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Claudio Sapelli

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*csapelli@faceapuc.cl

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THE EVOLUTION OF THE INTERGENERATIONAL MOBILITY OF EDUCATION IN CHILE BY COHORTS: FACTS AND POSSIBLE CAUSES

Claudio Sapelli*
Economics Department
Pontificia Universidad Católica de Chile

We estimate the evolution of intergenerational mobility of education in Chile for synthetic cohorts born between 1930 and 1978. The correlation coefficient between children and parent education falls from 0.67 for the cohort born in 1930 to 0.41 for that born in 1956, followed by stagnation. We test three explanations for this evolution. The first that mobility was driven by laws that made further education mandatory. The second that mobility stopped because of a financial restriction either at age 18 or at birth. Finally, we test whether the increase in single parent households explains the stagnation in mobility.

Keywords: Intergenerational mobility, Synthetic cohorts and Education

JEL Classifications: J62, I20

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ABSTRACT

In this paper we estimate the evolution of the intergenerational mobility of education in Chile. Even though there have been estimates of the intergenerational mobility of education before, these estimates were for one single year. Here we estimate its evolution for synthetic cohorts born between 1930 and 1978. We do so for three different data sets and obtain practically identical results for all three. We find a sharp and continuous fall from 0.67 for the cohort born in 1930 to 0.41 for the cohort born in 1956, followed by a stagnation of the mobility from then on. To find an explanation for this we study the evolution of educational attainment and examine how it has evolved for children of parents with different educational levels. We conclude that one key factor in stopping the increase in educational mobility has been the difficulty in accessing college by children of parents with low educational attainment.

The second part of the paper attempts to explain this evolution. We test three possible explanations. The first is that when mobility increased, mobility was driven by laws that made further education mandatory. We find this hypothesis has practically no explanatory power. The second tests the idea that mobility stopped increasing when increased mobility implied middle class children had to go into college and they faced a financial restriction. We test this hypothesis against the alternative hypothesis that what matters are financial restrictions around the date of birth (that, through a production function "a la Heckman" where human capital formation at all ages are strong complements implies very low rates of return to college). We find that the latter restriction is more important. Finally, our third hypothesis tests whether the increase in single parent households explains the stagnation in mobility. We find that when we use that series by itself to explain mobility it has substantial explanatory power. However, when we include this variable together with the financial restrictions at college entry age and at birth, these latter restrictions leave family composition with no explanatory power.

Hence we find that the reason behind the stagnation lies in Chile's economic stagnation in the years following the Second World War. Hence it could be expected that cohorts born beyond 1978 (cohorts we are not able to study) and in particular after the economic boom that started in the mid eighties may resume the increase in mobility followed up to the cohort born in 1956.

I. INTRODUCTION

In this study we examine the evolution of intergenerational mobility of education for cohorts born between 1930 and 1978. These cohorts went through the educational system between 1936 and 2002. The key conclusion is that mobility has significantly improved and has reached levels that could be considered high in international comparison for those cohorts born from the mid fifties onwards. We also detect bottlenecks that have detained the increase in mobility, most importantly, access to college.

To arrive at these conclusions we first estimate the regression coefficient of the child's education on the parent's education. We then complement this analysis by examining 1) how educational attainment has evolved: mean and distribution; and 2) how the educational attainment of children has evolved when examining it according to parent's education.

Our results show that the regression coefficient declines for cohorts born between 1930 and 1957, but this stops (the regression coefficient remains basically constant) for cohorts born between 1958 and 1978 (there is some further decline but it is small). These would have had to access tertiary education from 1976 to 1996.

Through the analysis of the education data we examine we attribute this break in the increase of educational mobility to the difficulty of certain groups to access tertiary education. For the cohorts we study, access to tertiary education depends strongly on family background. It should be noted that there is an important development of scholarships and private supply of tertiary education (cheaper and/or with less requirements) that are not relevant for most of the cohorts we study here.

We attempt to explain the evolution of access to tertiary education for children of parents with incomplete primary school and of parents with complete primary or incomplete secondary school. We find that the variable that best explains this evolution is the income of parents when children were born. These students enter the educational system with a low level of human capital which makes future investments less productive, and since the Chilean educational system is not able to make up for this handicap (and may even worsen it) these children arrive to the end of high school with low productivity of human capital investments. Hence tertiary education may not be profitable for them, i.e. they may be better off with on the job training.

This paper is organized as follows. Section II presents a brief discussion of the existing literature in Chile and Latin America; Section III describes the data; Section IV presents the results of the empirical analysis for the evolution of educational mobility; Section V tests several hypothesis to explain that evolution; and Section VI concludes.

II. LITERATURE REVIEW (To be included)

III. The Data and Empirical Strategy

To study the evolution of educational mobility in Chile, we use the Encuesta de Protección Social (EPS) of 2002 and 2004. We also use the CASEN and the Encuesta de Movilidad Social de Chile (EMSC) but do not discuss these results since they are practically identical to those obtained by the EPS. We include all the cohorts born between 1931 and 1978. In total we have 73493 data for the education of the child and his parents[1].

What we do first is to estimate a regression between the education of the parent and his child. We report both the regression coefficient and the elasticity. This is what is most frequently done in the literature to analyze mobility.

We then try to understand this evolution through a detailed analysis of the education data: 1) the evolution of the distribution of education in the population; and 2) educational attainment by educational level of the parents. We chose to analyze this data using four educational levels (the data does not permit us to study all levels individually so we need to aggregate). The aggregation is done using the results of Sapelli 2003, by aggregating years that have similar rates of return. This results in four educational levels: 1) incomplete primary education (1-6 years); 2) incomplete secondary school (we use here the old definition of high school: 7-11 years); 3) complete high school (at least 12 years); and 4) incomplete tertiary education (at least 13 years or more; this includes complete tertiary education).

For each cohort we compute the percentage of children that achieve a certain level for each of the educational levels that the father has achieved. In some ways this can be assimilated to a transition matrix for education. We analyze this by looking at the educational attainment with respect to the entire cohort's population (the unconditional attainment) and by looking at attainment with respect to the group that has achieved the level directly preceding (conditional attainment).

Using these methods we are able to describe the evolution of education and the way its dependence with respect to family background has changed. This we do in the next section.

[1] We work with three different data sets, but only report here the results for one of them. Two of the data sets (CASEN and EMSC) do not have sufficient data by cohort and hence require the aggregation of different cohorts to obtain statistically significant results. The third (the EPS) does allow us to work with each cohort individually and it is these results that we report. The results with the three data sets follow very similar patterns. We also study mobility of the child's education with respect to both the father's and the mother's education, but only report here the results regarding the correlation with the father's education. This is because when we include both parents' education in the regression, only the father's education is statistically significant. In any case, results for the mother and the father are very similar.

IV. Empirical Results

a.- Description of the Changes in the Distribution of Education

The mean education by cohort has increased from 6 years for the 1930 cohort to 11.7 for the 1978 cohort (see table 1 and figure 1). Figure 1b shows two different stages in this evolution, there is a sharp expansion of the mean between the cohorts born in 1930 and 1957. During this first stage the mean education for the cohort jumps from 6 to 10 years (at a rate of growth of 1.8% per year). For those cohorts born between 1958 and 1978 the rate of growth was much slower (0.8%).

b.- Intergenerational correlation of education

We run regressions both in levels and in logs. The coefficient (in levels) graphed in figure 3 (results in table 3), shows two stages. A first stage between 1930 and 1957 in which the coefficient drops from 0.67 to 0.41 (a decrease in the dependence of the education of the child on the education of the father, hence an increase in mobility). In a second stage from then to 1978, the coefficient drops only slightly and is practically constant. We find then that the stage where the mean grew substantially is also the stage when mobility increased. When the mean education grew more slowly, mobility stopped increasing.

We also ran the regression in logs, and can look at the evolution of mobility in terms of elasticities (see table 4 and figure 4). The results are very similar, elasticity falls form 0.5 to 0.29 for the whole period. For the cohorts born between 1930 and 1957 the elasticity falls from 0.5 to 0.24; for cohorts born between 1958 and 1978 the elasticity moves in a narrow range (between 0.26 and 0.29).

These elasticities can be compared to those estimated by Miranda and Nuñez (2006) with a different data set[2]. They find that the elasticity falls from 0.37 to 0.15 in a period we show a fall from 0.35 to 0.26. It should be noted that the level reached for the last cohort in the Miranda-Nuñez study is very low in international comparative terms. While this study concludes that the most recent cohorts have an educational mobility at par with the population mobility of Sweden, Australia or the USA, the Miranda Nuñez study would show mobility is substantially higher in Chile (for recent cohorts).

We tested for nonlinearities in the correlation coefficient but found none. The relationship between parents and children education is linear and does not depend on the level of education of the parent. This would imply that restrictions that occur only for certain parents with certain characteristics like financial restrictions do not appear at first to be plausible explanations of the evolution of mobility. But this is something that requires further testing.

[2] It is different from all three data sets we used; it is based on the employment survey of the U. de Chile where a question was added to inquire about the education of the parents of the persons being interviewed.

c.- Educational attainment of children according to parents' attainment

We estimate how many individuals in one cohort end up in one of the four educational levels according to the educational attainment of the parents. The four educational levels are: those we will say have incomplete primary (have one year of education or more); those that we will say have incomplete secondary (the percentage of the population that has 7 years of education or more), those that have complete secondary (12 years of education or more); and finally those that have incomplete tertiary (13 years of education or more).

The results are presented in table 5 and figure 5. What first strikes when looking at the figure is the fact that attainment has grown for all the population. The percentage having at least one year of education grows from 89% to 99% of the population. Coverage of incomplete secondary grows from 29% in the cohort born in 1930 to 92% for the cohort born in 1978. Coverage of complete secondary also grows substantially (from 18% to 67%). That is, two thirds of the population of the last cohort studied had at least complete secondary. The percentage of the population that has at least one year of tertiary education also grows sharply: from 7% to 28%.

These percentages grow in a similar pattern as the other data we have analyzed: first sharply and then much more moderately.

In the first stage the rates of growth of the coverage percentage are: 0.3%, 3.6%, 3.5% and 3.1% for the four educational levels. In the second stage (1958-78) these percentages drop to 0%, 0.9%, 2% and 2.9%. The only rate of expansion that is not substantially lower and actually is similar in both stages is that for tertiary coverage (3.1 vs. 2.9%).

Up to now all these different ways of looking at the data tell us a similar story but we have not yet been able to understand why this happened. Our first attempt at doing so will imply looking at this same data but classifying children's coverage according to parents' educational coverage.

Children are classified in educational categories in such a way as to be present in the highest category they achieved and in all those categories bellow it. Parents' coverage however is classified into non overlapping categories: only in the category which represents their highest level achieved.

One of the issues we will pay attention to is whether the increase in coverage we described earlier is due to: 1) an increase in coverage independent of the education of the parents; 2) an increase in coverage only for children of parents with higher education levels; or 3) an increase in coverage due only to an increase in parents' education, but with the probability of coverage unchanged once one controls for parents education.
XXXXXX
The results we obtain are as follows:

For coverage of incomplete primary:
Coverage increases for children of parents with all education levels, converging to 100% for all of them (except for children of parents with incomplete primary where it reaches

98%). Hence we can say that the probability of having at least one year of education is independent of family background. (see table 7, figure 7a).

For coverage of incomplete secondary:
Here we also observe a strong tendency to both increase and converge in time (see table 7 and figure 7b). The convergence is total for children of parents with 7-11, 12 and 13+ years of education. Even though convergence is strong for children of parents with 1-6 years of education for the cohort born in 1978 there still is a large gap in coverage. The level of coverage for the children of parents with the 3 higher levels of education (7+ years of education) converges to 98%. For the children of parents with 1-6 years of education the level of coverage reached for the cohort born in 1978 is 84%[3].

As all other data we have examined we find the same change of pace between cohorts born before and after 1957. This is particularly true for the increase of coverage for children of parents with 1-6 years of education. This implies that the overall rise in coverage occurs during the first stage principally because coverage grows for all levels of parental education, but then it continues growing only because parents change educational levels to a level with a higher probability of coverage.

