacturing throughout this period.

Table 1: Percent Employed by Economic Sector; Mexico (1960–2000)

Economic Sector	1960	1970	1980[3]	1990	1995	2000
Services	22.49	25.74	---	38.71	44.94	45.15
Manufacture, Construction, and Transport[1]	23.09	24.70	---	32.37	28.32	32.70
Agriculture & mining[2]	48.89	41.14	---	23.13	22.36	16.44
Public Administration	3.14	3.25	---	3.86	4.07	3.99
Other	2.27	5.18	---	1.93	0.30	1.72
Total	99.88	100.00	---	100.00	100.00	100.00

Sample: Civilians, 14 or older.
1. Includes utilities.
2. Includes fishing, forestry, and mining.
3: Data not available (Never published).
Source: Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 6.1 [Machine-readable database]. Minneapolis: University of Minnesota, 2011.

Table 2: Percent Employed by Occupation; Mexico (1960-2000)

Occupation	1960	1970	1980[1]	1990	1995	2000
Professionals, semi-professionals	6.26	8.48	---	13.62	17.06	13.64
Clerks & Service Workers	17.10	18.40	---	23.27	31.58	26.65
Agricultural Workers	45.50	38.65	---	22.09	21.22	15.86
Craft & Trade Workers	15.70	16.59	---	18.30	14.16	18.16
Plant, Assembly, Machinery operators	5.68	6.67	---	10.51	7.76	10.19
Elementary Occupations & other n.e.c.	9.06	10.90	---	12.02	8.22	15.32

Sample: Civilians, 14 or older.
Original Source: Mexico decennial census.

Data source: Source: Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 6.1 [Machine-readable database]. Minneapolis: University of Minnesota, 2011.
1. Data not available (Never published).

Macroeconomic and sector-specific changes have implied concomitant transformations of Mexico's labor markets, and by implication, of its internal opportunity structure. In terms of the composition and re-composition of the occupational structure, its dynamics seems distinctly associated to the move away from import substitution model of industrialization (ISI) prevalent during the 1950s to the low trade-barrier, smaller state economy of the post 1980s period typical of the neoliberal age (Parrado, 2005). During the 1950-70 period, the

share of wage earners increased from approximately 50 percent to 63 percent and self-employment declined from 37 to 23 percent (Moreno-Brid and Ross, 2009). Employment in urban informality rose from 13 percent in 1950 to approximately 18 percent by 1970 (Moreno-Brid and Ross, 2009).

These structural changes partially reflect a re-composition of the educational attributes of adults that supply new inflows into Mexico's labor force. Average years of schooling have doubled for adults born in the 1960s relative to those born in the 1920s (citations in Torche, 2010; Binder and Woodruff, 2002). Thus, mobility dynamics in Mexico do not just represent changes in available occupational openings, but reflect as well improvements in educational attainment across generations (de Hoyos, Martínez de la Calle, and Székely, 2010).

These various transformations in Mexico's economy and their interaction with significant changes in academic achievement suggest the possibility of inter-cohort differentiation in status attainment (Cárdenas y Malo, 2010; Torche, 2010). Below I report 5-year labor cohort estimates on status achievement for respondent's first occupation and for subsequent achievement as proxied by the reported current occupation.

Data, Variables, and Methods

My analysis focuses on adult heads of household 25 to 64 years of age who were not enrolled in school, and who reported being employed in 2006 and in 2011 during the week prior to the survey interview.[1] I draw two samples one from each year of the ESRU Survey on Social Mobility in Mexico (EMOVI). Each wave of the EMOVI is a cross-section of adults drawn probabilistically from a stratified, multistage sampling frame with extensive information on respondents' education, socioeconomic background, and various labor market characteristics such as first and current occupation, size and type of the employing firm or business, and a slew of demographic characteristics regarding the respondent's family and that of his/her parents. I examine separately by survey year OLS estimates of cohort differences in occupational status attainment.

The International Socioeconomic Index (ISEI) and Occupational Status

I rely on the International Socio-economic Index (ISEI) as the dependent variable in the analysis of respondent's first and current occupation. The reported occupation of the father when the respondent was 14 has also been coded in terms of the ISEI. The index provides an ordinal measure of rank that renders meaningful any comparison of the relative positioning of the substantive attributes of occupations. Ranging from 1 to 100 and based on the combined average of education and expected earnings, the ISEI should be interpreted as a

[1] Employed status refers to all adults reporting some form of work activity: remunerated, non-remunerated and partial or part-time employment regardless of hours worked, and those reporting temporary absence or on vacation. Excluded from this definition are full time students, those reporting actively seeking work, retired and/or out of the work force.

percentage difference in the overall quality of occupations (Ganzeboom, et al., 1992). Empirically, the close coupling of perceptions of social prestige with the levels of education and income that characterize specific professions and jobs lends credibility to the ISEI (Blau and Duncan, 1967; Hauser and Warren, 1997).

