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# Intergenerational Mobility Patterns for Schooling, Occupation and Household Wealth: The Case of Mexico[♣]

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## Abstract

This paper presents estimates of intergenerational schooling, occupational and household wealth mobility for Mexico. We use the EMOVI-2011, a nationally representative survey with retrospective questions that capture adult children and parental information on schooling, employment and assets for a sample of men and women between 25 and 64 years old. We studied mobility patterns across generations (respondents ages 25-30, 31-41, 42-52, and 53-64), for different population groups and for different percentiles of the outcome distributions. We found that individuals have experienced upward intergenerational absolute mobility for the three outcomes. Results concerning relative mobility differ by outcome. Intergenerational relative schooling mobility increased steadily over the years for every subgroup of the population. Estimates within each cohort suggest that relative mobility is roughly constant along the distribution of completed grades of schooling. Intergenerational relative occupational mobility increases with the age of the individual, except for individuals with an indigenous origin. The level of mobility differs notably at different points of the distribution. Individuals' occupational choice is more dependent on their fathers' occupation at the top end of the distribution. Intergenerational household wealth mobility is slightly higher when old as well. That is, wealth of older generations is less dependent on their families' wealth. The same pattern is observed for the vulnerable groups: women, individuals who were raised in rural areas and indigenous people.

Keywords: Intergenerational Mobility, Schooling, Occupation, Household Wealth.

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## 1. Introduction

Intergenerational social mobility concerns the movements of individuals or groups of individuals up or down the socioeconomic scale across generations. Measurements of these movements provide information on how the society is changing over time. Absolute mobility, which refers to the total change in socioeconomic indicators such as income, can be used as a measure of growth. Relative mobility relates to changes in the position in the socioeconomic distribution. The link between relative mobility and growth or welfare is not straightforward. There may be change in the values of the indicators without relative mobility, for instance, when income doubles for all individuals; and there may be relative mobility with no change in the distribution, for instance, when two individuals or families exchange positions in the income distribution (Behrman, 2000). Although little is known about the causal relationship between economic growth and mobility, empirical studies have found that societies with less relative mobility tend to experience more inequality (Corak, 2013, Brunori, 2013). A better understanding of the process by which individuals reach certain socioeconomic status is essential to design and assess the impact of sustainable economic policy reforms.

People's socioeconomic status is determined by various factors, some of them are related to the economy in which they participate, such as labor market regulations, geographical location, industry and rate of unemployment. Others are personal and family characteristics. These include the traits and skills that parents pass on to their children. For instance, parents influence the child's behavior and performance later in life through the inheritance of abilities, investment in human resources, and transmission of physical or financial assets. We investigate the extent to which outcomes of adult children are dependent on family background, that is, we measure the intergenerational mobility in terms of those outcomes.

As inequality, mobility is a multidimensional concept. Also as with inequality, it is easier to consider the dimensions separately. We do not attempt to explain how the different dimensions of mobility are related to each other. Our goal is to compare the extent of mobility across generations for different socioeconomic variables. We estimate the intergenerational absolute and relative mobility associated with schooling, occupational status, and household wealth using data from the EMOVI-2011, a nationally representative social mobility survey in Mexico. This survey contains information on schooling, employment and household holdings for respondents and their parents. Because relative mobility is measured as a statistical correlation between parents' and children´s indicators, we construct continuous variables for respondents' and parents' outcomes. Schooling is measured with completed grades of schooling. For occupational status we use the International Socio-Economic Index of Occupational Status (ISEI), which measures the attributes of occupations that convert a person's schooling into income. For household wealth we construct an index based on household characteristics and ownership of durables and financial assets.

The analysis includes three refinements. First, to study mobility over time, estimates for different birth cohorts are obtained. Second, to examine mobility variability along the distribution of outcomes, estimates are obtained at different quantiles of the distribution. Third, comparisons of mobility are performed between different groups of individuals classified according to gender, indigenous origin and region of residence. Of special interest are the results for the more vulnerable groups: women, indigenous people, and individuals who were raised in rural areas. For the different measurements, the sample of analysis needs to satisfy various requirements, which reduces its size. For this reason and also for problems of missing information, results shouldn't be generalized to the population, but they still can give valuable insights and be suggestive.

We found that individuals have experienced upward intergenerational absolute mobility for the three outcomes. Concerning relative mobility, for the median respondent it has increased steadily over the years for schooling. This increasing trend in relative mobility can be observed for every subgroup of the population. Within each generation, relative mobility along the distribution of completed grades of schooling has been roughly constant. Both intergenerational occupational mobility and household wealth mobility increase with the age of the median respondent. In the case of wealth mobility the same pattern is observed for the vulnerable groups (women, individuals who were raised in rural areas and indigenous people with an indigenous origin). Regarding occupational relative mobility, that of individuals brought up in rural areas stays more or less constant along the life cycle and that of individuals with an indigenous origin is significantly lower when old. Measurements along these two outcome distributions show that occupational choices are more dependent on their fathers' occupation at the top end of the distribution. Relative to wealth mobility, parental dependence is strong amongst high income children at early stages of their life cycle, but decreases with the ages of the respondents.

The rest of the paper is divided into three sections. Section 2 describes the data. Section 3 presents the empirical analysis that examines intergenerational schooling, occupational and household wealth mobility. The last section concludes.

## 2. Data

The EMOVI-2011 (*Encuesta ESRU de Movilidad Social en México 2011*) was conducted by the *Espinosa Rugarcia Foundation* and *The Espinosa Yglesias Research Centre*.[1] The sample is representative for men and women between 25 and 64 years old.[2] It contains information on respondents' socio-demographic

[1] ESRU stands for the last name Espinosa Rugarcia.

[2] It is a nationally representative, probabilistic, stratified multistage survey. A conglomerate sampling scheme with four stages was used to draw the sample. The *2010 Censo de Poblacion y Vivienda* and the 2005 *Conteo de Poblacion y Vivienda* were used as sampling frames. In the first stage municipalities and localities of urban and non-urban areas were selected as primary sampling units. In order to ensure geographic and socioeconomic representativeness of the sample, the primary sampling units were stratified by number of inhabitants and socioeconomic

characteristics, schooling, employment, income and household holdings. It also collected retrospective information from the respondents on schooling, employment and household holdings of the parents of respondents. A total of 11,001 individuals were interviewed (4,990 women and 6,011 men). Table 1 shows the number of observations for each subgroup and the shares in percentages of the subpopulation they represent by birth cohort.

**Table 1**
**Number of observations and population shares (%) they represent**

| Group | Respondents ages 53-64 | | Respondents ages 42-52 | | Respondents ages 31-41 | | Respondents ages 25-30 | |
|---|---|---|---|---|---|---|---|---|
| | Obs. | Shares (%) | Obs. | Shares (%) | Obs. | Shares (%) | Obs. | Shares (%) |
| **all** | 1,966 | 19% | 2,085 | 26% | 2,769 | 36% | 4,181 | 19% |
| **women** | 964 | 51% | 1,092 | 54% | 1,354 | 53% | 1,580 | 54% |
| **men** | 1,002 | 49% | 993 | 46% | 1,415 | 47% | 2,601 | 46% |
| **rural** | 846 | 38% | 771 | 35% | 1,015 | 34% | 1,472 | 32% |
| **urban** | 1,090 | 62% | 1,283 | 65% | 1,725 | 66% | 2,655 | 68% |
| **indigenous** | 438 | 21% | 375 | 16% | 416 | 14% | 592 | 12% |
| **non-indigenous** | 1,405 | 79% | 1,588 | 84% | 2,221 | 86% | 3,289 | 88% |

On average, individuals are 41 years old with a standard deviation of 10 years. More than 50% of them are heads of household, 29% are spouses of heads of household, 15% are children of heads of households and the rest are other relatives. About 35% of respondents lived in rural areas when they were 14 years old. [3] Among those who lived in rural areas, 23% have an indigenous parent.[4] This percentage is 11% for those who lived in urban areas. Individuals

status. The socioeconomic stratification was done according to an index calculated with the 2010 census information. Then, basic geographic areas (AGEB) were selected in urban areas as secondary sampling units. The third stage consisted in selecting blocks in each AGEB using the 2005 *Conteo* because the level of information needed for this stage had not been released as part of the 2010 census. Finally, households were selected (four per block). Four subpopulations were targeted: male heads of household, female heads of household, males not heads of household and females not heads of household. Interviewees were selected according to a mechanism that consists of linking pseudorandom numbers to a "rank table". When no potential interviewees were at home, interviewers would move to the next house.

[3] Cities with less than 2,500 inhabitants are considered rural areas.