For coverage of complete secondary:
Here we start seeing noticeable differences in how coverage evolves for children with different parental education. This translates into a lack of convergence. It is not as the previous two groups where convergence was practically complete or partial, we plainly see no convergence (see table 7 and figure 7c). Coverage grows but when we look at it conditional on parental education then coverage for the four groups rises in parallel lines. However, there is some convergence before 1957. Coverage grows at rates of 4.6%, 3%, 1.2% and 1.5% (for the four educational levels, ordered from less to more educated) showing a negative relationship between coverage growth and parental education that justifies the existence of convergence.

In the second stage, for cohorts born between 1958 and 1978, the coverage differences by parental education tend to persist (or to close much more slowly). Coverage grows at rates of 1.8%, 0.3%, 1.1% and 0.2%.

Coverage of incomplete tertiary:
This is possibly the most interesting of all the tendencies we have analyzed (see table 7 and figure 7d). We do not see convergence but divergence (or stability followed by divergence).

Coverage for children of parents with 1-6 years of education grows very slowly during the whole period, from 5% to 10%. Coverage for children of parents with 7-11 years of education grows form 14% to 33% and for those of parents with 12 years it grows from

[3] The group of parents with 1-6 years of education is decreasing throughout the period under analysis. We are assuming that the mean parent quality in the group is the same throughout. However, it is possible that as the group gets smaller parent quality in the group declines. Since we have no way to control for this possible selection we will assume that parent quality is unchanged.

17% to 51%. The first two coverage rates double each other but the third triples itself. For children with parents with 13+ years of education the rate also more than doubles, from 37% to 81%. But possibly the most interesting differences do not occur from start to finish of the period under study, but in the second stage we have identified (i.e. cohorts born after 1957). The growth of coverage during the first stage is of 3.1%, 2.7%, 2.0% and 2.3% showing actually a small degree of convergence. In the second stage the rate of growth of coverage for the four levels of parental education are: 0.0%, 1.2%, 2.6% and 1.0%, showing divergence.

If one compares the rates of change we have listed, one thing stands out: the relatively large increase in tertiary coverage for the children of parents with complete secondary. That is a key ingredient in the divergence between this group and the children of parents with lower than complete secondary.

Conditional Coverage by parental education

We define three conditional probabilities: 1) the probability of achieving incomplete secondary given you achieved incomplete primary; 2) the probability of achieving complete secondary given that you achieved incomplete secondary and 3) the probability of achieving incomplete tertiary given that you achieved complete secondary. Results are presented in table 8 and figure 8. Conditional coverage has not always increased (as all absolute coverage levels did). This is particularly true of the conditional coverage of tertiary education.

The three conditional %s have grown at different rates that can be seen in the next table.

Cohorts	P(incomplete sec /incomplete prim)	P(complete sec/ Incomplete sec)	P(incomplete tertiary/ comp sec)
Born 1930-1957	3.1%	0.2%	0.1%
Born 1958- 1978	0.8%	1.1%	0.9%

As it can be seen the conditional coverage of tertiary education (and complete secondary) have grown very slowly for the whole period. Hence even though there is a large concentration of persons with complete secondary, the probability that they will go on to tertiary has not grown much in 50 years. (It increases from 36% to 41% in those 50 years).

Table 9 and figures 9a to 9c show the evolution of conditional coverage by parental educational level. The conditional coverage of incomplete secondary is practically identical to the absolute coverage since the coverage of incomplete primary is practically 100% so we will not comment on it.

Figure 9b shows the evolution of the probability of completing secondary given that you have initiated secondary.

The following table shows the growth in the conditional coverage of complete secondary for parents with different educational levels

	Parents with 1-6	Parents w/ 7-11	Parents w/ 12	Parents w/ 13+
Stage 1930-57	0.3%	0.0%	1.6%	1.1%
Stage 1958-78	0.5%	0.0%	0.9%	1.8%

The rates of conditional coverage diverge, more stronlgy in the second stage.

For conditional coverage of incomplete tertiary:
From cohorts born in 1944 onwards (the pattern beforehand is too variable to discuss) shows the following pattern (see table 9 and figure 9c). Conditional coverage for children of parents in the two lower educational level decreases, and for children of parents in the two higher educational levels it increases. Here the rates of conditional coverage diverge throughout.

As we raise the level of parental educational attainment we find less and less convergence in rates, and for tertiary we actually find divergence. Access to tertiary education is blocked for children of parents with less than complete secondary education and has not increased substantially in the last 50 years.

Absolute coverage has increased substantially and constantly along the period under study. But the advance does depend on the education of the father. The increase in opportunities is not the same for children of different educational backgrounds. In particular the increase in coverage of tertiary education has benefited those children of parents with more education. In the next section we will attempt to answer why this is so.

Quantile analysis

Several of the empirical findings imply that different parts of the distribution of education appear to experience different transition probabilities. We use quantile analysis to determine whether this is so. We run quantile regressions. Since our dependent variable is not continuous we use the method proposed by Machado and Santos (2005) to make a discrete variable continuous through a transformation of the form $Z=Y+u$, where Y is the original variable and u a random term with uniform distribution in the interval (0,1). We perform Montecarlo simulations with 100 repetitions.

We find that the correlation coefficient increases for percentiles 5 and 10; is constant for percentile 15 and decreases for the rest of the distribution of education.

During the period there is some interesting dynamics. At first the lowest percentiles showed much higher mobility and then this pattern completely reverses itself and it is the highest percentiles of the distribution of education that show higher mobility. The reversal occurs for cohorts born between 1949 and 1956. Hence the pattern of high mobility is the result of very high mobility at the lower levels of education and the pattern of stagnation corresponds to a period where the highest mobility is found for children of people with most education.

The pattern of the deterioration in the mobility of those less educated is interesting. Percentiles 5 to 45 show increased mobility for cohorts born from 1930 to 1946. From then on to cohorts born in 1956 there is a very sharp deterioration in mobility for the less educated (people that entered the educational system in the period 1952-1962). The other percentiles show mobility increasing persistently for the whole period but they show a jump for cohorts born in 1949-57 (entered the educational system in 1955-1963). There appears to have occurred something in the educational system in the fifties that sharply increased mobility for those more educated and decreased it for those less educated. This in turn implied that the sharp increase in mobility stopped.

Even though it does not fully explain this latter pattern, there is the possibility that it was relatively easy for children of less educated parents to go from having some primary to having some secondary, but that completing secondary and even more so entering tertiary, was a completely different feat. Hence, when the rates of return to education increased after the reforms of the seventies, the ones that took advantage of them where the children of the more educated. Children born in the mid fifties where deciding whether to enter college or not when the reforms took place.

V. How can we explain these patterns?

Three different hypotheses will be tested in this section. The first is that the increase in mobility was only due to the laws that made completion of certain stages mandatory. Hence, since the law only imposed mandatory secondary education very recently (2003), that would be the reason why the increase in mobility lost steam.

A second hypothesis is that credit constraints (either at birth or when the decision to enter college is taken) are behind the changes in the evolution of intergenerational mobility.

Finally there is the possibility that the increase in single parent households has conspired against investment in human capital in the family.

The Effect of the Laws that Impose Mandatory Minimum Education Levels

The laws where approved in 1920 (4 year minimum); 1929 (6 year minimum); 1965 (8 year minimum); and 2003 (12 year minimum). To analyze the effect of these four laws on the evolution of mobility we concentrate on whether they have had an impact on coverage percentages by cohort. We look at this through three different tests.

First, we look at the percentage of each cohort that abides by the mandatory minimum. Second, we do a regression analysis on the group that has 8 years or more (this is the law we have more data for). Finally, we do an event analysis to see whether the law does affect the time series of coverage.

Before we proceed with each of these three analyses, we briefly discuss which cohort will be considered affected by the laws. The laws affect the children in the level immediately preceding the level that becomes mandatory. For example, the law that mandates a

minimum of 6 years of schooling affects those that are in the fifth year of primary school, who would not be able to choose whether to continue or not the next year. Since this law was approved in 1929, it affected those that were in fifth year of primary school at the time. That is, it affects those that where 11 years old in 1929, hence those born in 1918. To generalize, a law approved the year X that mandates level S of schooling will affect those that are 6+(S-1) years old; therefore the first cohort affected is that born in year Y, where year Y is estimated as X - (S-1) – 6, or X - S – 5. The number six introduced in the formula comes from the age of entry in primary school.

This formula tells us then that the 1920 year law with a 4 year minimum affected all cohorts that where born from 1911 onwards; the 1929 law, those born from 1918 on; the 1965 law those born from 1952 on; and finally the 2003 law those born from 1986 on (this law cannot be studied with the present data set).

Percentage of each cohort that abides by the mandatory minimum

We can see the evolution of coverage in table 10 and figure 10 by cohort and in table 11 and figure 11 we can see the same data but ordered around the first cohort affected by the date of approval of the law (T=0).

These figures apparently show that the laws have little to do with the evolution of coverage. For example, the law that established a mandatory minimum of 4 years of education even 26 years after its approval, the 1937 cohort had only 71% of the total abiding by the minimum. The law that established a 6 year minimum had, after 26 years (for the 1944 cohort), 66% of the total abiding by the law. The law that established an 8 year minimum shows acceleration in the percentage that abides by the minimum, but that precedes rather than follows the approval of the law.

The graphs illustrate a situation that we now test empirically with a regression and an event analysis. Both are performed only for the 1965 law that imposes an 8 year minimum, since it is the law for which we have the most observations and the only one for which we have observations both for cohorts not affected and cohorts affected by the law.

Regression analysis

We test for changes in trend for the 1952 cohort and after. The change there is negative; we find that the rate of growth falls after the 1952 cohort. A second empirical work looks for all structural breaks and the analysis of the time series finds three structural breaks: for the cohorts born in 1944, 1953 and 1957. Table 12 shows the regression and figure 12 shows the changes in estimated trend. Again the trend found before 1953 has a higher rate of growth than the trend from that cohort on (up to the 1957 cohort).

Event study

This methodology (McKinlay 1997) is used in finance to study the impact of news, for example, on the value of a stock. Here we use the method to study the impact of the law on the time series of 8 year coverage by cohort. We fit a trend to the trajectory of the variable

previous to the event and test whether the true trajectory after the event deviates from the projection of the time trend followed before the event. Since the percentage of persons with at least eight years of schooling in a cohort is bound by 0 and 100 we fit a lognormal, transforming the dependent variable through a logistic function (Y=ln[X/(1-X)]). This transformation guarantees that the estimated trajectory will converge to 100%. The test, then is whether the law accelerated the convergence with respect to the trend followed before the approval of the law.

We estimate the log normal function $\ln[X/(1-X)] = s + bT + cT^2 + dT^3 + eT^4$
Where X is the percentage of individuals in a cohort that have at least eight years of education, and T is simply a trend. We estimate this function for the data for cohorts born between 1930 and 1951 (before the event) so not to contaminate the trend with the event (this is standard). With this estimate we predict the percentage of coverage for the rest of the period 1952- 1978. We then estimate the prediction error for each cohort (the difference between the prediction and the realization). We test then whether the accumulation of errors is significantly different from zero. The results can be seen in table 13 and figure 13.

After the cohort born in 1956 there is a significant deviation from the projected trend but it is not because the realized trend accelerated; the trend decelerated after the law.

Hence we reject that the laws had any part in the acceleration of intergenerational mobility, and so the lack of new laws does not explain the stagnation of mobility in the most recent cohorts.

The Credit Restriction Hypothesis

The fact that we have attributed the stagnation of intergenerational mobility to a possible bottleneck in access to tertiary education lends itself to a test of the hypothesis that have been used in the US to explain the lack of growth in access to college while rates of return to college grew. Heckman (with different coauthors, see form example Carneiro and Heckman 2002) has postulated that the reason is lack of early investment in human capital (a restriction that occurs around the date of birth of the child). Others (Card, Krueger) have postulated credit constraints at the age of 18, when one decides whether to continue to college or not. Hence we examine whether either of these two credit constraints has an effect on access to tertiary education by children of parents with 1-11 years of schooling. Since we do not have wage data for the parents, what we will do is use a real wage series for non qualified workers (constructed by Diaz and Wagner…). Our dependant variables will be coverage of tertiary education for children of parents with 1-6 years of education and 7-11 years of education. Our explanatory variables will be permanent income at age 18 and at birth (age zero). Permanent income is estimated as the simple average of wages in the 10 years preceding the event (age 18 or zero). Results can be found in table 14 and figures 14a and 14b.