Since the ISEI has been found to be a highly stable proxy for the rank of occupations over time and across societies it is considered the generally accepted measure in the comparative stratification literature in sociology (Ganzeboom and Treiman, 2003; Ganzeboom et al., 1992; Treiman and Ganzeboom, 1990). This property of the ISEI facilitates the comparative analysis of occupational stratification in developed and developing countries and justifies its use in the examination of occupational stratification in Mexico.[2]

I have re-coded respondents' occupational codes as classified under the Mexican Occupational Code (CMO for its abbreviation in Spanish) at the four-digit level of disaggregation in terms of the ISEI so as to obtain occupation status rankings that are consistent across both the 2006 and 2011 surveys. In cases where a CMO code had been reported in the data without a detailed ISCO-88 equivalent, an attempt was made to retain such observations in the analysis by imputing a more general ISEI code. Additional cases wherein no CMO code was available but a respondent reported being employed have been assigned the mean ISEI.[3] A dummy variable is included in all regressions to account for the possible effect of the presence of the latter cases.[4]

Labor Cohorts: The historical moment of entry into the labor market refers to a set of characteristics shaped by the industrial and occupational composition of a given country at a given point in time. From the standpoint of those that decide to enter the work force, labor market conditions are exogenous: the differentiation of employment opportunities across economic sectors, the distribution of openings for a given set of skills and education, as well as the salaries of such occupations. The general empirical question is then to what extent do those conditions delimit a set of experiences that define each labor cohort historically and whether such experiences are separable from social

[2] For detailed discussions of the substantive meaning of socio-economic indexes and of methodological issues surrounding their construction see various articles in Grusky, 2001.

[3] For the 2011 data set, the total number of heads of household was 5468. Out of this group 4233 had an identifiable CMO code. It should be noted, that of the latter sub-total, 26 observations reported not actively working on the day of the interview but were non the less included in all analyses. Two types of imputations had to be carried out to bring into the analysis observations that reported actively working but had no specifiable ISCO code. First, those observations that had a defined CMO code but for which the latter had no corresponding detailed ISCO-88 code, were subsumed under more general ISCO-88 categories. This affected 34 heads of household already subsumed under the aforementioned 4233. A second imputation involved assigning the average ISEI value to those heads of households who reported actively working but for which no CMO code was specified in the data. This imputation affected 25 observations.

[4] Additional restrictions to those observations with non-missing information on ego's and father's education eliminated an additional 488 observations. This left a total of 3,770 heads of households. Final restrictions to those without missing information on number of siblings and without missing information on adults when respondent was 14 induced further reductions in the final sample for analysis to 3722. The actual number of heads of households that fall in the analysis with an average imputed current ISEI code was 22. The average for these observations as imputed was an ISEI value of 36.

background conditions, from education, and from labor market experience in the determination of occupational status. To the extent that labor cohort effects remain significant in multivariate models, it can be shown that historical timing of entry into the work force constitutes a distinctive axis of stratification separable from adscriptive, social background, and achievement criteria.

Generally, research on social stratification has confronted difficulties in disentangling changes in status achievement due to historical circumstances confronted by first entrants into the work force from changes in the social structure itself. In the case of the two waves of the EMOVI, respondents were asked to report both the year of entry into their first main occupation and the year of entry into the current occupation. This provides a major advantage in providing an actual measure of the year of entry into the work force when compared to studies that rely on an imputed date of entry.[5]

Based on this information, I have constructed 14 five-year labor cohorts that range from the 1949-51 cohort—the oldest observed cohort in 2006—to the 2007-11 cohort—the youngest labor cohort in 2011. Excepting these aforementioned cohorts, all other labor cohorts are observed twice. Although this codification of the cohort variable does not correspond exactly to the historical periods of Mexico's economic development, it allows for great flexibility in the examination of inter-cohort differences at consistently measured experience levels across time periods. The limited number of data waves and their proximity in time also implies that inter-cohort differences in the determination of the status of the current occupation do not decouple sufficiently the effect of experience from pure cohort effects. This is a result of the fact that adults belonging to early labor market entrants have had more extensive participation in the work force, than more recent entrants. Disentangling pure labor cohort effects on current occupational status will have to wait for subsequent waves of the EMOVI. Thus, the results below have to be read with this caution in mind. This ambiguity is not present for those models that examine the status of respondents' first occupation since in such an instance we observe a time series of labor market entry points (Blau and Duncan, 1967: 107).