[4] An individual is considered to have an indigenous origin when either the father or mother speaks an indigenous language (on average, 15% of individuals ages 25-64). This definition differs from those usually used in the literature for indigenous people. For instance, the National Institute of Statistics and Geography (INEGI by its name in Spanish) reports the total number of individuals 5 years or older who speak an indigenous language (6.6 out of 112 million in 2010). The national commission for the development of indigenous peoples has defined indigenous as someone who lives in a household where the head of household, the spouse of the head of household or any

average 9.2 completed grades of schooling, which corresponds to the third year of lower secondary school with 85% having completed at least primary school. The distribution of respondents by level of schooling is: 5% have no schooling, 10% did not complete primary school, 24% completed primary, 24% completed secondary, 16% completed upper secondary school, and 20% obtained a bachelor degree. Interviewees have two more grades of completed schooling on average than their fathers, 6.9. [5]

Interesting differences arise when the data are analyzed by gender, indigenous origin, and region of residence when respondents were 14 years old. For instance, women have half a completed grade of schooling less than men, 9.0 versus 9.5; although the difference has decreased from 1.63 for the oldest birth cohort to 0.13 for the youngest one. Also, a lower proportion of women completed primary or an upper level of schooling, 82% versus 87% (also see Graph 1). Differences in schooling are bigger when comparing individuals raised in rural areas to those raised in urban areas and indigenous to non-indigenous. The proportions of individuals with primary or an upper level of schooling from rural areas and individuals with an indigenous origin are lower by 15 percentage points when compared to their counterparts.

Around 65% of interviewees report having a remunerated job, 25% are engaged in performing household activities (housewives), 3% are unemployed and the rest include students, retirees, and those who have a non-remunerated job. Of those who have a remunerated job, 64% are employees in the private or public sector, 7% are owners or partners of the firm where they work, and 24% are self-employed (most of the rest are domestic service workers). On average, the household monthly income of respondents is 5,057 Mexican pesos and the median is 4,000.

In general, the most common occupations are industry workers, housewives, and workers in the trade sector. Occupational differences are most striking when comparing men to women. For instance, while only 2% of men report that their primary occupation is being engaged in household activities almost half of women report being a housewife. Also, significant higher proportions of men work in the industrial, agricultural, and transportation sectors, while a higher proportion of women work in personal services. Occupational distributions are more similar when comparing individuals by region and indigenous origin. The largest difference can be found in the agricultural sector; 12% of respondents who lived in rural areas and 10% of indigenous are agricultural workers while only 2% of those who lived in urban areas and 5% of non-indigenous individuals work in that sector.

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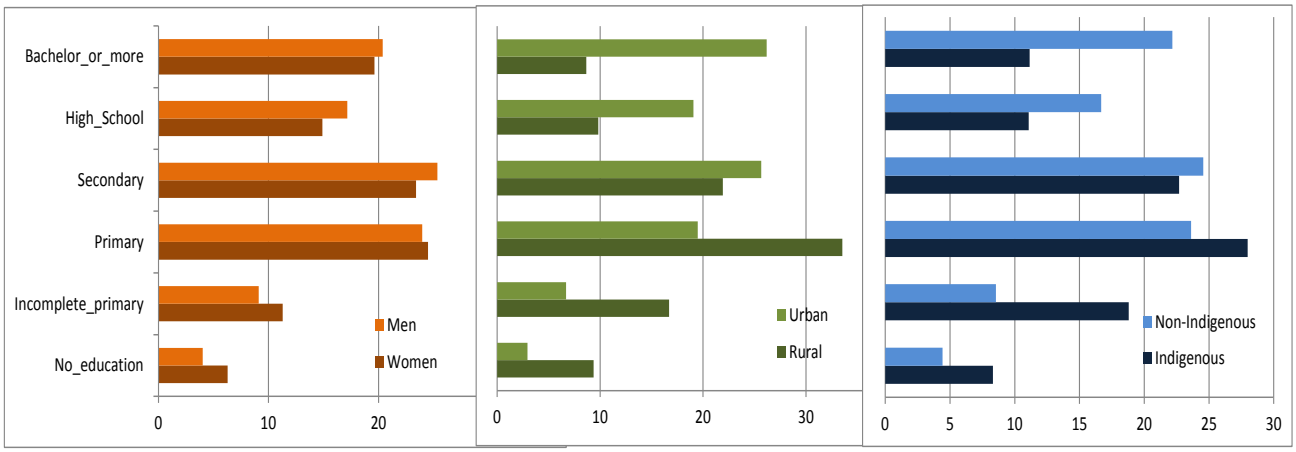
other relative in the ascending line of parentage reports speaking an indigenous language (10.2 out of 97 million in 2000).

[5] Currently, the Mexican formal schooling system is divided into three levels: basic, upper secondary and higher education. Basic education is compulsory and is further divided into primary and lower secondary. Primary school comprises 6 grades and usually is studied between the ages of 6-12. Lower secondary has three grades and is usually studied between the ages of 13-15. Upper secondary has three grades and is usually studied between the ages of 16-18.

**Graph 1.**
**Distribution of individuals by level of schooling by groups**




Respondents also report on household characteristics and the ownership of durables and financial assets. Household characteristics include having access to services such as the internet, piped water, and electricity. Examples of durables are: cars, refrigerators, stoves, washing machines and microwave ovens. Finally, financial assets include ownership of stocks, credit cards, and bank accounts.

## 3. Empirical Analysis

We measure the absolute schooling, occupational, and household wealth mobility between two generations, that is, the total amount of movement of children in terms of those three outcomes compared to their parents.[6] Because absolute mobility may simply reflect aggregate economic changes such as economic growth, we are also interested in studying relative mobility, which refers to changes between parents and children in their respective positions in their generations' distributions.

Intergenerational relative mobility of socioeconomic outcomes can be measured by running regressions of respondents' outcomes on parents' outcomes when the outcomes are continuous variables. Following Behrman et al. (2001), we define the model as:

$$S_{i,t} = \alpha + \beta S_{i,t-1} + \omega_{i,t} \quad (1)$$

where $S_{i,t}$ is the outcome of interest (completed grades of schooling, occupational status constructed as a continuous variable, asset-based index) for individual or household $i$ from generation $t$ and $\omega$ is a stochastic error independent of the previous generation outcome that is assumed to be independently distributed across individuals/households and across generations. Estimates of $\beta$ close to

[6] For absolute mobility measurements we use the survey weights.

unity suggest very limited intergenerational mobility, while estimates of $\beta$ close to zero suggest that the outcome is not closely related across generations. Thus, $\beta$ is a measure of intergenerational persistence or immobility. To capture cohort effects we include dummy variables for each generation. We estimate the model with bootstrapped standard errors.[7]

Quantile regressions are used to estimate the parameter $\beta$. We choose this method because if our dependent variable is highly skewed, we are more interested in what predicts the median or some other quantile and not the mean (as Least Squares predict). For instance, if the distribution of household wealth turns out to be similar to the distribution of earnings, then the dependent variable would be right-skewed. If so, the center of the distribution of population intergenerational correlations of wealth may be better represented by its median than by its mean, and therefore; the model should be estimated by the 0.5-quantile regression.

Moreover the use of quantile regression enables us to explore whether intergenerational mobility differs at different points in the predicted distribution for the dependent variable – for example, does $\beta$ differ for the 0.1 quantile versus the 0.5 quantile versus the 0.9 quantile? This permits testing whether intergenerational mobility differs at the low or high ends of the distribution versus at the median, as often is conjectured to be the case.

In order to study mobility patterns over time, persistence is measured for four birth cohorts of respondents defined according to respondents' self-reported ages: i) 53-64, ii) 42-52, iii) 31-41, and iv) 25-30.[8] For schooling mobility we make father-child comparisons of completed grades of schooling for the four birth cohorts. Because the total number of completed grades of schooling does not change much after individuals are 25 years old, we interpret changes in mobility for the different birth cohorts as generational movements. For occupational mobility, we compare occupational indexes of current occupations of respondents to those of their fathers when respondents were 14 years old. At that moment, fathers were in their early 40s. Therefore, we interpret changes in mobility across birth cohorts as movements along the individual's life cycle (with fathers' occupation at around 42 years old as a point of reference).

Regarding household wealth intergenerational mobility, we need to take into account that the accumulation of assets varies along the household's life cycle. For absolute mobility we compare asset indexes of households at the same life cycle stage across generations. For relative mobility, we compare the current respondent's family asset accumulation to that of his parents when his father was about the same age as he is today. Only for the youngest three birth cohorts there are enough observations of households that satisfy that restriction. We interpret changes in mobility for the different birth cohorts as movements along the household's life cycle.

[7] For the regression analyses we do not use the survey weights. For the bootstrap we do 100 repetitions.

[8] Birth cohorts were defined according to the availability of information on asset holdings. The cut was made at 52 years of age mainly because at that age there are noticeable changes in asset holdings when doing a graphical analysis.