Since we detect a structural break for cohorts born before and after 1956 we use this and hence test for differences in the elasticity of coverage to permanent income before and after that date. Our results are as follows: for the children of parents with 1-6 years of education, between 1930 and 1955 both incomes have a significant effect and of similar magnitude.

After 1956 only the permanent income at birth is statistically significant. Hence the moment when there is a change of trend also coincides with the moment where only the credit restriction at birth is binding.

For children of parents with 7-11 years of education we find that before 1956 only income at 18 is statistically significant and after only income at birth is significant.

Elasticities of coverage wrt permanent income (children of parents with 1-6 years)

	Cohorts born before 1955	Cohorts born after 1956
Income at birth	1.74	0.74
Income at age 18	1.56	-----

Elasticities of coverage wrt permanent income (children of parents with 7-11 years)

	Cohorts born before 1955	Cohorts born after 1956
Income at birth	-----	0.57
Income at age 18	0.78	-----

It is notable that in both cases in the period where we detect the stagnation only income at birth is statistically significant. Elasticities are always higher for the children of parents with the lowest education level.

Is this due to the fact that contemporary financial restrictions where less important for children that made the decision to enter tertiary education from the mid seventies on? It is true that the financial sector was liberalized, but also tertiary education stopped being free. It is possible that a higher demand for tertiary education (due to the high rates of return) made previous accumulation of human capital more binding. Not until supply reacted strongly in a period beyond our time frame would this have stopped being so.

The Effect of Family Structure

Since what we have just proved is that income at birth plays a role in explaining the evolution of educational coverage, other forms of accumulation of human capital may also be important, such as growing up with both parents or only with one. Since the percentage of single parent families has increased strongly, we study if this played a role in the stagnation of intergenerational mobility of education. We first study whether coverage is a function of the percentage of single parent households. Results can be seen in table 15 and figures 15a and 15b (for children of parents with 1-6 years of education and 7-11 years of education). In both cases the percentage of single parent households has a negative and statistically significant effect on coverage. The effect is larger for children of parents with 1-6 years of education. However, we fin that the relationship is strong at the beginning and then fades out. What we do next is test this hypothesis together with the credit restriction hypothesis. When we do that (regression 5) the single parent variable loses explanatory power while the credit restriction variables continue to be statistically significant.

VI. Conclusions

We study the evolution of intergenerational mobility for cohorts born between 1930 and 1978. We find a sharp increase in mobility followed by a long period of stagnation. We tie up this evolution to a bottleneck in the access to tertiary education (and to ending secondary education). This bottleneck appears to be associated strongly with financial constraints at the time of birth and reveals the importance of early interventions.

References (incomplete)

Becker, G. y Tomes, N. (1986), "Human Capital and the Rise and Fall of Families", Journal of Labor Economics, Vol 4, N° 3.

Behrman, J., Birdsall, N. y Székely, M. (1998), "Intergenerational Schooling Mobility and Macro Conditions and Schooling Policies in Latin America", Interamerican Development Bank, Working Paper N°386.

Behrman, J., Gaviria, A. y Székely, M. (2001), "Intergenerational Mobility in Latin America", Interamerican Development Bank, Working Paper N°452.

Binder, M. y Woodruff, C. (2002), "Inequality and Intergenerational Mobility in Schooling: The Case of Mexico", University of Chicago.

Bowles, S. y Gintis, H. (2002), "The Inheritance of Inequality", Journal of Economic Perspectives, Vol 16, N° 3, pp 3-30.

Corak, M. y Heisz, A. (1999), "The Intergenerational Earnings and Income Mobility of Canadian Men: Evidence from Longitudinal Income Tax Data", Journal of Economic Resources Vol 34, N°3, pp. 504-533.

Grawe, N. y Mulligan, C. (2002), "Economic Interpretations of Intergenerational Correlations", Journal of Economic Perspectives, Vol 16, N° 3, pp 45-58.

Ham, S. y Mulligan, C. (2000), "Human Capital, Heterogeneity, and Estimated Degrees of Intergenerational Mobility", NBER Working Paper N° 7678.

MacKinley, C. (1997), "Event Studies in Economics and Finance", Journal of Economic Literature, Vol. XXXV (March), pp.13-39.

Miranda, L. y Núñez, J. (2006), "Recent Findings on Intergenerational Income and Educational Mobility in Chile", Department of Economics, Universidad de Chile.

Solon, G (2002), "Cross-Country Differences in Intergenerational Earnings Mobility", Journal of Economic Perspectives, Vol 16, N° 3, pp 59-66.

Spady, W (1967), "Educational Mobility and Access: Growth and Paradoxes", The American Journal of Sociology, Vol 73, N°3, pp.273-286.

ANEXO de Tablas y gráficos (por separado)

ANEXO 1

COMPARACIÓN DE DISTINTAS METODOLOGÍAS DE MOVILIDAD

ANEXO 2

RESULTADOS CASEN, EMSC, CON MADRES

TABLA 0
DESCRIPCIÓN DE LOS DATOS DISPONIBLES POR COHORTE

Cohorte	N Datos	Ed Promedio Hijo	Ed Promedio Padre
1930	427	6.04	4.50
1931	304	6.08	4.68
1932	527	6.30	4.62
1933	321	6.11	4.40
1934	564	5.84	4.19
1935	460	6.48	4.55
1936	513	6.29	4.51
1937	687	6.28	4.29
1938	580	6.63	4.42
1939	692	6.55	4.39
1940	805	6.49	4.08
1941	588	7.13	4.70
1942	1,119	6.98	4.67
1943	725	7.18	4.97
1944	1,190	7.20	4.78
1945	879	7.31	4.73
1946	1,063	7.54	4.79
1947	1,141	7.83	4.89
1948	1,233	7.89	4.99
1949	1,087	8.15	4.94
1950	1,572	8.44	5.21
1951	1,112	8.71	5.41
1952	1,927	8.82	5.15
1953	1,352	9.31	5.44
1954	2,110	9.15	5.21
1955	1,596	9.60	5.65
1956	1,912	9.42	5.36
1957	2,114	9.88	5.74
1958	1,932	9.76	5.65
1959	2,030	9.70	5.54
1960	2,444	9.79	5.69
1961	1,899	10.19	6.09
1962	2,883	9.93	5.72
1963	2,288	10.13	6.04
1964	2,825	10.04	5.81
1965	2,332	10.12	5.99
1966	2,459	10.26	6.12
1967	2,364	10.37	6.09
1968	2,123	10.51	6.28
1969	2,098	10.82	6.54
1970	2,255	10.72	6.58
1971	1,814	11.05	6.97
1972	2,471	10.94	6.97
1973	1,976	11.32	7.25
1974	2,135	11.29	7.30
1975	1,892	11.47	7.58
1976	1,804	11.55	7.75
1977	1,691	11.71	8.04
1978	1,605	11.57	8.20
	73,920		

TABLA 1

EVOLUCIÓN DE LA MEDIA DE EDUCACIÓN DEL HIJO Y DEL PADRE, CON INTERVALOS DE CONFIANZA

	Educación Hijo			Educación Padre		
	Parámetro	Intervalo Confianza		Parámetro	Intervalo Confianza	
1930	6.040	5.621	6.458	4.503	4.052	4.953
1931	6.079	5.585	6.572	4.680	4.130	5.230
1932	6.296	5.913	6.679	4.622	4.211	5.034
1933	6.109	5.622	6.596	4.398	3.861	4.934
1934	5.842	5.491	6.193	4.194	3.806	4.583
1935	6.480	6.075	6.885	4.554	4.112	4.996
1936	6.292	5.911	6.674	4.514	4.097	4.931
1937	6.277	5.954	6.599	4.291	3.953	4.629
1938	6.631	6.280	6.982	4.419	4.034	4.804
1939	6.546	6.208	6.885	4.387	4.029	4.745
1940	6.486	6.193	6.778	4.081	3.779	4.384
1941	7.126	6.778	7.474	4.696	4.310	5.081
1942	6.983	6.730	7.236	4.673	4.397	4.949
1943	7.182	6.876	7.488	4.971	4.621	5.322
1944	7.202	6.957	7.446	4.781	4.518	5.044
1945	7.312	7.030	7.594	4.733	4.426	5.040
1946	7.543	7.282	7.804	4.793	4.506	5.081
1947	7.829	7.576	8.083	4.894	4.619	5.168
1948	7.891	7.649	8.134	4.994	4.733	5.256
1949	8.145	7.888	8.402	4.937	4.666	5.208
1950	8.444	8.224	8.664	5.214	4.978	5.450
1951	8.713	8.451	8.975	5.412	5.130	5.694
1952	8.817	8.621	9.014	5.147	4.935	5.360
1953	9.305	9.075	9.536	5.435	5.182	5.688
1954	9.155	8.975	9.335	5.208	5.012	5.404
1955	9.600	9.396	9.803	5.652	5.421	5.883
1956	9.425	9.241	9.609	5.362	5.160	5.563
1957	9.883	9.711	10.055	5.740	5.539	5.942
1958	9.757	9.579	9.935	5.647	5.440	5.854
1959	9.698	9.526	9.871	5.540	5.337	5.744
1960	9.786	9.629	9.943	5.685	5.502	5.868
1961	10.194	10.019	10.370	6.091	5.873	6.308
1962	9.926	9.784	10.068	5.721	5.552	5.890
1963	10.129	9.974	10.284	6.038	5.844	6.232
1964	10.042	9.900	10.184	5.810	5.640	5.980
1965	10.124	9.970	10.277	5.987	5.796	6.179
1966	10.256	10.104	10.407	6.123	5.938	6.307
1967	10.375	10.223	10.526	6.093	5.907	6.279
1968	10.514	10.356	10.673	6.279	6.074	6.483
1969	10.823	10.665	10.981	6.536	6.336	6.737
1970	10.724	10.570	10.878	6.582	6.388	6.777
1971	11.046	10.874	11.218	6.969	6.747	7.191
1972	10.943	10.799	11.088	6.973	6.783	7.164
1973	11.325	11.161	11.489	7.251	7.040	7.463
1974	11.290	11.137	11.443	7.304	7.105	7.504
1975	11.474	11.314	11.633	7.576	7.355	7.797
1976	11.548	11.388	11.709	7.753	7.534	7.972
1977	11.714	11.553	11.876	8.043	7.815	8.270
1978	11.568	11.399	11.737	8.200	7.966	8.434

Gráfico 1: Evolución de la Media de la Educación del Hijo y del Padre por cohorte, con intervalos de confianza