In constructing labor cohort measures, a variety of issues had to be addressed. First, respondents providing information on their current job did not necessarily provide information on the year or age of entry into their first job but did so for the current job. To mitigate the potential bias and reduction in the number of observations induced by these cases I relied on a hot-deck approach for imputing an appropriate year of entry into the first occupation.[6] Secondly, some observations reported an earlier year of entry into the current occupation than the year of entry reported for the first occupation. For such cases, I attributed an initial year of entry based on observations reporting "positive"

[5] In 2011, for observations that reported being in the work force but which had missing information on the year in which first entering the work force, I imputed the year of entry based on the birth year and the number of years of education.

[6] This approach largely used by the U.S. census to mitigate bias induced by missing information, involves attributing the year reported by those with comparable years of education and comparable age and educational degree who reported a defined first occupation.

differences between the year of entry for the first occupation and that for the current one, again conditioning on levels of education and single age of respondent.

Education and Social Background Characteristics

Respondent education is coded as a categorical variable with 4 levels: primary or less, secondary schooling, preparatory or college, and professional degrees. To capture social background effects, I included father's education and occupational status when the respondent was 14 years of age. Father's education is coded the same as respondent's educational attainment. Father's ISEI is entered as a deviation from an ISEI score of 30, the average ISEI score in 2006. This facilitates interpretation of the baseline category across models. I have chosen to include respondents who lacked information on father's occupation. This was mostly salient in the 2011 data. To the extent that such observations have background characteristics that may be systematically associated with a specific location in the distribution of the ISEI score, their exclusion potentially induces worse bias than keeping them in the sample. I have assigned the average score on father's ISEI, and included a dummy variable to control for their presence in the equations.[7]

The number of siblings has been found to be inversely correlated to occupational status (Knigge et al., 2014; Blake, 1992). Since preliminary analysis showed no significant effect from number of siblings or from membership in two-parent families, the final models reported below exclude such covariates (results not reported).[8]

In examining the relationship between labor cohorts and status achievement I rely on OLS equations estimated separately by wave of the EMOVI. While this approach make strong assumptions about the linearity of the relationship between social background and respondent's occupational status, it affords a high degree of clarity in analysis and in the exposition of inter-cohort differences.[9]

Labor Cohorts and First Occupation

Table 3 reports estimates from OLS (ordinary least squares) regressions of the expected ISEI score for the first occupation. All cohort estimates are interpretable as net differences in the ISEI score of the first occupation relative to the average

[7] This affects 540 observations.

[8] I examined models that included number of siblings as a control to capture aspects of family composition in the household where the respondent was raised. The number of siblings enters into all regressions as a categorical variable with four levels: 3 siblings or less (includes no siblings), 4 to 6 siblings, 7-9, and 10 or more. A dummy variable coded 0 or 1 accounts for the presence of 2 parents in the family or household of the respondent when the respondent was 14 years of age. These covariates were never significant across various estimations reported below.

[9] All estimations reported herein should be interpreted as average effects at a national level. Further analysis beyond the scope of the present article may deepen our understanding of region-specific effects that impinge on occupational status.

of the youngest adult heads of household in Mexico's work force in a given year.[10] The youngest cohorts refer to those that in 2006 and in 2011 reported respectively entering the work force between 2002 and 2006, and between 2007 and 2011. Since estimates in table 3 pertain to the status of the first occupation, net intra-year differences across cohorts are not confounded with the potential effect of work experience. The table segments the results into three panels.

The first panel in table 3 (panel a) reports separately by year, cohort fixed effects in the absence of controls for education or socioeconomic characteristics. Unmediated relative cohort differences rise monotonically until approximately the 1977-81 cohort.[11] This is a "raw cohort" effect present in both 2006 and in 2011. While statistically significant, the substantive significance of these inter-cohort arrays is ambiguous.[12] Since differences in status attainment in the ISEI scale should only be considered substantively important if five points or larger, differences between cohorts from 1962-66 through the 1977-81 are not substantively significant as they remain within less than five points. For example, the 1962-66 cohort has a relative position that is -8.86 relative to the youngest respondents, and the 1977-81 had a corresponding relative score of -6.1 points. This pattern suggests a substantive plateau in raw ISEI scores of first occupations since the midst of the "desarrollo estabilizador" until the beginning of Miguel de la Madrid's presidency. For labor cohorts that have entered Mexico's labor force since the early 1980s, raw cohort differences in attainment are not distinct, suggesting that, in the absence of compositional distinctions due to social background or education, labor cohorts since the 1980s, would have entered the work force on average at equivalently ranked occupations. More generally, labor cohorts that entered between the early 1960s and the late 1970s, while not substantively different among each other, seem to comprise a distinct group in that their entry points into Mexico's labor market remained substantively below that of labor cohorts that entered Mexico's work force from 1982 to the present.