### *Intergenerational Schooling Mobility*

Mexico has experienced absolute upwards schooling mobility over the years in the sense that children on average have consistently surpassed the schooling attainment of their fathers. The median child has at least four grades of schooling more than his father. Table 2 shows the median of completed grades of schooling by group for the four birth cohorts. The differences are more marked for the two oldest cohorts. The median respondent for the oldest generation has completed primary school, while his father did not attend school. Respondents for the second and third generations have completed lower secondary, while their fathers completed two and five grades of schooling, respectively. Finally, the median respondent for the youngest generation completed two grades of upper secondary, while his father completed only primary school. As their fathers, the group of individuals from rural areas remains the least schooled with zero grades of schooling for the two oldest cohorts, two grades of schooling for the cohort of respondents ages 31-41 and four grades of schooling for the cohort of respondents ages 25-30. [9]

Schooling attainment of the 10$^{th}$ percentile respondent has increased to 4-6 grades of schooling while their fathers had zero completed grades. By the third generation, women, men, individuals who lived in urban areas and non-indigenous people had completed six grades of schooling and individuals who lived in rural areas and indigenous people had completed four years of schooling. Individuals from the youngest generation have not further improved their schooling attainment, except for those who lived in rural areas who have completed one more grade of schooling to reach five grades.

Most individuals at the 90$^{th}$ percentile have completed 16 grades of schooling when their fathers had 6-12 completed grades. The differences are striking for the oldest three generations. Men, women, individuals who were raised in urban areas and non-indigenous groups from all birth cohorts have completed 16 grades of schooling, when their fathers had completed only six grades for the oldest generation and nine for the second and third generations. This means a difference of at least seven grades (except for those who lived in urban areas whose fathers already had completed upper secondary school). The father-child differences for the same three generations vary between five and ten grades for indigenous and people who lived in rural areas. In general, the differences are smaller for all subgroups of the youngest generation. One can expect intergenerational schooling differences to decline in the future given that

[9] The interpretation of these results and those of the regression analysis should be taken cautiously. The number of observations used for the analyses account only for 82-86% of total observations due to missing information on fathers' schooling attainment. When comparing the means of years of schooling between individuals who report their fathers' completed years of schooling and those who have missing information, the differences although minor are statistically significant only for the oldest generations (-0.7 years of schooling for the oldest generation, followed by 0.88, 0.21 and -0.02 for the other three generations). Therefore, samples of the two youngest cohorts are less likely to be biased.

the economy is experiencing upwards absolute mobility and having 16 completed grades of schooling seems to be a plateau.[10]

**Table 2**
**Respondents' and fathers' completed grades of schooling**

| Group | Respondents ages 53-64 (1,617 obs.) | | | Respondents ages 42-52 (1,784 obs.) | | | Respondents ages 31-41 (2,393 obs.) | | | Respondents ages 25-30 (3,627 obs.) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | respon | | | respon | | | respon | | | respon | | |
| | fathers | dents | diff. | fathers | dents | diff. | fathers | dents | diff. | fathers | dents | diff. |
| **median respondent** | | | | | | | | | | | | |
| **all** | 0 | 6 | 6 | 2 | 9 | 7 | 5 | 9 | 4 | 6 | 11 | 5 |
| **women** | 0 | 6 | 6 | 2 | 9 | 7 | 5 | 9 | 4 | 6 | 11 | 5 |
| **men** | 0 | 6 | 6 | 2 | 9 | 7 | 5 | 9 | 4 | 6 | 11 | 5 |
| **rural** | 0 | 5 | 5 | 0 | 6 | 6 | 2 | 8 | 6 | 4 | 9 | 5 |
| **urban** | 2 | 8 | 6 | 3 | 9 | 6 | 6 | 11 | 5 | 6 | 12 | 6 |
| **indigenous** | 0 | 6 | 6 | 0 | 6 | 6 | 4 | 9 | 5 | 6 | 9 | 3 |
| **non-indigenous** | 0 | 6 | 6 | 2 | 9 | 7 | 6 | 9 | 3 | 6 | 11 | 5 |
| **10th percentile** | | | | | | | | | | | | |
| **all** | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | 6 | 0 | 6 | 6 |
| **women** | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 6 | 6 | 0 | 6 | 6 |
| **men** | 0 | 1 | 1 | 0 | 3 | 3 | 0 | 6 | 6 | 0 | 6 | 6 |
| **rural** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 5 | 5 |
| **urban** | 0 | 1 | 1 | 0 | 4 | 4 | 0 | 6 | 6 | 0 | 6 | 6 |
| **indigenous** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 4 | 4 |
| **non-indigenous** | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 6 | 6 | 0 | 6 | 6 |
| **90th percentile** | | | | | | | | | | | | |
| **all** | 6 | 16 | 10 | 9 | 16 | 7 | 9 | 16 | 7 | 12 | 16 | 4 |
| **women** | 6 | 15 | 9 | 9 | 16 | 7 | 9 | 16 | 7 | 12 | 16 | 4 |
| **men** | 6 | 17 | 11 | 9 | 16 | 7 | 9 | 16 | 7 | 12 | 16 | 4 |
| **rural** | 6 | 12 | 6 | 6 | 15 | 9 | 9 | 14 | 5 | 9 | 12 | 3 |
| **urban** | 9 | 17 | 8 | 9 | 17 | 8 | 12 | 16 | 4 | 16 | 16 | 0 |
| **indigenous** | 6 | 16 | 10 | 6 | 12 | 6 | 9 | 15 | 6 | 9 | 16 | 7 |
| **non-indigenous** | 9 | 16 | 7 | 9 | 16 | 7 | 9 | 16 | 7 | 12 | 16 | 4 |

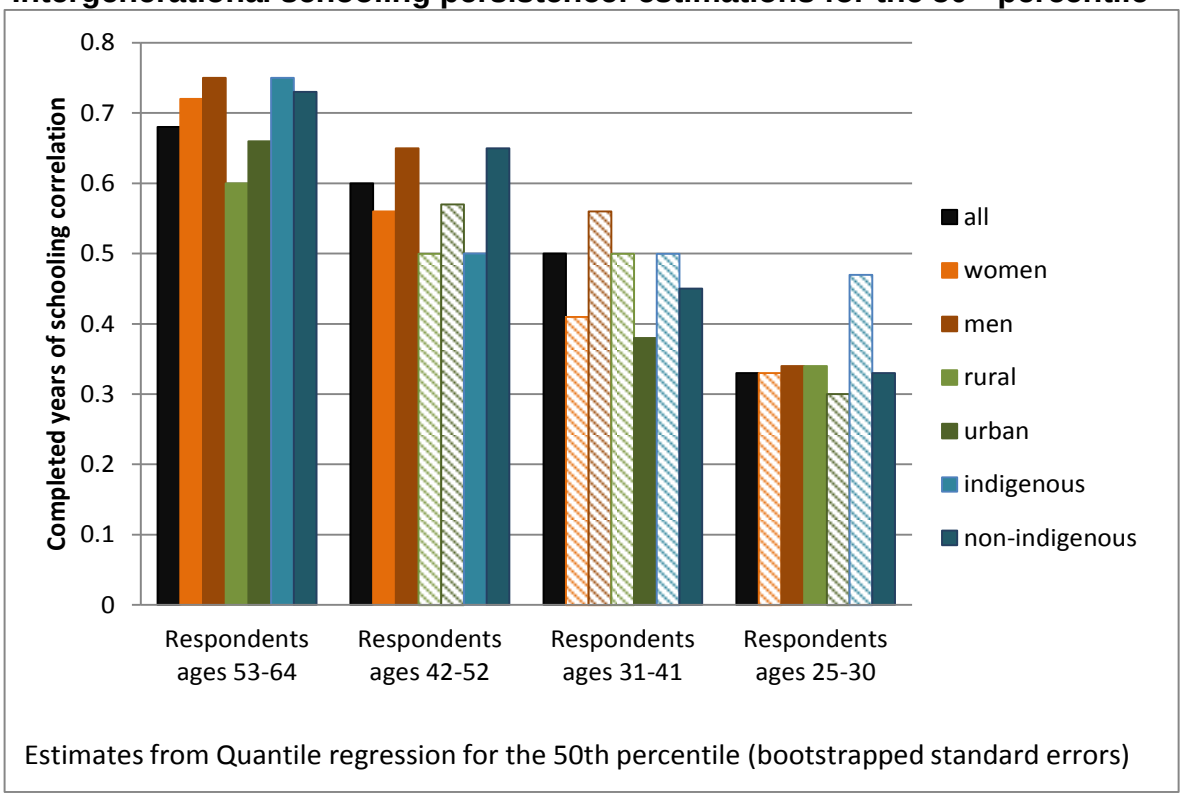
To study intergenerational relative mobility, we estimate the linear model in equation (1), where $S_{i,t}$ and $S_{i,t-1}$ here refer to completed grades of schooling of respondents and completed grades of schooling of their fathers, respectively. The parameter $\beta$ measures the extent to which family schooling background is associated with schooling attainment. Graphs 2-3 show the estimates of $\beta$ for the four birth cohorts and different population groups. For each generation, the first bar shows the estimates for the whole sample of individuals and the other six bars correspond to the estimates for each population subgroup. Bars with a solid color indicate that the difference in persistence with respect to the previous cohort is statistically significant at the 95% level. For the oldest generation, a solid color bar means that the coefficient is statistical significant at the 95%.