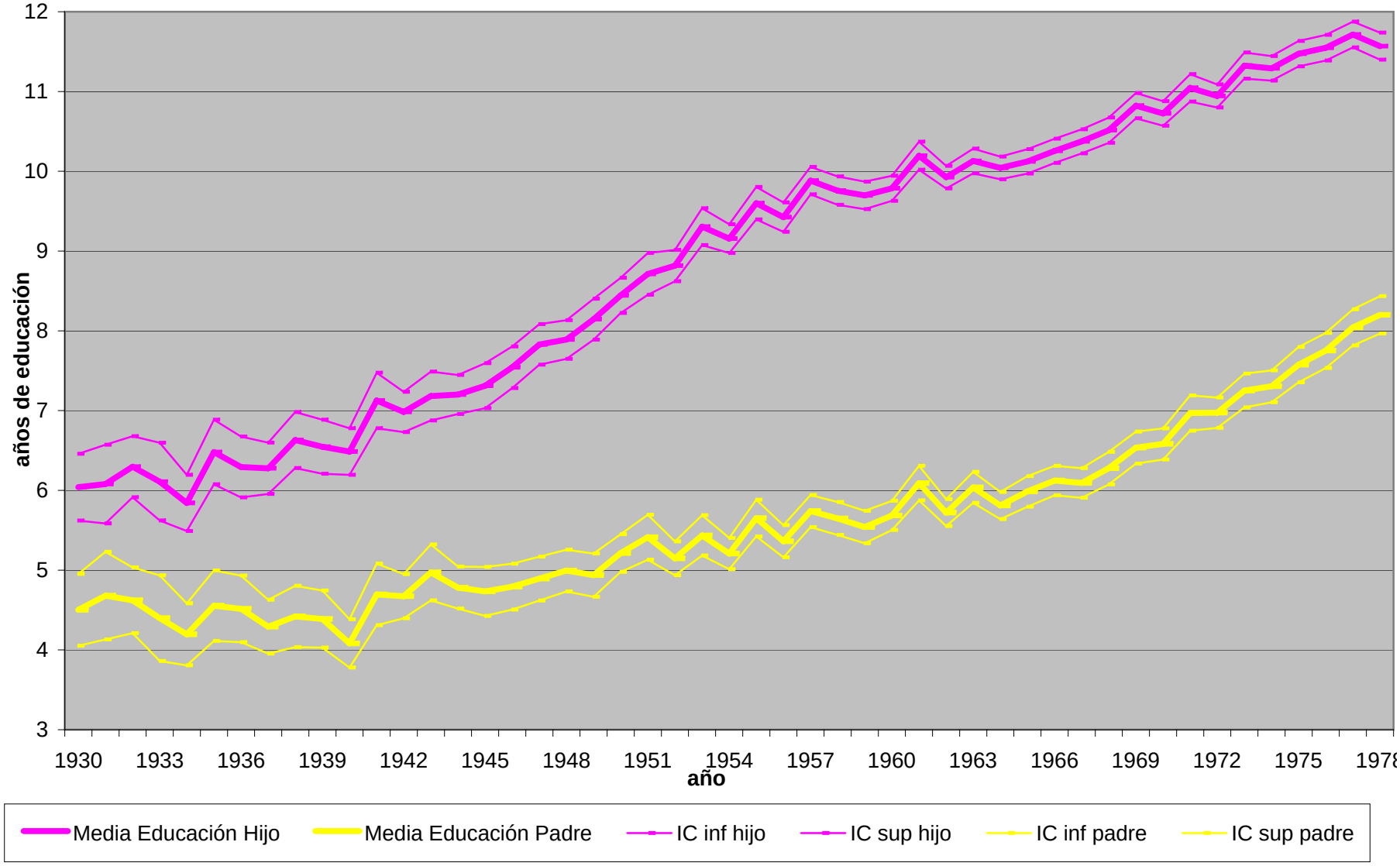


Gráfico 1b: Evolución de la Media de la Educación del Hijo y tendencia

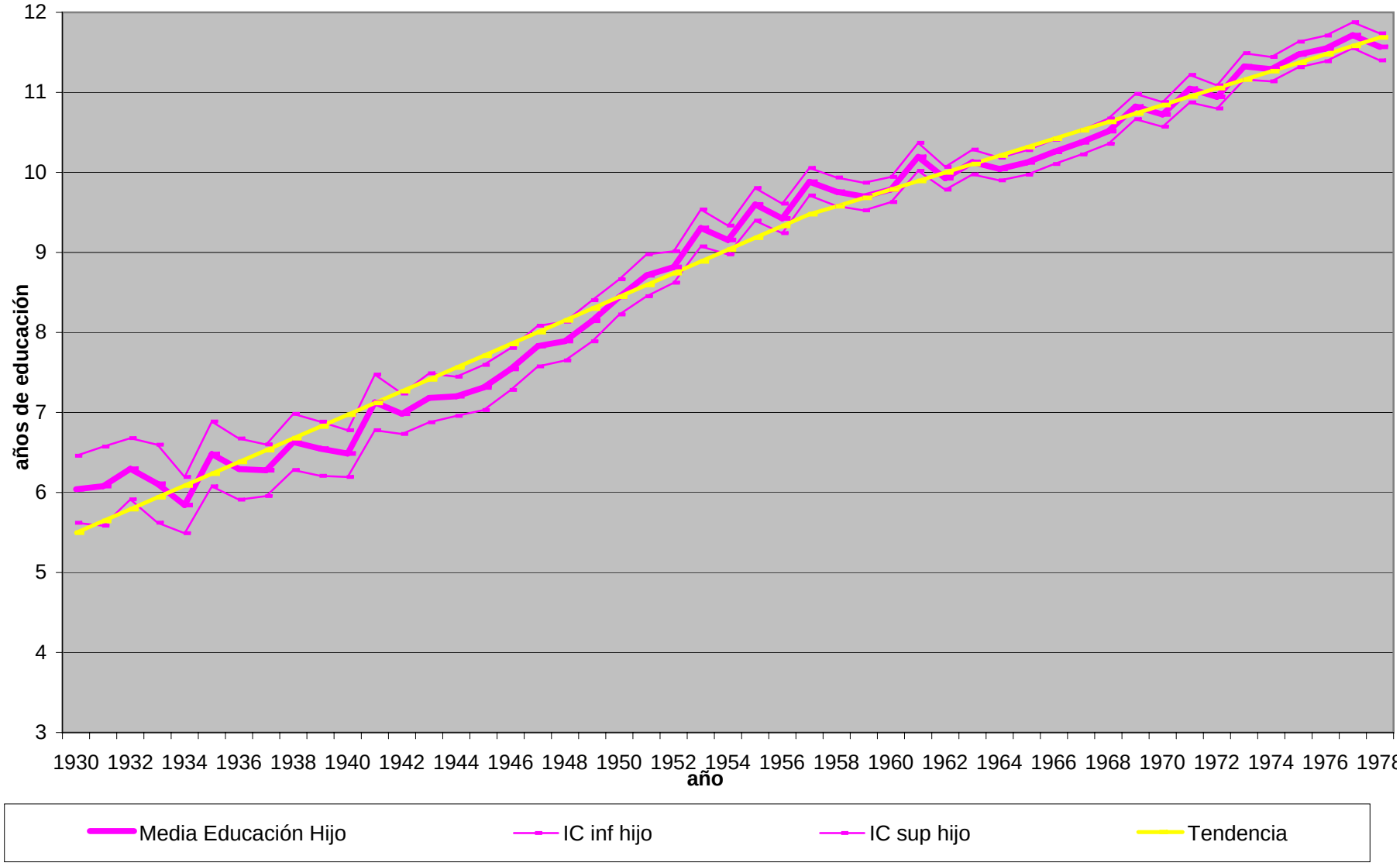
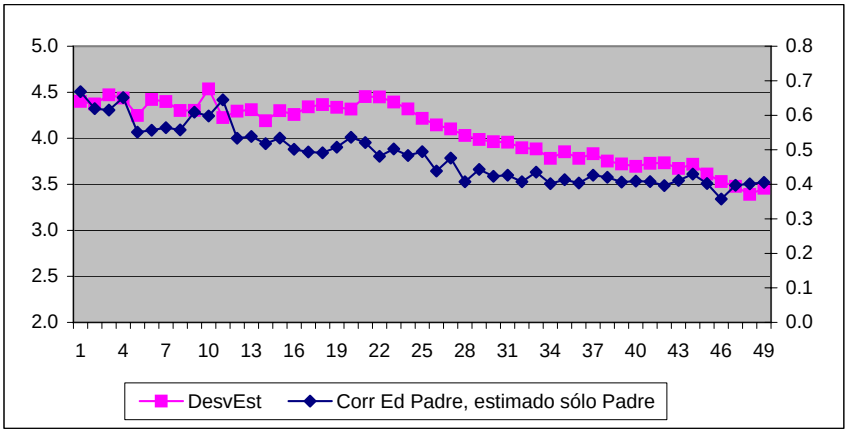


TABLA 2
EVOLUCIÓN DE LA DISTRIBUCIÓN DE EDUCACIÓN DEL HIJO

Cohorte	Mediana	Valor Percentil 10	Valor Percentil 25	Valor Percentil 75	Valor Percentil 90	DesvEst	Moda	% Moda	Corr Ed Padre	DesvEst
1930	6	0	3	8	12	4.40	6	24.4%	0.6682395	4.40
1931	6	0	3	8	12	4.37	6	21.4%	0.6191373	4.37
1932	6	0	3	9	12	4.47	6	23.0%	0.6152096	4.47
1933	6	1	3	9	12	4.44	6	18.4%	0.6510919	4.44
1934	6	0	3	8	12	4.25	6	22.3%	0.5508958	4.25
1935	6	1	3	9	12	4.42	6	21.5%	0.5568453	4.42
1936	6	1	3	9	12	4.40	6	21.1%	0.5640481	4.40
1937	6	1	3	9	12	4.30	6	23.6%	0.5576572	4.30
1938	6	1	3	10	12	4.30	6	23.1%	0.6090537	4.30
1939	6	1	3	10	12	4.54	6	19.9%	0.5980781	4.54
1940	6	2	3	9	12	4.22	6	24.8%	0.6446698	4.22
1941	6	2	4	10	12	4.29	6	20.2%	0.5334373	4.29
1942	6	2	4	10	12	4.31	6	25.5%	0.5386037	4.31
1943	6	3	4	10	12	4.19	6	24.3%	0.5179258	4.19
1944	6	2	4	10	12	4.30	6	24.1%	0.5339734	4.30
1945	6	2	4	11	12	4.26	6	22.0%	0.5015997	4.26
1946	6	3	4	11	12	4.34	6	20.6%	0.4937894	4.34
1947	6	3	5	12	13	4.37	6	22.1%	0.4913277	4.37
1948	7	3	5	12	13	4.34	6	22.2%	0.5075364	4.34
1949	7	3	5	12	13	4.32	6	21.0%	0.5361174	4.32
1950	8	3	6	12	15	4.45	6	18.9%	0.5208721	4.45
1951	8	3	6	12	15	4.45	12	18.3%	0.4811603	4.45
1952	8	3	6	12	14	4.39	12	23.2%	0.5023796	4.39
1953	10	3	6	12	15	4.32	12	25.7%	0.4832871	4.32
1954	10	3	6	12	14	4.22	12	25.0%	0.4946585	4.22
1955	10	4	6	12	15	4.14	12	27.2%	0.4383871	4.14
1956	10	4	6	12	14	4.10	12	26.9%	0.4760235	4.10
1957	10	4	7	12	15	4.03	12	28.6%	0.4072833	4.03
1958	10	4	7	12	15	3.99	12	28.9%	0.4432278	3.99
1959	10	4	8	12	14	3.96	12	28.3%	0.4230928	3.96
1960	10	4	8	12	14	3.96	12	30.4%	0.4264508	3.96
1961	11	5	8	12	15	3.90	12	32.1%	0.4073396	3.90
1962	11	5	8	12	15	3.88	12	30.3%	0.4354133	3.88
1963	11	5	8	12	15	3.78	12	31.0%	0.4020144	3.78
1964	11	5	8	12	14	3.85	12	32.2%	0.4132656	3.85
1965	11	5	8	12	15	3.78	12	32.5%	0.4035168	3.78
1966	12	5	8	12	15	3.83	12	34.3%	0.4264036	3.83
1967	12	6	8	12	15	3.75	12	32.8%	0.4203176	3.75
1968	12	6	8	12	15	3.72	12	34.7%	0.4066203	3.72
1969	12	6	8	12	16	3.69	12	33.4%	0.4092477	3.69
1970	12	6	8	12	16	3.73	12	31.4%	0.4079388	3.73
1971	12	6	8	13	16	3.73	12	31.3%	0.3962039	3.73
1972	12	6	8	13	16	3.67	12	30.8%	0.4110363	3.67
1973	12	6	9	13	16	3.72	12	32.6%	0.4295414	3.72
1974	12	7	9	13	16	3.61	12	33.5%	0.4023085	3.61
1975	12	7	9	13	16	3.53	12	36.0%	0.3573758	3.53
1976	12	7	9	14	16	3.48	12	34.4%	0.39707	3.48
1977	12	8	10	14	16	3.39	12	36.5%	0.4014908	3.39
1978	12	7	10	13	16	3.46	12	39.2%	0.4057428	3.46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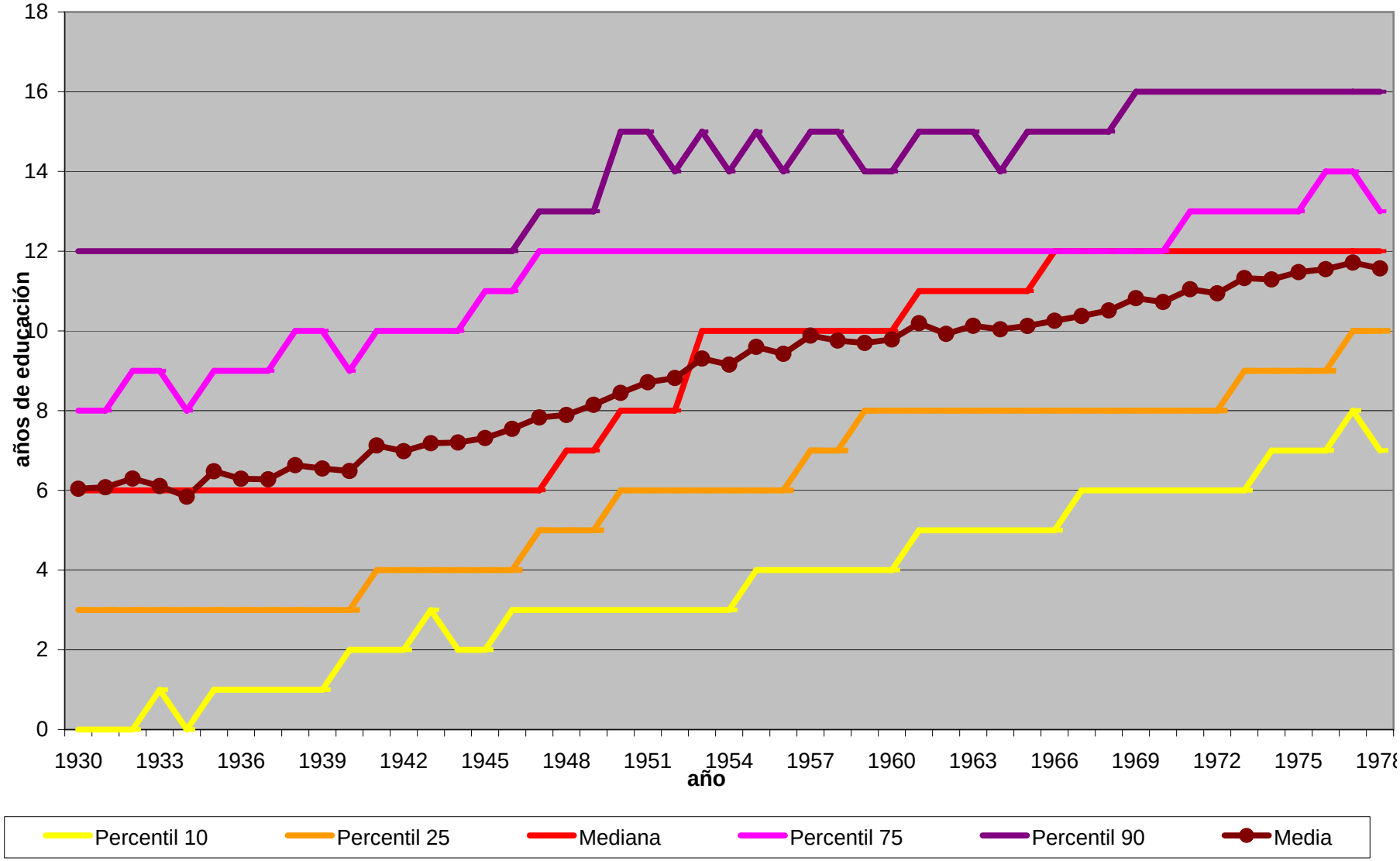
49
DesvEst
Corr Ed Padre, estimado sólo Padre