In panel b of table 3, I include covariates for father's education and for father's occupational status when the respondent was 14 years of age. This can be considered a "cohort and social background model." The inclusion of controls for socioeconomic background compresses raw inter-cohort differences. These results highlight the extent to which differences over cohort arrays in the status of the first occupation reflect underlying compositional distinctions in the socioeconomic background of head of household respondents. As in panel a, relative differences are consistently below the average ISEI score of the

[10] The average score of the youngest adults in each year was 36 in the ISEI score in 2006 and correspondingly 37.8 in 2011. This difference is not significant (a t-value of .527). The absence of significant differences in the average score facilitates the examination of the cohort series in panels a and b of table 3.

[11] While the intra-cohort period shift seems large for this cohort (from a relative difference of -6.105 in 2006 to a relative difference of -1.899 in 2011), it is not significantly different from zero (see t-values reported in table 4).

[12] In all discussion of results I purposely ignore mentioning or analyzing cohorts between 1949 and 1956. The magnitude of the covariates for these cohorts, along with sign shifts, suggests a high degree of selectivity among respondents.

youngest cohort, but rise monotonically and are statistically significant starting with the 1957-61 through the 1972-76 cohort. Nonetheless, even after including controls for social background, a substantive plateau in the status first occupations persists for heads of households who entered Mexico's work force during the 1960s and 1970s. More recent labor market—those that entered since 1977—remain non-distinct in the status of the first occupation even after accounting for differences in social background.

The inclusion of educational attainment into the "background and cohort" models for 2006 and for 2011 renders non-significant all observed inter-cohort distinctions in the ISEI score of the first occupation.[13] Panel c of table 3 reports these estimates. In this instance the baseline category refers to the youngest heads of households in the work force in each year with a completed high school education and whose father had also completed a high school education. These results suggest the powerful mediating role of education in ISEI score differences due to differential timing of entry into the work force. This suggests that in spite of dramatic transformations of Mexico's industrial and occupational structure that plausibly altered the distribution of occupational status over the second half of the twentieth century, comparably situated entrants in terms of social background and education have not differed in entry-level attainment. The presence of similar patterns for two distinct years of data provides strong evidence for the importance of compositional differences in education and social background in accounting for cohort differences in ISEI scores for the first occupation.

Any determinate conclusions would be weakened by period differences in within-cohort first status that come about due to year-specific differences in the survey samples. To evaluate this possibility, table 4, reports t-values that might indicate a significant systematic pattern of period differences in the results reported in table 3. No such differences are present, thereby strengthening the substantive interpretation.

[13] I examined the strength of association between labor cohort and educational attainment using Goodman and Kruskal's gamma; a measure of rank-order correlation. A gamma value of zero reflects no association, and an absolute value of 1 reflects perfect association. Gamma values for the aforementioned variables were .24 and .27 for the 2006 and 2011 subsamples respectively, thus reflecting that education and labor cohort variables capture non-redundant dimensions of information (Goodman and Kruskal, 1954).

Table 3: OLS Regression: Occupational status of first occupation; Mexico, 2006-2011. Adult Heads of Household; 25-64; baseline category: least experienced employed adults