[10] The maximum number of completed grades of schooling in the data is 22.

Estimates at the medians suggest that intergenerational relative schooling mobility increased steadily over the years going from a persistence coefficient of $\beta = 0.68$ for the oldest generation to $\beta = 0.33$ for the youngest generation, which corresponds to a decrease in persistence of 51%. That is, the association of parental schooling attainment with their children's schooling attainment has decreased across generations. This increasing trend in relative mobility can be observed for every subgroup of the population.

Our results are in accordance with those of other studies that apply similar methods to measure intergenerational schooling mobility in Mexico. By applying the Least Squares method, Behrman et al. (2001) estimated an overall persistence coefficient of $\beta = 0.5$ for individuals 18 years and older who reside in urban Mexico using data from the National Urban Employment survey for 1994. Also, according to the CEEY's report on Mexican social mobility which uses the EMOVI-2011 data, Mexico has an intergenerational schooling correlation of 0.47 (Vélez Grajales et al., 2013).[11] De Hoyos et al. (2010) examine schooling mobility over four generations (1942-1951, 1952-1961, 1962-1971, and 1972-1981) using data from the EMOVI-2006. Based on correlation coefficients calculations, ($\rho = 0.6$, $\rho = 0.53$, $\rho = 0.52$, $\rho = 0.55$, respectively), they also conclude that over the years, fathers' schooling has become less decisive on the schooling level of their children.

**Graph 2**
**Intergenerational schooling persistence: estimations for the 50th percentile**

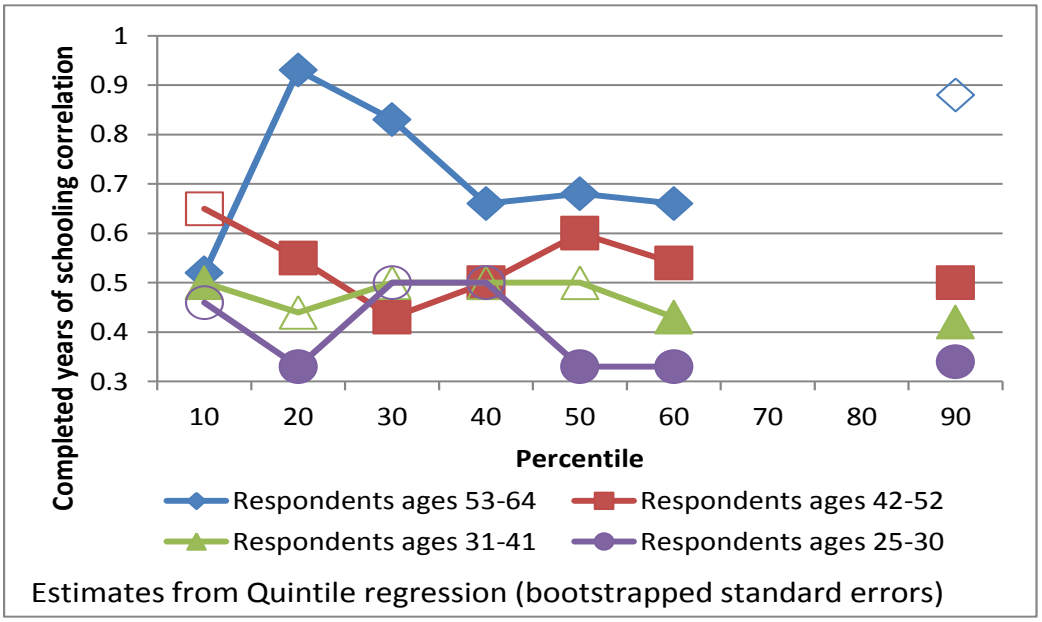



Estimates from Quantile regression for the 50th percentile (bootstrapped standard errors)

[11] See the CEEY's report for a comparison of Mexican schooling mobility with other countries.

To further investigate whether schooling relative mobility differs along the outcome's distribution, we estimate the intergenerational correlation at the deciles of the distribution for the group of all respondents and all four generations (Graph 3). Estimates at the different percentiles fluctuate around a constant value, which suggests that more schooled children are as likely as less schooled children to end up in the same parental position in the schooling distribution. Therefore, we cannot support the idea that schooling of more educated children is more dependent on their family's schooling background either because their parents invest more resources in education or because their children are more talented, a topic that is often discussed in the social mobility literature. Our results suggest that relative mobility is roughly constant along the schooling distribution.

**Graph 3**
**Intergenerational schooling persistence for different percentiles of the distribution**




### *Intergenerational Occupational Mobility*

Intergenerational occupational mobility refers to changes in the kind of work people do across generations. It has been argued that the extent to which the occupations of sons are predicted from the occupations of their fathers can be taken as an indicator of the degree of societal "opennes" to achievement based on individual merit (Treiman, 2007). To study the transmission of occupational status, we use a continuous approach to occupational stratification. The main advantage of continuous approaches over categorical approaches is that they capture in one dimension many distinctions among occupational

groups, which can therefore be represented by a single parameter in statistical models.

As far as we know, the national occupation classifications in Mexico are discrete. Therefore, we use the Ganzeboom et al.'s International Socio-Economic Index of Occupational Status (ISEI), which provides a system to classify occupations on the basis of the skills and attributes required to fulfil the tasks of the jobs (Ganzeboom et al. (1992)). Problems of results' misinterpretation might arise from using an index not adjusted to the national context because national classifications may group occupations by criteria other than skill level. For instance, it is possible that income associated to Mexican agricultural workers is overestimated by the ISEI. However, according to Patricio Solis (2010), the ISEI, in general, captures the main socioeconomic characteristics associated to occupations in Mexico.

This index is derived from the 1988 International Standard Classification of Occupations (ISCO88).[12] "ISCO88 is a nested classification of four levels. The first level distinguishes nine major groups; within these there are three further levels: 28 sub major groups, 116 minor groups and 390 unit groups." (Ganzeboom and Treiman, 1996) The values of the ISEI88 vary from 16 (Fishery, hunting & trapping laborers that are classified as Elementary Occupations according to ISCO88) to 90 (Judges that are classified as Professionals according to ISCO88). The nine major groups of the ISCO88 classification of occupations are: i) Elementary Occupations, ii) Plant and Machine Operators and Assemblers, iii) Craft and Related Trades Workers, iv) Skilled Agricultural and Fishery Workers, v) Service Workers and Shop and Market Sales Workers, vi) Clerks, vii) Technicians and Associate Professionals, and, ix) Legislators, Senior Officials and Managers.

Because about half of women report being housewives, which is not a remunerated job, the analysis is conducted for men only. Also, because young individuals change occupations more frequently, we make father-child comparisons only for the oldest three cohorts (respondents ages 53-64, 42-52, and 31-41). In this regard, Moscarina and Vella (2008) find that in the United States, the probability of a change in occupation decreases from 28 percent at age 16 to 8 percent at age 31 and then slowly decreases to level out at 4 percent. Table 3 presents the ISEI88 for men and their fathers by birth cohort and population subgroup at different points in the index distribution.[13]

The median respondent for every generation and population subgroup has experienced upward absolute occupational mobility. At the ends of the distribution there are a few cases with zero occupational mobility, but no one at the percentiles considered has moved downwards. At the median, respondents have 2-17 ISEI88 points more than their fathers. That difference varies between 0-7 points at the $10^{th}$ percentile and 0-26 points at the $90^{th}$ percentile. The groups with the lowest ISEI88 have been consistently the group of individuals from rural areas and indigenous people for both children and fathers. The group of individuals from urban areas has the highest index.

[12] The MSMS-2011 contains the ISCO-1988 and ISCO-2008.
[13] We refer to the occupation of the current job. Retirees are excluded from the sample.

Notice that occupations differ markedly for individuals at different points in the distribution. According to the ISCO88 classification, most occupations of the 10th percentile respondents belong to the group ii) Plant and Machine Operators and Assemblers while the occupations of their fathers belong to both ii) Plant and Machine Operators and Assemblers and i) Elementary Occupations. Most of median respondents are iii) Craft and Related Trades Workers while their fathers are ii) Plant and Machine Operators and Assemblers. Finally, respondents from the top end of the distribution are mainly v) Service Workers and Shop and Market Sales Workers and vi) Clerks while their parents are iv) Skilled Agricultural and Fishery Workers.