Gráfico 2: Evolución de la Distribución de Educación del Hijo



REGRESIÓN 1

REGRESIÓN DE LA EDUCACIÓN DEL HIJO, USANDO LA EDUCACIÓN DEL PADRE COMO VARIABLE EXPLICATIVA, POR COHORTE

Number of obs	63445
F(98, 63347)	6040.97
Prob > F	0
R-squared	0.8951
Root MSE	3.4373

educ_hijo	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
d1930	3.301	0.245	13.48	0	2.821	3.780
d1931	3.382	0.319	10.60	0	2.756	4.007
d1932	3.538	0.215	16.45	0	3.117	3.960
d1933	3.368	0.303	11.11	0	2.774	3.963
d1934	3.560	0.204	17.41	0	3.159	3.961
d1935	4.115	0.253	16.26	0	3.619	4.612
d1936	3.937	0.232	16.95	0	3.482	4.393
d1937	4.070	0.207	19.70	0	3.665	4.475
d1938	4.172	0.222	18.82	0	3.738	4.607
d1939	4.046	0.201	20.12	0	3.652	4.440
d1940	4.042	0.167	24.14	0	3.714	4.370
d1941	4.755	0.239	19.87	0	4.286	5.224
d1942	4.467	0.154	29.10	0	4.166	4.768
d1943	4.780	0.203	23.58	0	4.383	5.177
d1944	4.804	0.158	30.39	0	4.494	5.114
d1945	5.121	0.198	25.88	0	4.733	5.509
d1946	5.208	0.174	29.91	0	4.866	5.549
d1947	5.607	0.184	30.55	0	5.248	5.967
d1948	5.449	0.169	32.33	0	5.119	5.779
d1949	5.699	0.183	31.22	0	5.341	6.057
d1950	5.842	0.159	36.81	0	5.531	6.154
d1951	6.284	0.199	31.64	0	5.894	6.673
d1952	6.351	0.145	43.90	0	6.067	6.634
d1953	6.857	0.184	37.27	0	6.496	7.217
d1954	6.650	0.134	49.48	0	6.387	6.913
d1955	7.226	0.165	43.73	0	6.902	7.549
d1956	7.032	0.145	48.47	0	6.748	7.316
d1957	7.723	0.141	54.92	0	7.447	7.999
d1958	7.364	0.143	51.35	0	7.082	7.645
d1959	7.510	0.138	54.52	0	7.240	7.780
d1960	7.454	0.130	57.49	0	7.200	7.709
d1961	7.781	0.146	53.38	0	7.495	8.067
d1962	7.535	0.115	65.56	0	7.310	7.761
d1963	7.802	0.133	58.65	0	7.541	8.063
d1964	7.740	0.119	64.87	0	7.506	7.974
d1965	7.834	0.132	59.27	0	7.575	8.093
d1966	7.758	0.128	60.77	0	7.507	8.008
d1967	7.897	0.131	60.25	0	7.640	8.154
d1968	8.099	0.140	57.87	0	7.824	8.373
d1969	8.216	0.142	57.95	0	7.938	8.494
d1970	8.082	0.136	59.52	0	7.816	8.348
d1971	8.315	0.153	54.17	0	8.014	8.616
d1972	8.155	0.131	62.09	0	7.898	8.413
d1973	8.215	0.150	54.70	0	7.921	8.509

d1974	8.404	0.149	56.27	0	8.111	8.697
d1975	8.774	0.163	53.72	0	8.454	9.094
d1976	8.507	0.164	51.82	0	8.185	8.828
d1977	8.553	0.170	50.32	0	8.220	8.886
d1978	8.281	0.174	47.57	0	7.940	8.622
edpadre1930	0.668	0.050	13.25	0	0.569	0.767
edpadre1931	0.619	0.062	9.95	0	0.497	0.741
edpadre1932	0.615	0.039	15.63	0	0.538	0.692
edpadre1933	0.651	0.052	12.54	0	0.549	0.753
edpadre1934	0.551	0.036	15.10	0	0.479	0.622
edpadre1935	0.557	0.041	13.61	0	0.477	0.637
edpadre1936	0.564	0.043	13.12	0	0.480	0.648
edpadre1937	0.558	0.040	13.98	0	0.479	0.636
edpadre1938	0.609	0.042	14.47	0	0.527	0.692
edpadre1939	0.598	0.043	13.86	0	0.513	0.683
edpadre1940	0.645	0.033	19.43	0	0.580	0.710
edpadre1941	0.533	0.041	13.06	0	0.453	0.613
edpadre1942	0.539	0.028	19.42	0	0.484	0.593
edpadre1943	0.518	0.034	15.07	0	0.451	0.585
edpadre1944	0.534	0.028	19.38	0	0.480	0.588
edpadre1945	0.502	0.033	15.04	0	0.436	0.567
edpadre1946	0.494	0.030	16.54	0	0.435	0.552
edpadre1947	0.491	0.030	16.24	0	0.432	0.551
edpadre1948	0.508	0.025	19.91	0	0.458	0.558
edpadre1949	0.536	0.030	18.07	0	0.478	0.594
edpadre1950	0.521	0.025	21.01	0	0.472	0.569
edpadre1951	0.481	0.029	16.88	0	0.425	0.537
edpadre1952	0.502	0.021	23.53	0	0.461	0.544
edpadre1953	0.483	0.025	19.35	0	0.434	0.532
edpadre1954	0.495	0.019	25.60	0	0.457	0.533
edpadre1955	0.438	0.023	19.37	0	0.394	0.483
edpadre1956	0.476	0.020	23.35	0	0.436	0.516
edpadre1957	0.407	0.018	22.10	0	0.371	0.443
edpadre1958	0.443	0.019	22.81	0	0.405	0.481
edpadre1959	0.423	0.019	21.73	0	0.385	0.461
edpadre1960	0.426	0.018	24.01	0	0.392	0.461
edpadre1961	0.407	0.019	21.98	0	0.371	0.444
edpadre1962	0.435	0.015	29.26	0	0.406	0.465
edpadre1963	0.402	0.017	23.24	0	0.368	0.436
edpadre1964	0.413	0.016	25.54	0	0.382	0.445
edpadre1965	0.404	0.017	23.43	0	0.370	0.437
edpadre1966	0.426	0.016	26.64	0	0.395	0.458
edpadre1967	0.420	0.016	26.66	0	0.389	0.451
edpadre1968	0.407	0.016	24.81	0	0.374	0.439
edpadre1969	0.409	0.017	24.62	0	0.377	0.442
edpadre1970	0.408	0.017	24.70	0	0.376	0.440
edpadre1971	0.396	0.017	23.00	0	0.362	0.430
edpadre1972	0.411	0.014	28.38	0	0.383	0.439
edpadre1973	0.430	0.016	26.12	0	0.397	0.462
edpadre1974	0.402	0.017	23.65	0	0.369	0.436
edpadre1975	0.357	0.018	20.04	0	0.322	0.392
edpadre1976	0.397	0.017	23.02	0	0.363	0.431
edpadre1977	0.401	0.018	22.88	0	0.367	0.436
edpadre1978	0.406	0.017	23.41	0	0.372	0.440