Dependent Variable: International Socioeconomic Index (ISEI)						
	Panel (a)		Panel (b)		Panel (c)	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
	2006	2011	2006	2011	2006	2011
Respondent's Education (h.s. reference group)[1]						
Primary					-2.601***	-2.955***
					(0.417)	(0.740)
Preparatory					3.506***	1.743**
					(0.663)	(0.879)
Superior (professional)					15.886***	17.508***
					(1.115)	(1.461)
Deviation from father's ISEI in 2006			0.361***	0.284***	0.209***	0.136**
			(0.034)	(0.055)	(0.033)	(0.048)
Father's Education (h.s. omitted)						
Primary			-3.719**	-7.592***	-0.235	-2.927*
			(1.188)	(1.857)	(1.084)	(1.523)
Preparatory			0.433	3.335	-1.588	-0.088
			(2.054)	(2.935)	(1.941)	(2.670)
Superior (professional)			-1.482	-1.197	-3.671**	-4.318
			(1.943)	(4.164)	(1.816)	(3.687)
Labor Cohort						
1949-51	-13.171***		-8.415**		-3.449	
	(2.726)		(2.815)		(2.390)	
1952-56	-12.218***	-18.301***	-7.719**	-19.708***	-2.204	-12.017**
	(2.755)	(3.223)	(2.849)	(5.202)	(2.397)	(4.497)
1957-61	-10.546***	-12.459***	-7.443**	-8.407***	-2.154	-2.085
	(2.765)	(2.086)	(2.843)	(1.843)	(2.397)	(1.913)
1962-66	-8.861**	-6.168**	-6.282**	-3.905*	-2.168	-0.821
	(2.789)	(2.641)	(2.864)	(2.195)	(2.404)	(2.912)
1967-71	-7.753**	-7.488**	-5.244*	-5.462**	-1.637	0.045
	(2.789)	(2.708)	(2.861)	(2.352)	(2.423)	(2.351)
1972-76	-6.831**	-5.478**	-4.434	-3.828*	-1.395	-1.489
	(2.790)	(2.368)	(2.863)	(2.031)	(2.405)	(2.221)
1977-81	-6.105**	-1.899	-3.743	-0.365	-1.101	0.763
	(2.801)	(2.338)	(2.879)	(2.157)	(2.395)	(1.994)
1982-86	-4.378	-0.977	-2.554	-0.143	-0.127	2.429
	(2.813)	(3.114)	(2.877)	(2.555)	(2.390)	(2.315)
1987-91	-5.512**	-1.255	-4.034	-0.871	-1.326	0.791
	(2.804)	(2.178)	(2.873)	(1.899)	(2.411)	(1.827)
1992-96	-3.327	-0.959	-1.816	-1.142	0.870	0.879
	(2.867)	(2.179)	(2.926)	(1.896)	(2.440)	(1.791)
1997-01	-0.036	-2.784	-0.505	-3.270*	0.624	-0.825
	(2.989)	(2.113)	(3.000)	(1.846)	(2.510)	(1.856)
2002-06	---	3.032	---	1.790	---	3.034
		(2.897)		(2.578)		(2.198)
2007-11		---		----		---
Constant	36.099***	37.846***	37.245***	42.481***	29.914***	33.772***
	(2.724)	(1.888)	(2.934)	(2.386)	(2.527)	(2.130)
N	5297	3722	5,297	3,722	5297	3722
R-squared	0.048	0.029	0.169	0.154	0.350	0.386

Significance levels: *** p<0.001, ** p<0.05, * p<0.1; Robust standard errors in parentheses.

[1] h.s. refers to high school education.

Table 4: Significance tests of intra-cohort period shifts in status of first occupation.
Based on coefficients from table 3

	Panel A	Panel B	Panel C
Labor Cohorts	2011 - 2006	2011 - 2006	2011 - 2006
1949-51	--	--	--
1952-56	-1.435	**-2.021**	**-1.926**
1957-61	-0.552	-0.285	0.022
1962-66	0.701	0.659	0.357
1967-71	0.068	-0.059	0.498
1972-76	0.370	0.173	-0.029
1977-81	1.153	0.939	0.598
1982-86	0.810	0.627	0.768
1987-91	1.199	0.918	0.700
1992-96	0.658	0.193	0.003
1997-01	-0.751	-0.785	-0.464
2002-06	--	--	--
2007-2011	--	--	--
Baseline category	0.527	1.385	1.167

Bold terms indicate significance.

Labor Cohorts and Current Occupation

Table 5 reports a similar analysis to that presented in table 3 but focused on current occupational status. Table 5 segments results into 4 panels. The first panel reports "raw" cohort fixed effects separately by year. Panels b, c, and d,[14] incorporate respectively, the role of father's education and father's occupation to

[14] The fourth panel in table 5 accounts for the role of status of first occupation in the determination of current attainment. In the data for 2006 for every unit improvement in the status of the first job across all historical periods in Mexico's labor market implies a .33 percent point change on average status of the current occupation. This is considerably higher than historical results for the United States. For example, Hauser and Featherman report a .25 point change in Duncan's SEI scale of respondent's current occupation for every one unit change in SEI in respondent's first job (Hauser and Featherman, 1977: 32). The impact of the ISEI score of the first occupation on subsequent status rises to .68 in the 20011 data, approximately an increase larger than 100 percent in the magnitude of the covariate. This seems unusual and perhaps a function of the coding process used to adjudicate a status measure for the first occupation for the 2011 data. Since the inclusion of this covariate does not alter significantly the results presented in table 3 or in panels a through c, I have refrained from any further examination of this issue. Namely an inherent loop in the questionnaire for 2011 allowing interviewers to code current occupation as the first if the respondent indicated that these were the same, may have induced an artificially high correlation between the two for 2011.