**Table 3**
**Respondents' and fathers' ISEI88**

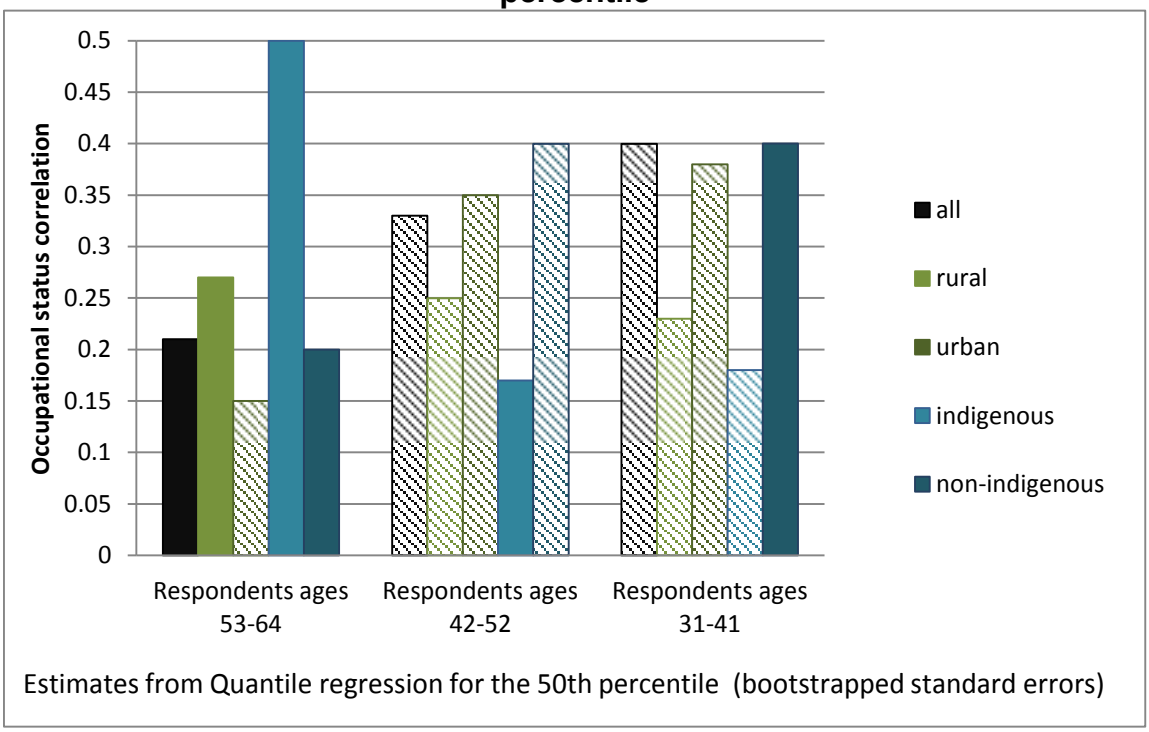
| Group | Respondents ages 53-64 (529 obs.) | | | Respondents ages 42-52 (712 obs.) | | | Respondents ages 31-41 (1,058 obs.) | | |
|---|---|---|---|---|---|---|---|---|---|
| | fathers | respondents | diff. | fathers | respondents | diff. | fathers | respondents | diff. |
| **median respondent** | | | | | | | | | |
| all | 27 | 33 | 6 | 29 | 33 | 4 | 30 | 34 | 4 |
| rural | 23 | 30 | 7 | 23 | 29 | 6 | 26 | 30 | 4 |
| urban | 29 | 40 | 11 | 31 | 34 | 3 | 32 | 37 | 5 |
| indigenous | 23 | 40 | 17 | 23 | 29 | 6 | 23 | 30 | 7 |
| non-indigenous | 28 | 30 | 2 | 29 | 34 | 5 | 30 | 34 | 4 |
| **10th percentile** | | | | | | | | | |
| all | 16 | 23 | 7 | 21 | 23 | 2 | 23 | 23 | 0 |
| rural | 16 | 23 | 7 | 16 | 23 | 7 | 16 | 23 | 7 |
| urban | 16 | 23 | 7 | 23 | 23 | 0 | 23 | 26 | 3 |
| indigenous | 16 | 23 | 7 | 16 | 23 | 7 | 16 | 23 | 7 |
| non-indigenous | 16 | 23 | 7 | 23 | 23 | 0 | 23 | 23 | 0 |
| **90th percentile** | | | | | | | | | |
| all | 46 | 67 | 21 | 43 | 66 | 23 | 46 | 67 | 21 |
| rural | 43 | 43 | 0 | 34 | 52 | 18 | 43 | 50 | 7 |
| urban | 69 | 71 | 2 | 45 | 69 | 24 | 50 | 69 | 19 |
| indigenous | 43 | 66 | 23 | 37 | 46 | 9 | 43 | 50 | 7 |
| non-indigenous | 54 | 67 | 13 | 43 | 67 | 24 | 48 | 67 | 19 |

To measure relative mobility, we estimate model (1), where *S* refers to the value of the ISEI88. Graphs 6-7 show the estimates of $\beta$ for the four birth cohorts and different population subgroups. Intergenerational relative occupational mobility seems to increase with the age of the median respondent. Bars with a solid color indicate that the difference in persistence with respect to the previous cohort is statistically significant at the 85% level. The persistence coefficient for

the oldest generation ($\beta = 0.21$) is 35-50% lower than that for individuals ages 31-41 and 42-52 ($\beta = 0.4$ and $\beta = 0.33$, respectively). The same pattern is observed for urban and non-indigenous groups. However, for individuals raised in rural areas, relative mobility stays more or less constant along the life cycle while for individuals with an indigenous origin, it is significantly lower when old (the persistence coefficient is almost twice that of younger individuals) (see Graph 4). It might it be that indigenous individuals are less likely to be on secure occupational tracks, so they experience more mobility when they are older.

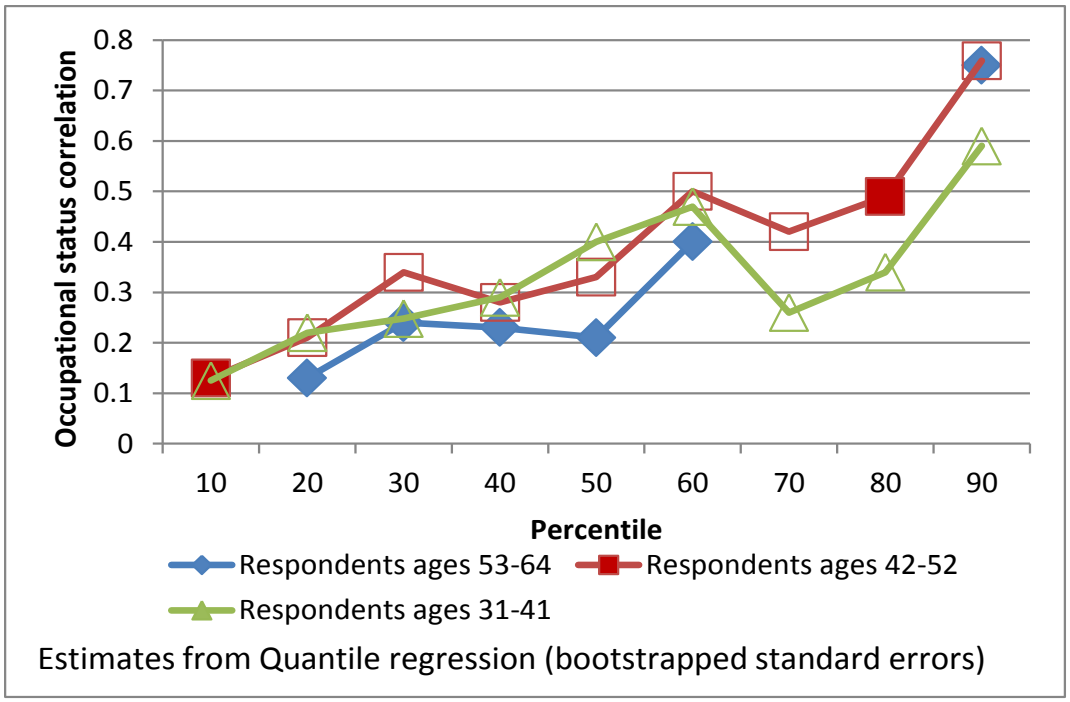
The level of intergenerational occupational mobility differs notably at different points of the distribution (Graph 5). For all three cohorts, fathers' occupation more strongly is associated with their sons' occupation at the top end of the distribution. The persistence coefficient rises from 0.12-0.13 at the 10th percentile of the distribution to more than 0.59 at the 90th percentile.

**Graph 4**
**Intergenerational occupational persistence: estimations for the 50th percentile**




Estimates from Quantile regression for the 50th percentile (bootstrapped standard errors)

**Graph 5**
**Intergenerational occupational persistence for different percentiles of the distribution**




### *Intergenerational Household Wealth Mobility*

A common relationship studied when measuring intergenerational mobility relates earnings of parents to those of children (Behrman and Taubman, 1990, Solon, 1992). One caveat on measuring social mobility with earnings is that estimates are subject to bias due to measurement errors; first, because reports on annual earnings are not always accurate, and second, because permanent earnings should be used for the estimations and few datasets contain enough information to calculate lifetime earnings. The EMOVI-2011 contains information on earnings for respondents but not for their parents; therefore, it is not possible to estimate intergenerational earnings mobility. Instead, we exploit the information it provides on household holdings and services for both respondents and their parents to construct asset indexes to estimate household wealth mobility.