TABLA 3

PERSISTENCIA INTERGENERACIONAL ESTIMADA POR COHORTE, CON INTERVALOS DE CONFIANZA

	Pendiente		
Cohorte	Parámetro	IC inferior	IC superior
1930	0.668	0.564	0.773
1931	0.619	0.490	0.751
1932	0.615	0.535	0.699
1933	0.651	0.544	0.759
1934	0.551	0.476	0.627
1935	0.557	0.472	0.643
1936	0.564	0.473	0.653
1937	0.558	0.474	0.645
1938	0.609	0.523	0.699
1939	0.598	0.508	0.688
1940	0.645	0.576	0.714
1941	0.533	0.447	0.617
1942	0.539	0.481	0.597
1943	0.518	0.446	0.587
1944	0.534	0.478	0.589
1945	0.502	0.431	0.571
1946	0.494	0.433	0.556
1947	0.491	0.428	0.554
1948	0.508	0.455	0.561
1949	0.536	0.475	0.598
1950	0.521	0.470	0.572
1951	0.481	0.421	0.538
1952	0.502	0.457	0.547
1953	0.483	0.432	0.536
1954	0.495	0.453	0.534
1955	0.438	0.392	0.483
1956	0.476	0.434	0.518
1957	0.407	0.369	0.445
1958	0.443	0.403	0.485
1959	0.423	0.382	0.463
1960	0.426	0.389	0.464
1961	0.407	0.370	0.445
1962	0.435	0.405	0.466
1963	0.402	0.367	0.439
1964	0.413	0.380	0.446
1965	0.404	0.369	0.439
1966	0.426	0.394	0.459
1967	0.420	0.389	0.453
1968	0.407	0.372	0.440
1969	0.409	0.374	0.443
1970	0.408	0.374	0.442
1971	0.396	0.359	0.433
1972	0.411	0.381	0.442
1973	0.430	0.395	0.463
1974	0.402	0.366	0.437
1975	0.357	0.322	0.393
1976	0.397	0.361	0.433
1977	0.401	0.364	0.438
1978	0.406	0.369	0.441

Gráfico 3: Correlación entre la Educación del Hijo y la Educación del Padre, con intervalos de confianza

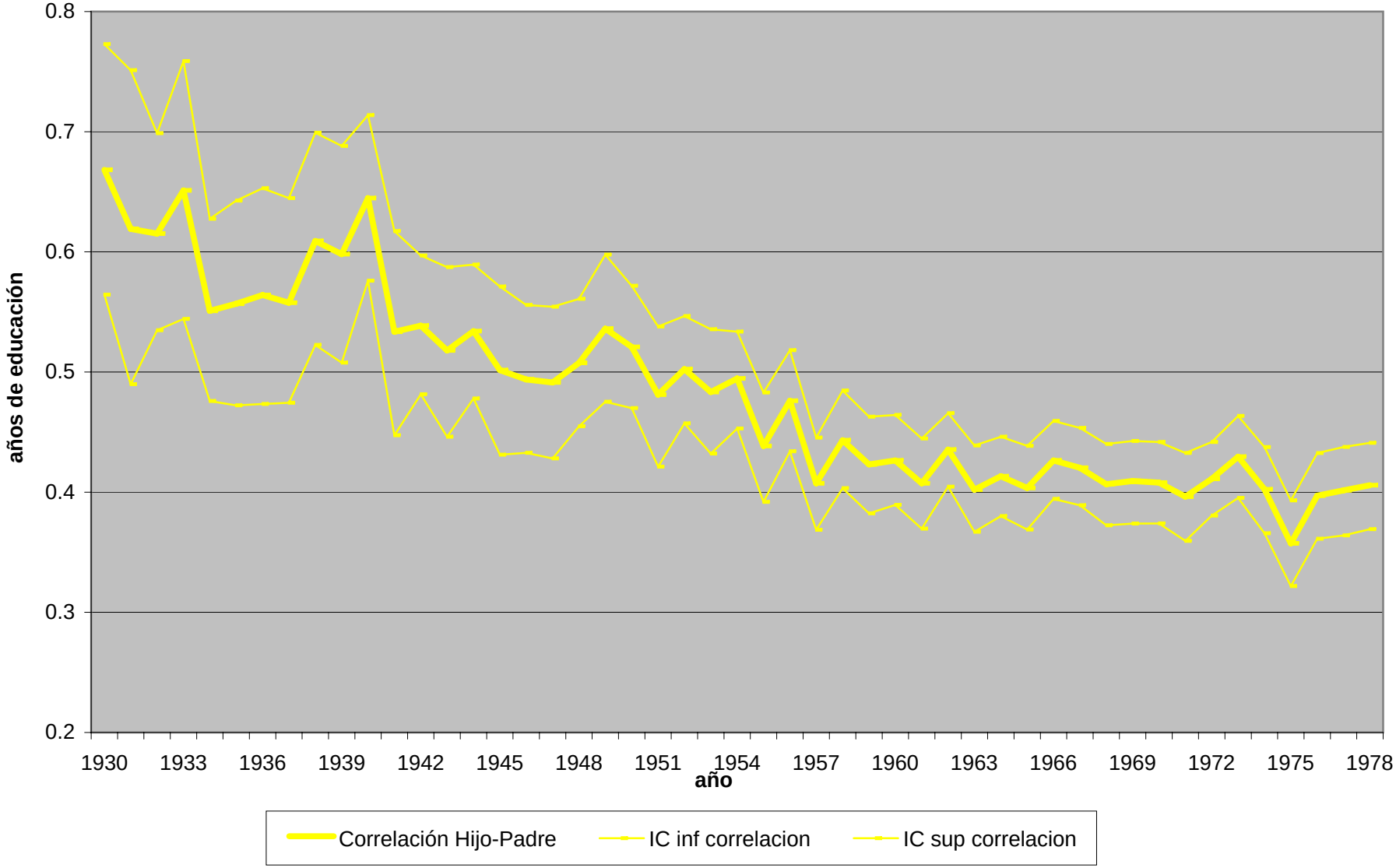


Gráfico 3: Correlación entre la Educación del Hijo y la de su Padre y Tendencia

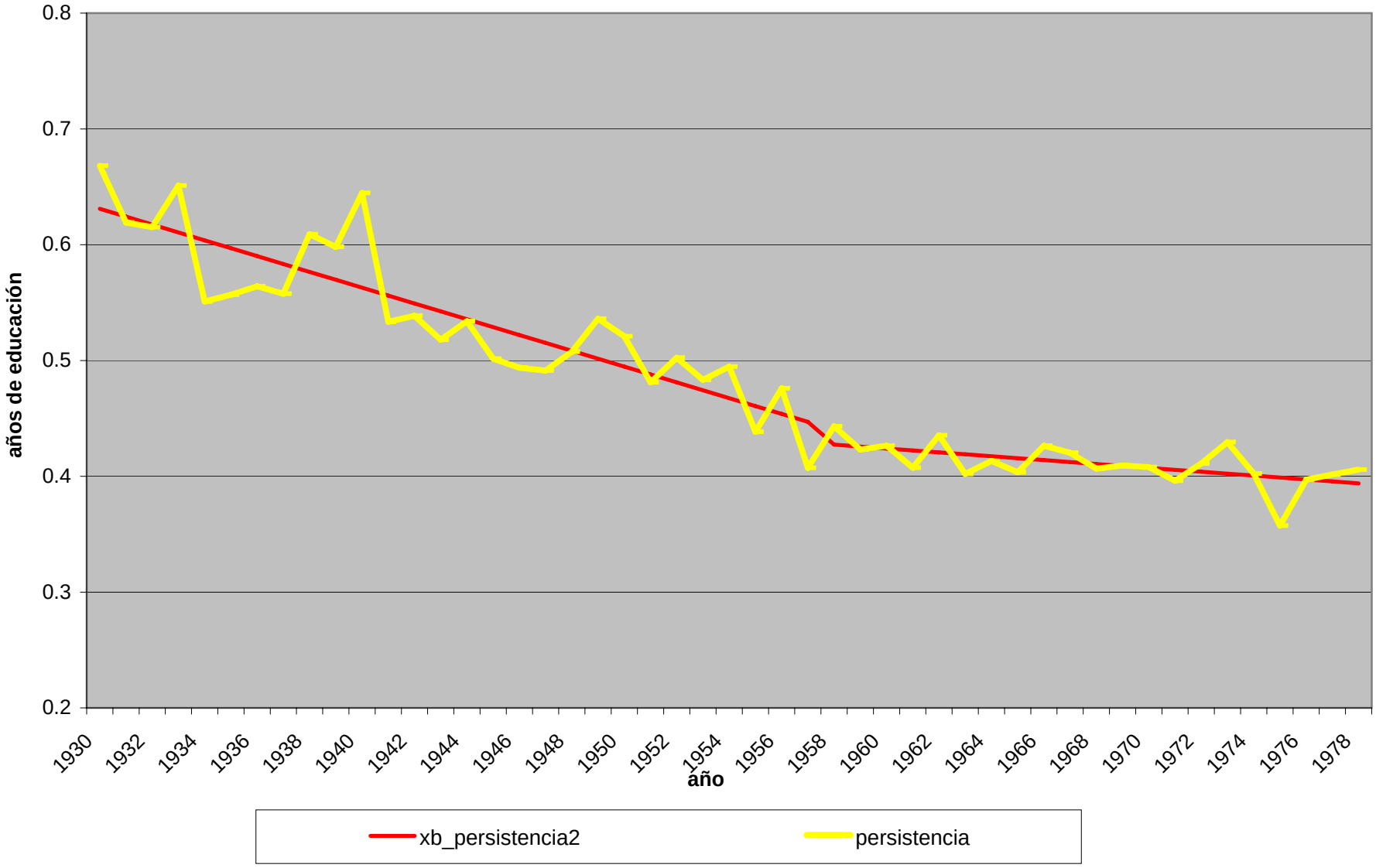


TABLA 4

ELASTICIDAD INTERGENERACIONAL ESTIMADA
POR COHORTE, CON INTERVALOS DE CONFIANZA

	Pendiente		
Cohorte	Parámetro	IC inferior	IC superior
1930	0.498	0.421	0.576
1931	0.477	0.377	0.578
1932	0.452	0.393	0.513
1933	0.469	0.392	0.546
1934	0.395	0.342	0.450
1935	0.391	0.332	0.452
1936	0.405	0.340	0.468
1937	0.381	0.324	0.441
1938	0.406	0.348	0.466
1939	0.401	0.340	0.461
1940	0.406	0.362	0.449
1941	0.352	0.295	0.407
1942	0.360	0.322	0.399
1943	0.358	0.309	0.406
1944	0.354	0.317	0.391
1945	0.325	0.279	0.370
1946	0.314	0.275	0.353
1947	0.307	0.268	0.346
1948	0.321	0.288	0.355
1949	0.325	0.288	0.362
1950	0.322	0.290	0.353
1951	0.299	0.262	0.334
1952	0.293	0.267	0.319
1953	0.282	0.252	0.313
1954	0.281	0.258	0.304
1955	0.258	0.231	0.284
1956	0.271	0.247	0.295
1957	0.237	0.214	0.259
1958	0.257	0.233	0.280
1959	0.242	0.218	0.264
1960	0.248	0.226	0.270
1961	0.243	0.221	0.266
1962	0.251	0.233	0.268
1963	0.240	0.219	0.262
1964	0.239	0.220	0.258
1965	0.239	0.218	0.259
1966	0.255	0.235	0.274
1967	0.247	0.228	0.266
1968	0.243	0.222	0.263
1969	0.247	0.226	0.267
1970	0.250	0.230	0.271
1971	0.250	0.227	0.273
1972	0.262	0.242	0.281
1973	0.275	0.253	0.297
1974	0.260	0.237	0.283
1975	0.236	0.212	0.260
1976	0.267	0.242	0.290
1977	0.276	0.250	0.300
1978	0.288	0.262	0.313

Gráfico 4: Elasticidad entre la Educación del Hijo y la Educación del Padre, con intervalos de confianza