capture socioeconomic background, the main effects of respondent's education, and finally a term for the ISEI score of respondent's first occupation (included as a deviation from 36; the mean ISEI score for first job in 2006).[15] As in table 3, the base-line category refers to the youngest labor cohort in each year. Inter-cohort differences in current occupational status have to be examined across equivalent thresholds in labor market experience.[16] With only two years of data most cohorts may be observed at most twice and can be meaningfully compared to only one other cohort at a comparable level of experience.[17] Since more years of data would be needed to examine cohort-experience profiles in status over the entirety of a cohort's labor market trajectory, my conclusions are mostly conjectural.

Panel a of table 5 suggests that cohort-experience profiles in status for the main occupation are not significant. To minimize any possible doubts due to life-course timing, I concentrate on labor cohorts with at least 15 years in the work force and at most 25, namely those observed at the peak of their labor market careers. These cohorts refer to the1982-86 cohort in 2006, the 1987-1991 cohort, and the 1992-96 cohort in 2011. The corresponding inter-cohort differences net of experience are not significant. A formal evaluation is presented in table 6. The inclusion in panels b through d respectively of social background covariates, respondent's education, and respondent's first occupational status eliminate any cross-sectional significance in cohort effects and by implication, any inter-cohort differences at comparable levels of experience.

Education and Occupational Attainment

Returns to education gauged by differences in the ISEI score of the first occupation, reflect no substantive difference in the intervening five-year period between 2006 and 2011. For example, focusing first on panel c of table 3, a high school degree (equals finished preparatory) only improved by 3.5 points in 2006, and correspondingly by 1.74 points in 2011, the status of the first occupation relative to those who finished only secondary school (the baseline category: equal to 9th grade). Adults with professional degrees entered the labor force at medium status positions in both years: 15.8 and at 17.5 points above those with a secondary education in 2006 and in 2011 respectively. The results reported in panel c of table 5 concerning current occupational status highlight again no inter-period differences in returns to education, net of differences in social background.

[15] In panels b, through d, the reference category is further specified to those whose father had an average level of status attainment (ISEI score of 30 in 2006), whose father had completed a high school education. Where relevant (panels c and d) the respondent's reference education was a completed high school education, and who had the average status level in the first occupation (only relevant in panel d).

[16] Cross-sectional estimates of labor cohort differences in the ISEI score of current occupation are confounded with differences in levels of work experience.

[17] The 1949-51 labor cohort can only be observed in 2006 with 55 to 57 years of experience, and the 2007-2011 cohort can only be observed in 2011 with 0 to 4 years of experience.

Socio-economic background at the onset of labor market entry

Socioeconomic background factors operate indirectly through the educational attainment of respondents. The inclusion of covariates for respondent's education not only renders insignificant the direct effects of labor cohort membership, but also turns social background covariates into factors of marginal importance. For example, in the estimates for 2006 as well as in those for 2011 reported in panel c of table 3, father's education does not have any substantively important direct effect on the ISEI score of the first occupation after including respondent's education. Father's education seems to impact the status of respondent's first occupation through the occupational status of the father.[18] This becomes evident in Panel b, which reports the limited effect of father's occupational status, even without controlling for respondent's education. For example in 2006 the net effect of father's occupational status was .361. A substantive increase of five points over the average in father's occupational status does not induce a substantively meaningful jump in the status of the first occupation. The corresponding coefficient for 2011 is even smaller (.284). A comparison of results in table 5 suggests a similar pattern relative to the status of the current occupation. This finding is consistent with the dynamics of attainment found in the United States where the greater magnitude of background effects is indirect (Hauser and Featherman, 1977; Hout, 1988).

[18] Models (not reported) that examined the simultaneous role of father's education and labor cohort without any other covariates show that there is a significant association, but the former covariate loses significance upon the inclusion of father's occupational status (as reported in table 3).