An advantage of using an asset-based index instead of the standard use of expenditures or income to study mobility is that asset accumulation is a better proxy for longer-run resources (Sahn and Stifel, 2003, Smith, 2001)[14]. However,

[14] We call it a "wealth index" although we understand it is not comprehensive because we are not including other variables that are might be included such as human capital. However, for the

our measurements could be biased still due to recall problems given that we are using respondents' reports on parents' household characteristics. The construction of the index requires selecting a set of weights for each asset to obtain an index of the form

$$A_i = \gamma_1 a_{i1} + ... + \gamma_K a_{iK} \qquad (2)$$

where $A_i$ is the asset index, the $a_{ik}$'s are the individual assets, and the $\gamma$'s are the weights that are estimated with principal components analysis.

The principal component analysis technique is used to reduce the dimension of a set of variables by constructing fewer new variables that capture the common variation in the original set as in Pollitt et al. (1993) and Filmer and Pritchett (2001) (also see Filmer and Scott 2012). The new variables are linear combinations of the original variables. The first principal component is the combination that explains the largest amount of variation. The second principal component is the combination that best explains the remaining variability, and so on. In this investigation, the asset index on which we focus is the first principal component.

Indexes are computed for both the household assets of respondents and those owned by their parents when respondents were 14 years old. Following the notation in Filmer and Pritchett (2001), the formula of the index for each household $A_j$ can be written as:

$$A_j = f_1 \cdot \frac{a_{ji} - a_1}{s_1} + \cdots + f_N \cdot \frac{a_{jN} - a_N}{s_N} \qquad (3)$$

where $f_i$ is the weight in the linear combination for asset *i*; $a_{ji}$ is the value assigned to asset *i*; and, $a_i$ and $s_i$ are the mean and standard deviation of the *i*-th asset variable over all households. The index is defined to have a mean zero.
As noted before, three types of assets are included: consumer durables, household characteristics and financial assets. Except for the crowding index (number of household members divided by number of bedrooms) all variables are binary. The value 1 represents ownership or access to and 0 is the lack of the asset. Therefore, a move from 0 to 1 of the variable results in a discrete change of $\frac{f_i}{s_i}$ in the index.

In contrast to the outcomes of completed grades of schooling, household wealth varies along the household life cycle. We estimated an asset index for respondents' households and found that wealth increases with the age of the head of household until around the early-fifties, and then decreases again. This result is consistent with the finding that expenditures on durables are hump-shaped with a peak at about the age of 50 in Fernandez-Villaverde and Krueger (2010). We use the age of the householder heads and spouses to establish the 'household age'. For this reason, the sample of analysis is restricted to

purposes of our paper, we are only interested in measuring the accumulation of physical assets separately from the human capital component represented by schooling attainment.

respondents who report being the head of household or his spouse. This reduces the size of the sample from 11,001 to 7,624 observations.[15] For parents' households we assume that the head of household was the father.

To measure absolute wealth mobility only households at the same life cycle stage should be compared over time. Parents' information on household holdings refers to the same life cycle stage because respondents were asked about their parents' assets when they were 14 years old. At that point in time, fathers' age follows a normal distribution. Across generations the mean and standard deviation vary between 41-44 and 8-10 years, respectively.

To be able to compare index levels between birth cohorts and therefore examine household wealth movements, only common assets of parents of respondents are included in the estimation of the asset index.[16] Respondents younger than 31 were asked about all parents' assets listed in the questionnaire, respondents 31-41 years old were asked about all of them except internet and cell phone, and respondents older than 41 were asked about all of them except internet, cell phone, computer, DVD, microwave oven, and cable tv. Table 4 shows the means and marginal effects of the variables used in the estimation. All variables have positive effects on the index, except for the crowding index[17]. Having a bank account is the asset that most increases it, by 1.47. Perhaps *prima facie* surprisingly, the ownership of the house where respondents live is the asset that increases the index the least (0.01). This can be explained because simple house ownership does not distinguish very much poor from rich people --a higher proportion of individuals in the extreme quintiles of the index distribution own houses compared to those in the middle quintiles.

The results suggest that there has been upward absolute mobility in household wealth. Table 5 shows the values of the index for parents for the four birth cohorts and different population subgroups at the $50^{th}$, $10^{th}$ and $90^{th}$ percentiles of the index distribution. The index measures the accumulation of assets of households where the head of household was around 41-44 years old. The asset index for the median individual increased from -1.26 for the oldest generation to 0.51 for the youngest generation, a change of 0.79 standard deviations in the asset index defined across the generations. The same pattern is observed for the different population subgroups, except for indigenous people who experienced a decline in household wealth from the third to the youngest generation. This group also has the lowest value of the index. Results are similar for the $10^{th}$ and $90^{th}$ percentile respondents, except for individuals from rural areas and indigenous people, who have moved downwards from the third to the youngest generation.

[15] Because spouses of heads of household were not a targeted population there is the risk that our restricted sample is not representative of individuals ages 25-64 who are heads of household and spouses of heads of household. Nevertheless, the results provide useful information.

[16] It is very probable that the subgroups of fathers across generations are not representative samples of Mexican households where the head of household was around 41-44 years old.

[17] We exclude the variables for ownership of a country house, ownership of an apartment for rent, and ownership of stocks because very low proportions of households own these assets.

**Table 4**
**Construction of the Parents' Household Wealth Index with common assets**

| Variable | All parents (7,023 obs.) | |
|---|---|---|
| | Mean | Weight/S.D. |
| bank account | 0.02 | 1.47 |
| credit card | 0.02 | 1.25 |
| vacuum | 0.04 | 1.15 |
| toaster | 0.06 | 1.03 |
| domestic service | 0.03 | 1.00 |
| telephone | 0.12 | 0.87 |
| savings | 0.03 | 0.85 |
| boiler | 0.22 | 0.75 |
| washer machine | 0.24 | 0.73 |
| refrigerator | 0.48 | 0.64 |
| car | 0.19 | 0.62 |
| bathroom | 0.48 | 0.61 |
| stove | 0.62 | 0.60 |
| electricity | 0.80 | 0.57 |
| piped water | 0.66 | 0.56 |
| house | 0.71 | 0.01 |
| crowding index | 3.69 | -0.08 |

To measure intergenerational relative household wealth mobility, we seek to measure parents-children differences in the wealth distribution position when the respondent and his father were about the same age, otherwise we wouldn't be able to know whether the differences are due to a change in the rate of wealth accumulation or simply because we are comparing households at two different life cycle stages. Therefore, for the persistence coefficient estimations we restrict the sample to respondents whose father, at the time the respondent was 14 years old, was up to three years younger or up to seven years older than the respondent at the time of the interview.[18] This restriction reduces the size of the sample considerably to 1,903 observations.

[18] On average, fathers are two years older than respondents when they were 14 years old.

**Table 5**
**Parents' Household Wealth Index with common assets**

| Group | Parents of respondents ages 53-64 | Parents of respondents ages 42-52 | Parents of respondents ages 31-41 | Parents of respondents ages 25-30 |
|---|---|---|---|---|
| **median respondent** | | | | |
| **all** | -1.26 | -0.7 | -0.002 | 0.51 |
| **women** | -1.48 | -0.72 | -0.08 | 0.5 |
| **men** | -1.1 | -0.7 | 0.36 | 0.51 |
| **rural** | -2.39 | -1.83 | -0.86 | -0.67 |
| **urban** | -0.3 | -0.03 | 0.55 | 1.16 |
| **indigenous** | -2.18 | -1.87 | -0.87 | -1.38 |
| **non-indigenous** | -0.86 | -0.4 | 0.29 | 0.56 |
| **10th percentile** | | | | |
| **all** | -2.71 | -2.59 | -2.1 | -2.1 |
| **women** | -2.75 | -2.63 | -2.43 | -2 |
| **men** | -2.67 | -2.51 | -1.86 | -2.26 |
| **rural** | -2.83 | -2.75 | -2.58 | -2.44 |
| **urban** | -2.52 | -2.02 | -1.38 | -0.95 |
| **indigenous** | -2.75 | -2.75 | -2.6 | -2.66 |
| **non-indigenous** | -2.67 | -2.51 | -1.94 | -1.38 |
| **90th percentile** | | | | |
| **all** | 2.75 | 2.72 | 3.1 | 3.14 |
| **women** | 2.64 | 2.64 | 2.81 | 3.14 |
| **men** | 2.75 | 2.82 | 3.51 | 3.52 |
| **rural** | -0.043 | 1.07 | 1.3 | 1.83 |
| **urban** | 3.48 | 3.39 | 3.56 | 3.59 |
| **indigenous** | 2.16 | 0.76 | 1.95 | 1.18 |
| **non-indigenous** | 2.92 | 2.82 | 3.45 | 3.51 |

Indexes are estimated separately for the three youngest birth cohorts of respondents and their parents using all observations and all information available on assets. We don't include the generations of respondents ages 53-64 because there are few cases of fathers being in their fifties when respondents were young. Tables 6 and 7 show the means and marginal effects of the variables that constitute the indexes. All variables have positive effects on the indexes of the four groups of respondents, except for the crowding index[19]. Having a bank account, a vacuum cleaner, and internet are among the assets that most increase the indexes for all groups (0.6 or more units). The ownership of the

[19] We exclude the variables ownership of a country house, ownership of an apartment for rent, and ownership of stocks because less than 2% of respondents of each birth cohort own these assets.

house where respondents live is the asset that increases the indexes the least (0.23 or less).