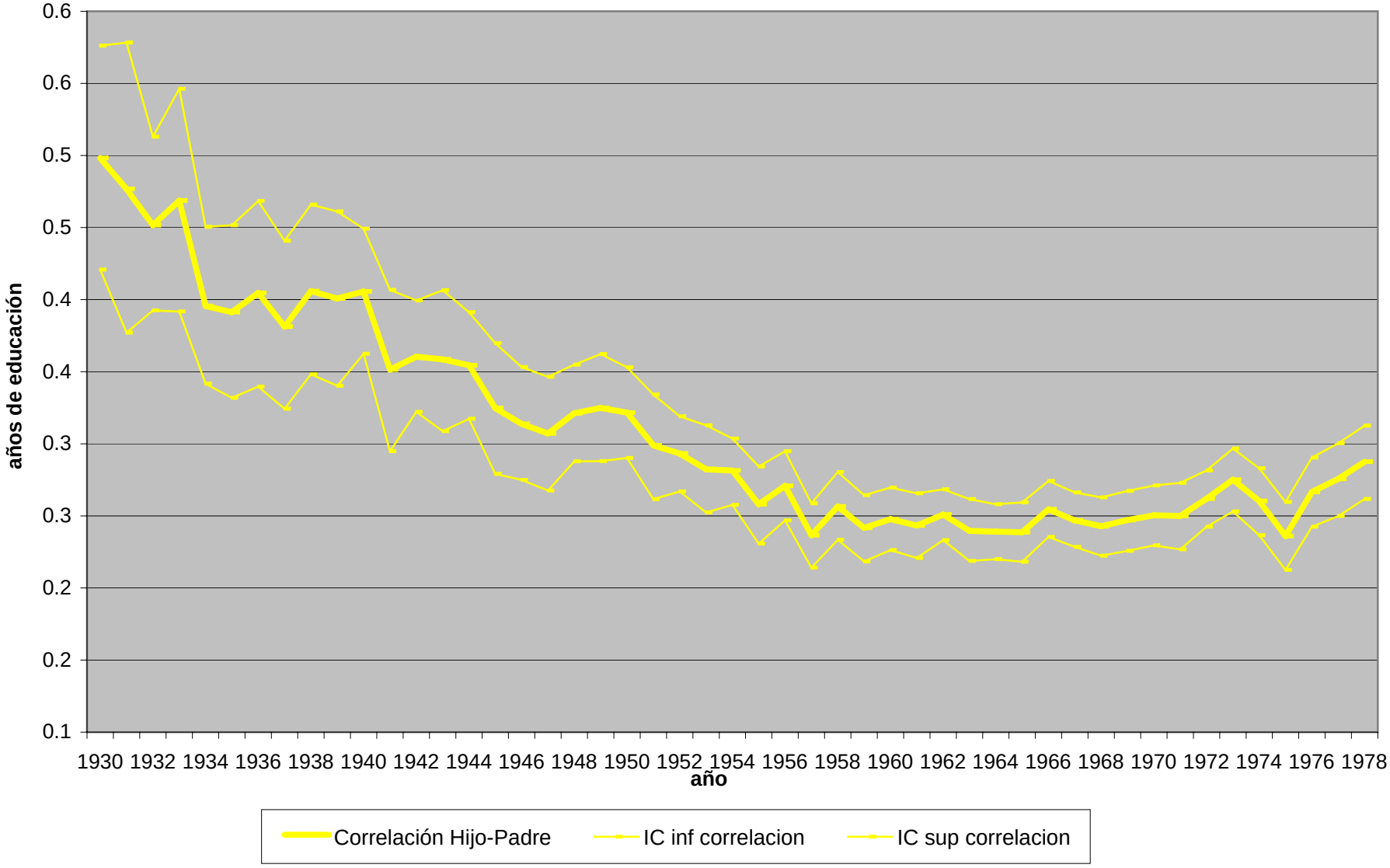


TABLA 5
COBERTURA ABSOLUTA DE NIVELES EDUCACIONALES PARA TODA LA POBLACIÓN

Cohorte	Primaria Incompleta	Secundaria Incompleta	Secundaria Completa	Universitaria Incompleta
1930	88.52%	29.27%	17.56%	7.03%
1931	88.82%	32.24%	17.43%	6.25%
1932	88.43%	32.83%	19.92%	6.64%
1933	90.03%	32.71%	14.95%	7.79%
1934	86.52%	29.08%	15.25%	5.85%
1935	91.09%	35.87%	19.35%	6.96%
1936	90.06%	33.14%	18.71%	7.41%
1937	90.10%	33.48%	15.87%	5.97%
1938	90.69%	38.10%	18.97%	6.03%
1939	90.75%	37.28%	19.08%	8.38%
1940	92.92%	33.79%	17.76%	6.96%
1941	92.86%	43.54%	21.26%	7.31%
1942	93.48%	38.87%	21.45%	7.77%
1943	94.07%	42.90%	21.38%	8.28%
1944	94.20%	41.34%	22.27%	8.66%
1945	93.97%	44.37%	23.55%	8.65%
1946	96.05%	46.19%	24.65%	9.88%
1947	95.88%	49.52%	26.82%	10.60%
1948	96.43%	50.45%	26.52%	10.79%
1949	96.50%	52.25%	30.45%	11.04%
1950	95.67%	56.68%	31.68%	13.87%
1951	96.31%	59.80%	33.09%	14.75%
1952	96.47%	60.92%	37.42%	14.22%
1953	96.75%	69.23%	42.16%	16.49%
1954	96.73%	68.53%	39.43%	14.45%
1955	96.87%	74.25%	43.36%	16.17%
1956	96.91%	73.01%	41.21%	14.33%
1957	97.49%	77.48%	44.99%	16.41%
1958	97.77%	76.81%	44.31%	15.42%
1959	96.90%	78.23%	43.79%	15.47%
1960	96.81%	79.58%	45.66%	15.30%
1961	97.53%	82.10%	49.87%	17.80%
1962	97.50%	80.89%	46.44%	16.13%
1963	98.30%	82.69%	48.25%	17.26%
1964	97.77%	80.71%	48.96%	16.78%
1965	97.77%	83.06%	49.36%	16.81%
1966	97.68%	82.35%	51.44%	17.12%
1967	97.76%	84.56%	51.44%	18.61%
1968	97.79%	84.88%	54.73%	20.07%
1969	98.09%	86.89%	56.96%	23.59%
1970	98.00%	86.65%	54.19%	22.79%
1971	98.07%	88.92%	58.65%	27.34%
1972	98.34%	87.82%	56.58%	25.74%
1973	98.28%	89.57%	61.59%	28.95%
1974	98.59%	90.16%	61.36%	27.87%
1975	98.84%	91.86%	63.69%	27.64%
1976	99.28%	91.96%	63.58%	29.21%
1977	99.11%	92.79%	66.71%	30.22%
1978	98.63%	91.96%	66.85%	27.66%

Gráfico 5: Cobertura absoluta para toda la población.

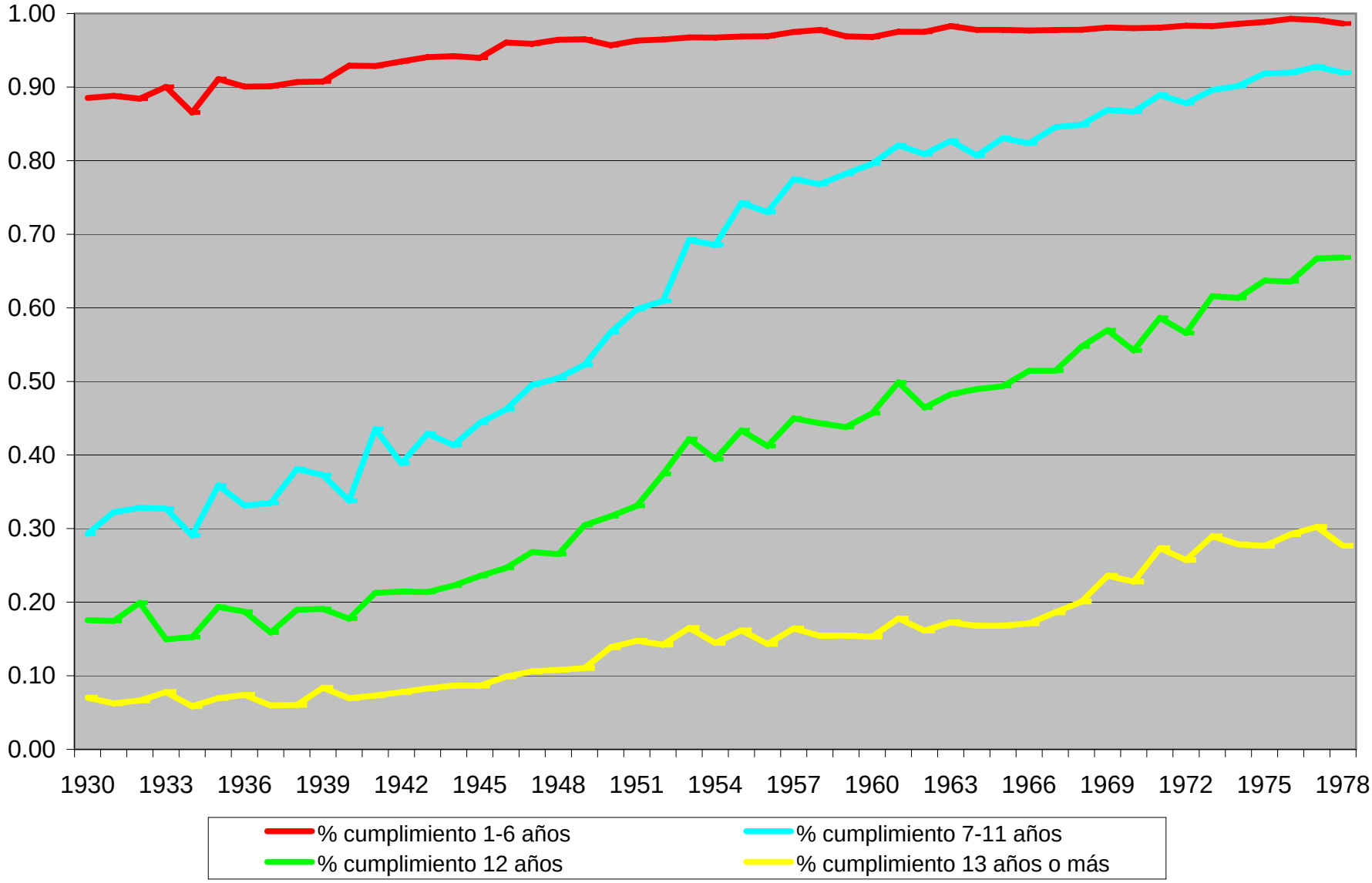


TABLA 6
PORCENTAJE DE PADRES EN CADA NIVEL EDUCATIVO

	PORCENTAJE DE PADRES			
Cohorte	Padres 0-6 años	Padres 7-11 años	Padres 12 años	Padres 13 o más años
1930	0.79	0.08	0.11	0.02
1931	0.77	0.11	0.10	0.03
1932	0.78	0.07	0.12	0.03
1933	0.81	0.06	0.09	0.04
1934	0.79	0.07	0.12	0.02
1935	0.81	0.06	0.09	0.04
1936	0.79	0.07	0.12	0.03
1937	0.81	0.08	0.09	0.02
1938	0.81	0.07	0.09	0.03
1939	0.79	0.09	0.09	0.03
1940	0.83	0.07	0.08	0.02
1941	0.77	0.09	0.11	0.03
1942	0.78	0.10	0.09	0.03
1943	0.77	0.09	0.09	0.04
1944	0.77	0.12	0.09	0.03
1945	0.77	0.11	0.09	0.03
1946	0.76	0.10	0.10	0.03
1947	0.75	0.12	0.10	0.03
1948	0.75	0.11	0.10	0.04
1949	0.76	0.11	0.11	0.02
1950	0.74	0.12	0.10	0.04
1951	0.72	0.13	0.11	0.04
1952	0.73	0.12	0.11	0.04
1953	0.72	0.13	0.12	0.04
1954	0.73	0.13	0.11	0.03
1955	0.71	0.13	0.12	0.04
1956	0.72	0.14	0.11	0.03
1957	0.69	0.15	0.13	0.04
1958	0.70	0.15	0.12	0.04
1959	0.71	0.14	0.11	0.04
1960	0.70	0.14	0.12	0.04
1961	0.66	0.16	0.14	0.05
1962	0.69	0.15	0.13	0.04
1963	0.66	0.16	0.13	0.05
1964	0.68	0.15	0.13	0.04
1965	0.67	0.16	0.13	0.05
1966	0.65	0.17	0.13	0.05
1967	0.65	0.18	0.12	0.05
1968	0.63	0.19	0.12	0.06
1969	0.60	0.21	0.14	0.06
1970	0.60	0.20	0.13	0.06
1971	0.57	0.20	0.15	0.08
1972	0.57	0.20	0.16	0.08
1973	0.53	0.23	0.15	0.09
1974	0.53	0.23	0.17	0.08
1975	0.49	0.24	0.18	0.10
1976	0.46	0.27	0.17	0.10
1977	0.44	0.28	0.17	0.11
1978	0.42	0.28	0.19	0.11