Table 5: OLS Regression: Occupational status of current occupation; Mexico, 2006-2011.
Adult heads of household, 25-64; baseline category: least experienced employed adults
Dependent variable: ISEI score

	Panel (a)		Panel (b)		Panel (c)		Panel (d)	
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	2006	2011	2006	2011	2006	2011	2006	2011
Deviation From ISEI (ego's ISEI-first, 2006)							0.336***	0.638***
							(0.027)	(0.034)
Respondent's Education (h.s. reference group)[1]								
Primary					-3.433***	-4.675***	-2.558***	-2.787***
					(0.484)	(0.724)	(0.483)	(0.600)
Preparatory					4.171***	1.424	2.991***	0.315
					(0.663)	(0.885)	(0.661)	(0.723)
Superior (professional)					22.047***	17.917***	16.703***	6.746***
					(1.129)	(1.526)	(1.215)	(1.290)
Deviation from father's ISEI in 2006			0.350***	0.304***	0.144***	0.140**	0.074**	0.053
			(0.037)	(0.054)	(0.034)	(0.046)	(0.032)	(0.039)
Father's Education (h.s. omitted)								
Primary			-5.430***	-6.532***	-0.752	-1.362	-0.673	0.502
			(1.296)	(1.948)	(1.111)	(1.662)	(1.079)	(1.136)
Preparatory			0.122	7.845**	-2.682	4.355	-2.148	4.427**
			(2.409)	(3.183)	(2.092)	(2.988)	(1.961)	(2.188)
Superior (professional)			-0.739	4.613	-3.930*	1.621	-2.695	4.418*
			(2.301)	(4.063)	(2.020)	(3.492)	(1.972)	(2.295)
Labor Cohort								
1949-51	·12.096**		-6.785		0.027		1.188	
	(4.002)		(4.177)		(3.647)		(3.322)	
1952-56	·12.203***	-9.127***	-7.154**	-9.756***	0.394	-1.704	1.135	5.959**
	(2.974)	(2.258)	(3.192)	(2.873)	(2.699)	(2.489)	(2.193)	(1.853)
1957-61	-8.926**	-6.763**	-5.343*	-2.500	1.913	4.995	2.637	6.321**
	(2.988)	(3.078)	(3.222)	(3.042)	(2.697)	(3.043)	(2.182)	(2.634)
1962-66	-6.154**	-6.898**	-3.177	-4.123	2.476	-0.412	3.205	0.025
	(3.012)	(3.174)	(3.228)	(2.554)	(2.705)	(2.980)	(2.175)	(1.494)
1967-71	-5.549*	-8.227***	-2.604	-5.725**	2.404	0.543	2.955	0.508
	(2.996)	(2.496)	(3.200)	(2.226)	(2.682)	(2.113)	(2.147)	(1.690)
1972-76	-5.193*	-2.964	-2.387	-1.202	1.853	1.609	2.322	2.550
	(2.977)	(2.521)	(3.196)	(2.265)	(2.658)	(2.209)	(2.132)	(1.553)
1977-81	-4.818	-0.992	-2.031	0.656	1.659	2.003	2.029	1.509
	(2.954)	(2.349)	(3.184)	(2.196)	(2.637)	(2.110)	(2.100)	(1.203)
1982-86	-3.122	0.679	-0.875	1.533	2.567	4.353**	2.610	2.790**
	(2.965)	(3.148)	(3.186)	(2.498)	(2.642)	(2.220)	(2.101)	(1.092)
1987-91	-3.544	0.722	-1.738	0.963	2.116	2.764	2.562	2.241**
	(2.972)	(2.266)	(3.178)	(2.005)	(2.635)	(1.924)	(2.093)	(1.029)
1992-96	-2.312	-0.131	-0.533	-0.378	3.305	1.701	3.012	1.134
	(3.010)	(2.144)	(3.225)	(1.931)	(2.666)	(1.900)	(2.125)	(1.002)
1997-01	0.460	-0.842	0.077	-1.391	1.866	1.181	1.656	1.704*
	(3.125)	(2.232)	(3.282)	(1.929)	(2.704)	(1.912)	(2.152)	(0.953)
2002-06	---	3.831	----	2.436	---	3.665	---	1.709*
		(2.907)		(2.651)		(2.231)		(1.019)
2007-11		---		----		---		---
Constant	38.543***	37.896***	40.781***	41.404***	30.732***	32.663***	30.761***	30.256***
	(2.874)	(1.901)	(3.245)	(2.500)	(2.763)	(2.247)	(2.255)	(1.260)
N	5297	3722	5,297	3,722	5297	3722	5297	3722
R-squared	0.033	0.025	0.147	0.18	0.423	0.431	0.482	0.662

Significance levels: *** p<0.001, ** p<0.05, * p<0.1; Robust standard errors in parentheses;
[1] h.s. refers to high school education.

Table 6: Significance tests for inter-cohort differences in the status of current occupation at comparable experience levels. Based on coefficients from tabl2, (panel a).