In the case of the asset indexes computed for parents of respondents, the ownership of a bank account and a credit card are the two assets that increase the indexes the most (more than 1.4 units).[20] As in the case of the indexes for respondents, for parents, the crowding index also has a negative effect and the asset that increases the indexes the least is the ownership of a house (see Table 7).

**Table 6**
**Respondents' Wealth Index by birth cohort**

| Variable | Respondents ages 42-52 (1,792 obs.) | | Respondents ages 31-41 (2,057 obs.) | | Respondents ages 25-30 (1,591 obs.) | |
|---|---|---|---|---|---|---|
| | Mean | Weight/S.D. | Mean | Weight/S.D. | Mean | Weight/S.D. |
| **house** | 0.76 | **0.13** | 0.62 | **0.07** | 0.49 | **0.23** |
| **stove** | 0.95 | 0.65 | 0.95 | 0.60 | 0.93 | 0.62 |
| **washer machine** | 0.76 | 0.57 | 0.74 | 0.55 | 0.70 | 0.50 |
| **refrigerator** | 0.90 | 0.63 | 0.90 | 0.60 | 0.88 | 0.63 |
| **boiler** | 0.54 | 0.54 | 0.48 | 0.55 | 0.47 | 0.52 |
| **vacuum** | 0.13 | 0.67 | 0.11 | 0.72 | 0.08 | 0.72 |
| **toaster** | 0.17 | 0.58 | 0.14 | 0.58 | 0.10 | 0.64 |
| **piped water** | 0.94 | 0.56 | 0.95 | 0.37 | 0.90 | 0.54 |
| **bathroom** | 0.86 | 0.57 | 0.82 | 0.54 | 0.79 | 0.52 |
| **electricity** | 0.99 | 0.11 | 0.97 | 0.49 | 0.98 | 0.37 |
| **telephone** | 0.44 | 0.52 | 0.35 | 0.54 | 0.22 | 0.60 |
| **domestic service** | 0.07 | 0.60 | 0.06 | 0.61 | 0.03 | 0.62 |
| **car** | 0.50 | 0.45 | 0.45 | 0.48 | 0.38 | 0.41 |
| **savings** | 0.13 | 0.51 | 0.12 | 0.60 | 0.10 | 0.46 |
| **bank account** | 0.04 | **0.76** | 0.02 | **0.80** | 0.02 | **1.10** |
| **credit card** | 0.11 | 0.57 | 0.11 | 0.62 | 0.08 | 0.68 |
| **crowding index** | 2.34 | -0.11 | 2.56 | -0.14 | 2.73 | -0.10 |
| **computer** | 0.42 | 0.59 | 0.33 | 0.61 | 0.22 | 0.73 |
| **vcr or dvd** | 0.69 | 0.46 | 0.71 | 0.48 | 0.68 | 0.52 |
| **microwave oven** | 0.47 | 0.57 | 0.45 | 0.55 | 0.42 | 0.56 |
| **cable** | 0.28 | 0.55 | 0.30 | 0.53 | 0.23 | 0.61 |
| **cell phone** | 0.62 | 0.46 | 0.67 | 0.45 | 0.64 | 0.52 |
| **internet** | 0.32 | 0.63 | 0.25 | 0.68 | 0.16 | 0.77 |

[20] We exclude the variables ownership of a country house, ownership of an apartment for rent and ownership of stocks because less than 2% of parents of respondents of each birth cohort own these assets.

## Table 7
## Parents' Wealth Index by respondents' birth cohort

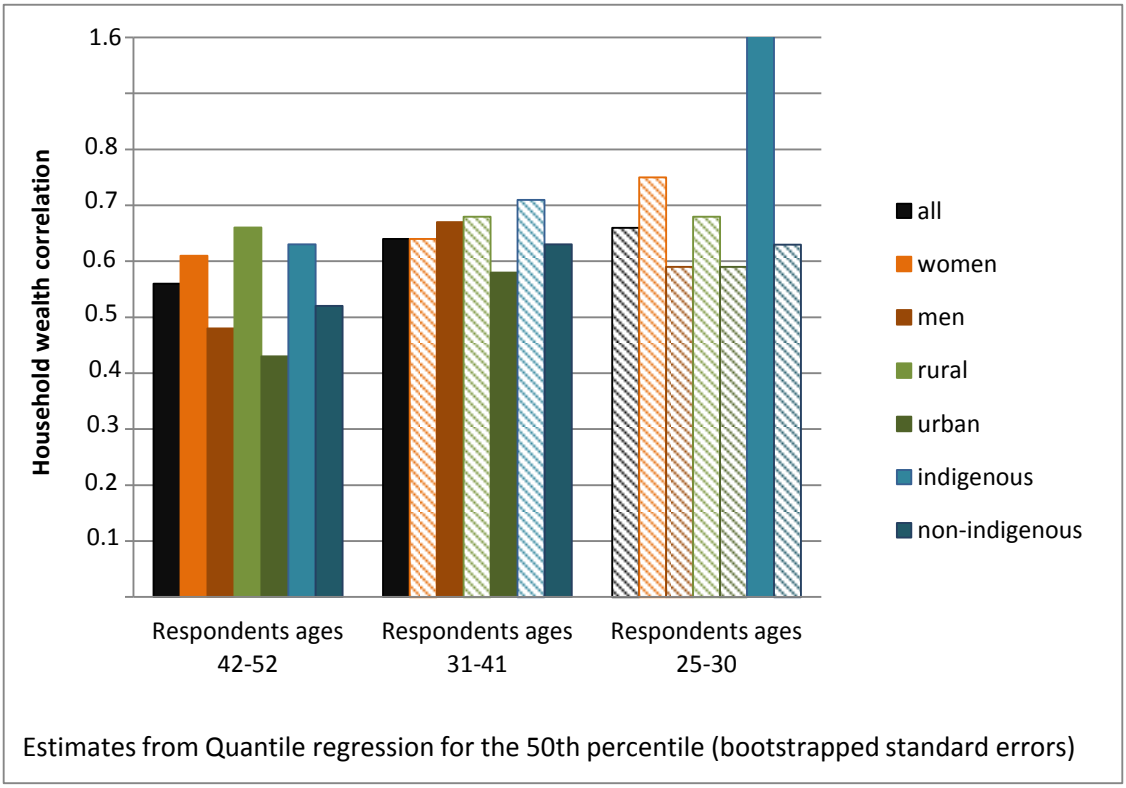
| Variable | Parents of respondents ages 42-52 (1,746 obs.) | | Parents of respondents ages 31-41 (2,024 obs.) | | Parents of respondents ages 25-30 (1,589 obs.) | |
|---|---|---|---|---|---|---|
| | Mean | Weight/S.D. | Mean | Weight/S.D. | Mean | Weight/S.D. |
| **house** | 0.69 | **0.00** | 0.73 | **0.01** | 0.72 | **0.11** |
| **stove** | 0.56 | 0.54 | 0.72 | 0.48 | 0.78 | 0.42 |
| **washer machine** | 0.20 | 0.77 | 0.29 | 0.59 | 0.37 | 0.47 |
| **refrigerator** | 0.43 | 0.62 | 0.56 | 0.52 | 0.63 | 0.42 |
| **boiler** | 0.19 | 0.77 | 0.25 | 0.64 | 0.29 | 0.45 |
| **vacuum** | 0.03 | 1.29 | 0.05 | 1.28 | 0.05 | 0.64 |
| **toaster** | 0.05 | 1.18 | 0.07 | 1.02 | 0.07 | 0.81 |
| **piped water** | 0.63 | 0.51 | 0.74 | 0.43 | 0.77 | 0.37 |
| **bathroom** | 0.45 | 0.56 | 0.55 | 0.50 | 0.56 | 0.37 |
| **electricity** | 0.78 | 0.51 | 0.87 | 0.44 | 0.90 | 0.38 |
| **telephone** | 0.11 | 1.01 | 0.15 | 0.73 | 0.15 | 0.73 |
| **domestic service** | 0.05 | 1.16 | 0.04 | 0.93 | 0.01 | 1.09 |
| **car** | 0.20 | 0.66 | 0.20 | 0.54 | 0.22 | 0.51 |
| **savings** | 0.03 | 0.81 | 0.04 | 0.82 | 0.04 | 1.12 |
| **bank account** | 0.02 | **1.57** | 0.02 | **1.49** | 0.02 | **1.75** |
| **credit card** | 0.02 | 1.39 | 0.02 | 1.29 | 0.03 | 1.40 |
| **crowding index** | 3.89 | -0.07 | 3.55 | -0.06 | 3.04 | -0.08 |
| **computer** | | | 0.02 | 1.43 | 0.04 | 1.34 |
| **vcr or dvd** | | | 0.17 | 0.64 | 0.25 | 0.55 |
| **microwave oven** | | | 0.08 | 0.96 | 0.14 | 0.79 |
| **cable** | | | 0.03 | 1.03 | 0.05 | 1.11 |
| **cell phone** | | | | | 0.13 | 0.68 |
| **internet** | | | | | 0.05 | 0.94 |

We estimate wealth persistence or immobility between parents and children where in model (1) $S_{i,t}$ and $S_{i,t-1}$ refer to the asset index of the respondents and the asset index of their parents, respectively. The parameter $\beta$ is a measure of the association of individuals' adult wealth with their parental families' wealth at the same household life cycle stage. The asset indexes are scaled to have means of zero and standard deviations of one. Graph 6 presents the estimated wealth persistence for the four birth cohorts and different population groups for the 50$^{th}$ percentiles.