Experience		Labor Cohorts												
		1949-51	1952-56	1957-61	1962-66	1967-71	1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11
55-plus	1952-56	0.646	---											
51-54	1957-61		1.271	---										
45-49	1962-66			0.465	---									
41-44	1967-71				-0.530	---								
35-39	1972-76					0.660	---							
34-31	1977-81						1.108	---						
25-29	1982-86							1.273	---					
21-24	1987-91								1.030	---				
15-19	1992-96									0.931	---			
10-14	1997-01										0.398	---		
5-9	2002-06											0.900	---	
0-4	2007-11												0.000	---

Reference Category (least experienced)

t-values for significant difference for row cohort vs. column cohort.

Discussion and Conclusion

The main findings of the foregoing analysis are: 1) Statistically significant unmediated labor cohort differences in the status of the first occupation increase monotonically until approximately the labor cohort of 1977-81. However, substantive inter-cohort differences suggest only three broad cohort groups: Labor market entrants belonging to cohorts that entered prior to the early 1960s, second, those who entered in cohorts ranging from the 1962-66 to 1977-81 cohort, and finally, those who have entered Mexico's work force since the early 1980s; 2) These patterns persist net of socioeconomic background characteristics; 3) After additionally controlling for the respondent's education, the pattern of inter-cohort differences loses substantive and statistical significance, implying no conditional differentiation between cohorts in first attainment during the last 50 years in Mexico's labor markets; 4) No significant inter-cohort differences—unmediated or otherwise—on the occupational status of the current occupation; 5) Constant status returns to education between 2006 and 2011; 6) Net of respondent's education, I find no direct effect of socioeconomic background characteristics on either the status of the first occupation or the status of the current occupation.

The emergence in the data of three substantively distinct sets of labor cohorts, the last of which covers entrants since the 1980s—as discussed under findings 1 and 2 above—might reflect the absence or slowness of status upgrading in the occupational structure since the 1980s, in spite of a general trend toward higher levels of education in Mexico during the post-war era. Additionally, finding 5 on the lack of distinct differences between 2006 and 2011 in status returns to education is consistent with the image of a reconfigured occupational structure that has not experienced substantive upgrading in a generation. Earlier research has documented the key importance of the 1980s and of Mexico's neoliberal turn for mobility declines and constraints (Zenteno and Solís, 2006; Cortés, and Escobar 2005; Parrado, 2005). The lack of cohort differences in status upon controlling for education of respondent, as subsumed under findings 3 and 4, may result from how labor cohorts are differentiated by education and social background (Toro, 2014). This is also consistent with earlier research in mobility in Mexico that has documented inherent discontinuous shifts in the institutional opportunities in education and in labor markets over the course of Mexico's development.

My findings extend the current understanding social mobility in the post-1980s period in Mexico in at least two ways. First, the highly constrained mobility structure that seems to have become more so since the 1980s persists and seems to extend to the occupational opportunities of labor market entrants in the 21st century. Improved educational attainment may have mitigated differences between labor cohorts in average attainment. However, the lack of cohort effects net of education, and social background across both first and current occupation suggests that educational peers from comparable social backgrounds, but different historical cohorts have started their careers through non-distinct locations in the occupational structure. Secondly, finding 6 suggests that

occupational attainment in Mexico is in large measure a function of the differential success of families in enhancing the labor market opportunities of their children. To maximize their children's opportunities in the work force, families plausibly deploy cultural and economic resources that further their children's educational attainment and through this, the status of the first job. Improved educational attainment may have mitigated differences between labor cohorts in average attainment, but the absence of cohort effects net of the combined effect of education and background factors suggests that families are deploying increasingly more resources only to keep their children in place relative to entrants from prior labor market cohorts.

The results from Mexico speak more broadly to the distinctiveness of mobility regimes in developing countries. Developing countries such as Mexico, with highly restrictive mobility regimes but with large amounts of absolute change in total mobility during the early phases of industrialization had high status rents captured by those with high levels of education. The implementation of economic liberalization may have induced even higher status rents in the occupational structure for the highly educated, at the same time that it reduced possibilities for upgrading of the occupational structure by eliminating a variety of non-competitive mid-status jobs in manufacturing. While this process seems not too dissimilar to that in the United States and Europe, for those countries mid-status jobs in services such as education and health have partially compensated the loss of industrial occupations (Levy, 1999). It is less clear that this reconfiguration has taken place in Mexico or in other developing countries for that matter. While market liberalization may induce gains in aggregate efficiency by re-orienting factor inputs to their most efficient use, this gauge of its effectiveness does not capture the profound negative externalities in terms of social mobility and attainment that have ensued from its implementation.

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