Household wealth of older generations is less dependent on their families' wealth. For individuals at the median of the wealth distribution, intergenerational wealth mobility is slightly higher when old. The persistence coefficient is 16-16% lower for the oldest generation, $\beta = 0.56$, compared to that for the two younger generations, $\beta = 0.64$ and $\beta = 0.66$. The same pattern is observed for the

vulnerable groups: women, individuals who were raised in rural areas and indigenous people.

**Graph 6**
**Intergenerational wealth persistence: assessment for the 50th percentile**



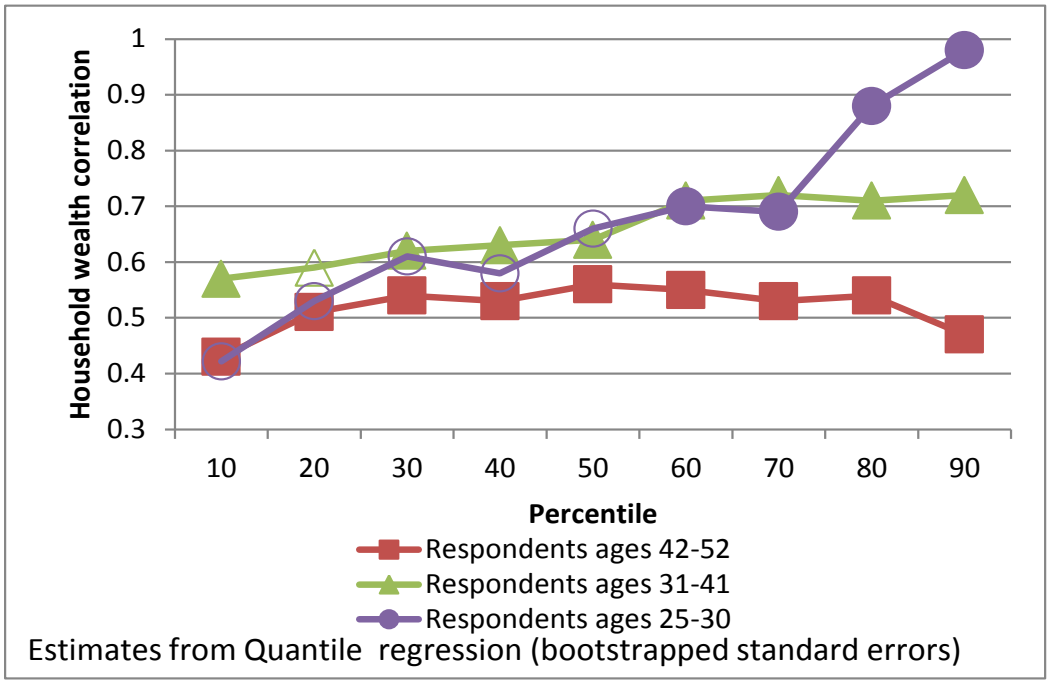

Estimates from Quantile regression for the 50th percentile (bootstrapped standard errors)

Torche (2010) also estimates an index to measure the relative economic mobility between parents and children using data from the EMOVI-2006. As opposed to our index, her's is constructed not only on the basis of household services and assets, but also includes the occupational status of the head of household. To correct for the bias caused by measuring the variables at different points in the life cycle, she controls for individuals' ages. Then, she predicts what the index would have been individuals had been 40 years old. By applying Quantile Regression, she estimates a persistence coefficient of $\beta = 0.655$ for the 50th percentile of the index distribution, which is very close to the value we estimate for the median respondent for individuals ages 31-41($\beta = 0.64$) .

As previously mentioned it is often argued that intergenerational mobility differs at the low or high ends of the distribution versus at the median. To test this, wealth persistence is estimated for the deciles of the index distribution (see Graph 7). Patterns differ with the cohort but differences are more marked at the high ends of the distribution. For all generations and until decile 5, mobility decreases with the decile. Then, at the top deciles of the distribution, mobility of individuals ages 25-30 decreases, while that of individuals ages 31-41 stays constant and that of individuals ages 42-52 increases. Also, at the high end of the

wealth distribution, mobility increases with the age of the head of household as it does for the median respondent.

**Graph 7**
**Intergenerational household wealth persistence for different percentiles of the distribution**




The nonlinear pattern in the association of income between parents and children has been documented by several studies on intergenerational mobility for developed countries such as Denmark, Finland, Norway, Sweden, and Canada. It has been argued that top earners are more dependent on their family background because high income parents are either relatively more talented -and pass on to their children these abilities- or invest more resources, monetary and non-monetary, for supporting children's human capital formation (Corak, 2013). We found that the parental dependence is strong amongst high income children at early stages of their life cycle, but it decreases with the age.

## 4. Conclusions

This paper presents estimates of intergenerational schooling, occupational and household wealth mobility for Mexico. We use the EMOVI-2011, a nationally representative survey with retrospective questions that capture adult children and parental information on schooling, employment and assets for a sample of men and women between 25 and 64 years old. We studied mobility patterns across generations (respondents ages 25-30, 31-41, 42-52, and 53-64). We found that individuals have experienced upward intergenerational absolute mobility for the three outcomes, but the patterns of relative mobility differ by outcome. Therefore,

to judge policies to address social mobility or even simply to predict what social mobility is, it is important to recognize the multiple dimensions and to be clear how they are being weighted. Subsequent questions on the optimal rate of social mobility may be addressed in future research.

Individuals have experienced absolute upward schooling mobility over the years; children have at least four grades of schooling more than their fathers. Intergenerational relative schooling mobility at the median increased steadily over the years going from a persistence coefficient of $\beta = 0.68$ for the oldest generation to $\beta = 0.33$ for the youngest generation, which corresponds to a decrease in persistence of 51%. That is, the association of parental educational background with their children's educational attainment has decreased across generations. This increasing trend in relative mobility can be observed for every subgroup of the population. Within each generation, relative mobility along the schooling distribution has been roughly constant, which suggest that more schooled children are as likely as less schooled children to end up in the same parental position along the completed grades of schooling distribution.

Because about half of women report being a housewife, which is not a remunerated job, we measure occupational mobility for men only. The median respondent for every generation and population subgroup has experienced upward absolute occupational mobility. The groups with the lowest ISEI88 have been consistently the groups of individuals from rural areas and people with an indigenous origin for both children and fathers. The group of individuals from urban areas is the one with the highest index. Intergenerational relative occupational mobility increases with the age of the median respondent. The persistence coefficient for the oldest generation ($\beta = 0.21$) is 35-50% lower than that for individuals ages 31-41 and 42-52 ($\beta = 0.4$ and $\beta = 0.33$, respectively). For individuals raised in rural areas, relative mobility stays more or less constant along the life cycle and for individuals with an indigenous origin, it is significantly lower when old. The level of intergenerational occupational mobility differs notably at different points of the distribution. Individuals' occupational choice is more dependent on their fathers' occupation at the top end of the distribution.

There has been upward absolute mobility in household wealth. The asset index for the median individual increased from -1.26 for the oldest generation to 0.51 for the youngest generation, a change of 0.79 standard deviations in the asset index defined across the generations. The same pattern is observed for the different population subgroups, except for indigenous people who experienced a decline in household wealth from the third to the youngest generation. For individuals at the median, intergenerational household wealth mobility is slightly higher when old. That is, wealth of older generations is less dependent on their families' wealth. The persistence coefficient is 16-16% lower for the oldest generation, $\beta = 0.56$, compared to that for the two younger generations, $\beta = 0.64$ and $\beta = 0.66$. The same pattern is observed for the vulnerable groups: women, individuals who were raised in rural areas and indigenous people. Parental dependence is strong amongst high income children at early stages of their life cycle, but it decreases with the age.

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