Gráfico 6: Porcentaje de Padres en cada Nivel Educativo

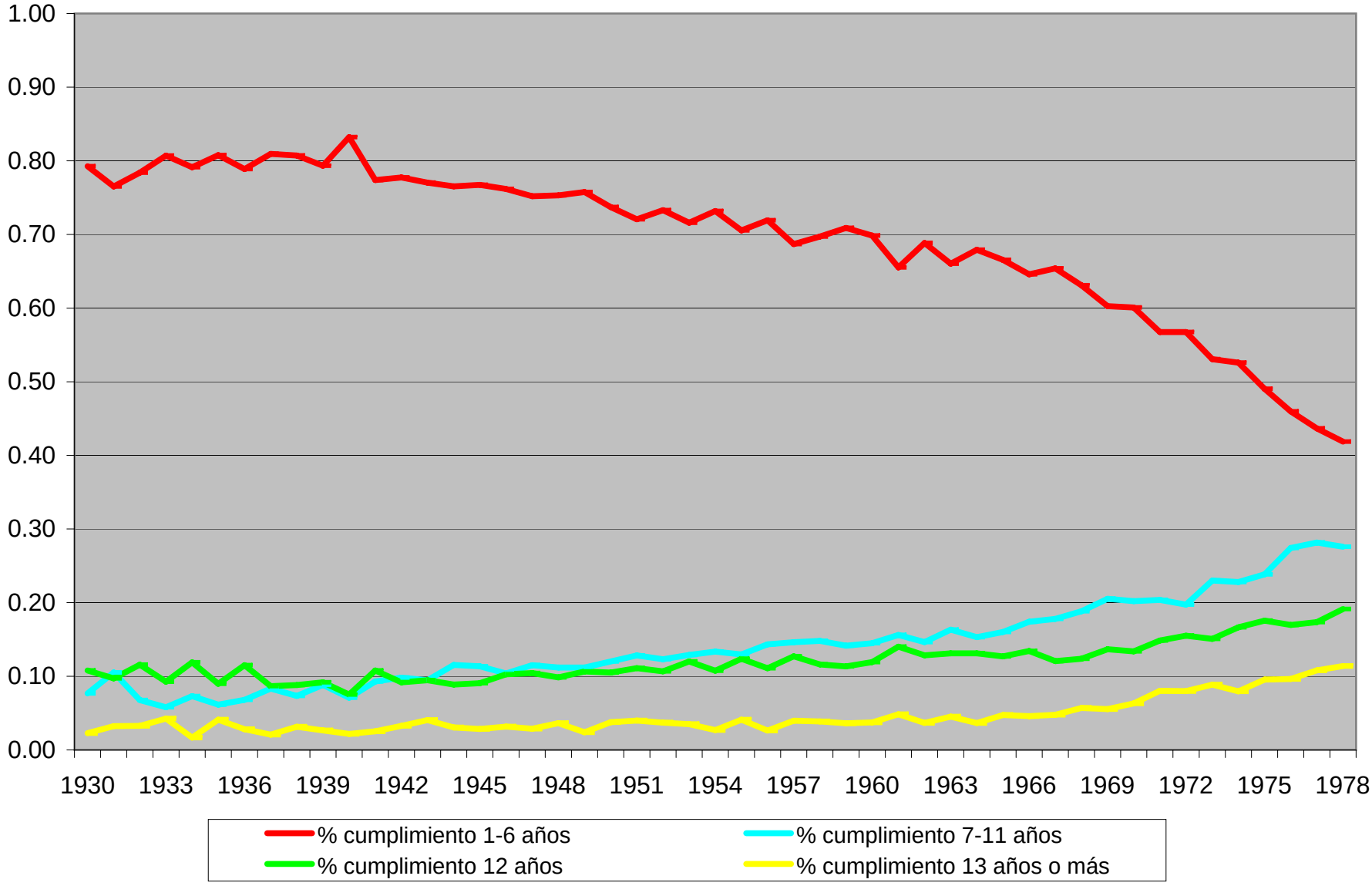


TABLA 7
COBERTURA ABSOLUTA DE NIVELES EDUCACIONALES DE ACUERDO A LA EDUCACIÓN DEL PADRE

	Cobertura de Primaria Incompleta				Cobertura de Secundaria Incompleta				Cobertura de Secundaria Completa				Cobertura de Universitaria Incompleta			
Cohorte	Padres 0-6 años	Padres 7-11 años	Padres 12 años	Padres 13 o más años	Padres 0-6 años	Padres 7-11 años	Padres 12 años	Padres 13 o más años	Padres 0-6 años	Padres 7-11 años	Padres 12 años	Padres 13 o más años	Padres 0-6 años	Padres 7-11 años	Padres 12 años	Padres 13 o más años
1930	0.8888889	0.96923077	0.973684	1	0.19713262	0.62962963	0.78947368	0.75	0.08960573	0.33333333	0.71052632	0.75	0.02867384	0.26153846	0.34210526	0.5
1931	0.8730159	0.98	1	1	0.21693122	0.65384615	0.79166667	0.875	0.11111111	0.30769231	0.54166667	0.625	0.04761905	0.14	0.16666667	0.375
1932	0.8690808	0.96428571	0.962264	1	0.22005571	0.70967742	0.77358491	0.93333333	0.11977716	0.32258065	0.56603774	0.66666667	0.03342618	0.16666667	0.20754717	0.33333333
1933	0.8755981	1	1	1	0.23923445	0.6	0.79166667	0.90909091	0.0861244	0.13333333	0.54166667	0.81818182	0.04784689	0.15384615	0.16666667	0.54545455
1934	0.8443272	0.98913043	0.982456	1	0.16622691	0.71428571	0.68421053	1	0.07915567	0.34285714	0.43859649	0.875	0.03166227	0.16304348	0.14035088	0.125
1935	0.9079365	0.94915254	0.971429	1	0.26349206	0.79166667	0.85714286	1	0.11428571	0.41666667	0.57142857	0.75	0.04126984	0.13559322	0.14285714	0.375
1936	0.8928571	0.97435897	0.959184	1	0.24404762	0.75862069	0.69387755	1	0.10714286	0.34482759	0.51020408	0.91666667	0.04166667	0.16666667	0.20408163	0.5
1937	0.888651	1	1	1	0.25910064	0.72916667	0.76	0.75	0.11991435	0.25	0.48	0.5	0.04068522	0.17346939	0.3	0.16666667
1938	0.8883117	0.98701299	0.97619	1	0.30909091	0.8	0.85714286	0.86666667	0.14805195	0.17142857	0.61904762	0.6	0.03376623	0.16883117	0.23809524	0.46666667
1939	0.8953229	0.98039216	0.980769	0.93333333	0.28062361	0.68	0.75	0.93333333	0.10022272	0.42	0.57692308	0.8	0.04454343	0.24509804	0.28846154	0.53333333
1940	0.9165217	1	1	1	0.25913043	0.7755102	0.80769231	0.93333333	0.13217391	0.34693878	0.61538462	0.8	0.04173913	0.20792079	0.28846154	0.6
1941	0.9234973	0.95789474	0.960784	1	0.33333333	0.81818182	0.78431373	1	0.15027322	0.29545455	0.54901961	0.83333333	0.04098361	0.16842105	0.25490196	0.58333333
1942	0.9280868	0.97777778	0.977011	1	0.27272727	0.7311828	0.77011494	0.90322581	0.1302578	0.39784946	0.56321839	0.70967742	0.03256445	0.21666667	0.25287356	0.38709677
1943	0.9364035	0.97321429	0.964286	1	0.33552632	0.76785714	0.80357143	0.91666667	0.13157895	0.375	0.625	0.70833333	0.0504386	0.19642857	0.26785714	0.33333333
1944	0.9445876	0.96618357	0.966667	1	0.32345361	0.72649573	0.76666667	0.90322581	0.14819588	0.38461538	0.55555556	0.83870968	0.04381443	0.22705314	0.25555556	0.35483871
1945	0.9347443	0.97350993	0.955224	0.95238095	0.36684303	0.75	0.79104478	0.85714286	0.17813051	0.30952381	0.64179104	0.76190476	0.0617284	0.15231788	0.20895522	0.42857143
1946	0.9525926	0.98907104	1	1	0.37185185	0.77173913	0.79120879	0.85714286	0.16444444	0.31521739	0.61538462	0.57142857	0.06222222	0.20765027	0.25274725	0.32142857
1947	0.9589235	0.99029126	0.979592	0.96296296	0.40084986	0.7962963	0.80612245	0.96296296	0.1898017	0.44444444	0.64285714	0.7037037	0.06798867	0.24271845	0.26530612	0.33333333
1948	0.9580686	0.99545455	1	1	0.41423126	0.73504274	0.82524272	0.92105263	0.1905972	0.38461538	0.55339806	0.89473684	0.07242694	0.18636364	0.21359223	0.63157895
1949	0.9598278	0.99004975	1	1	0.44045911	0.80582524	0.84693878	0.95454545	0.23098996	0.52427184	0.7244898	0.77272727	0.05882353	0.29353234	0.34693878	0.40909091
1950	0.9497951	0.98657718	0.978417	0.98	0.47131148	0.83018868	0.89208633	0.9	0.22848361	0.4591195	0.69784173	0.82	0.08606557	0.25838926	0.30215827	0.62
1951	0.9640719	0.97747748	0.970874	1	0.51497006	0.84033613	0.84466019	0.94594595	0.23652695	0.55462185	0.63106796	0.83783784	0.09580838	0.27927928	0.30097087	0.62162162
1952	0.9577815	0.98680739	0.988636	0.96721311	0.51821192	0.87684729	0.91477273	0.93442623	0.26655629	0.65024631	0.74431818	0.8852459	0.08112583	0.29287599	0.30681818	0.57377049
1953	0.9632353	0.99647887	1	1	0.61764706	0.87755102	0.91240876	0.95	0.34436275	0.6462585	0.69343066	0.875	0.11397059	0.28873239	0.27737226	0.65
1954	0.9615385	0.99084668	0.989744	1	0.61312217	0.88016529	0.90769231	0.95918367	0.30090498	0.62809917	0.71794872	0.89795918	0.08974359	0.27688787	0.27692308	0.63265306
1955	0.9636552	0.98843931	0.988166	1	0.67912773	0.92090395	0.92899408	0.92857143	0.33229491	0.60451977	0.76923077	0.875	0.09449637	0.28612717	0.27218935	0.625
1956	0.9667519	0.99036145	0.994475	1	0.67689685	0.9017094	0.93370166	0.95348837	0.32736573	0.60683761	0.74033149	0.93023256	0.08184143	0.2746988	0.32596685	0.76744186
1957	0.9699367	0.99204771	1	1	0.72231013	0.91078067	0.94871795	0.95890411	0.35996835	0.65799257	0.73504274	0.91780822	0.10522152	0.27833002	0.28205128	0.67123288
1958	0.9731136	0.99313501	0.994792	1	0.7085863	0.91428571	0.94791667	0.984375	0.34692108	0.63673469	0.71354167	0.90625	0.09887251	0.26086957	0.30729167	0.671875
1959	0.9691558	0.99548533	1	0.96825397	0.73376623	0.91869919	0.95431472	0.93650794	0.3400974	0.66260163	0.75126904	0.85714286	0.09172078	0.29345372	0.3248731	0.65079365
1960	0.9640678	0.98207885	0.980159	0.98734177	0.74305085	0.93464052	0.92857143	0.97468354	0.35525424	0.66013072	0.75396825	0.92405063	0.08881356	0.27419355	0.31746032	0.69620253
1961	0.9700935	0.98347107	0.991266	0.98734177	0.7682243	0.9254902	0.94759825	0.97468354	0.37757009	0.69803922	0.76419214	0.92405063	0.09158879	0.30991736	0.31441048	0.6835443
1962	0.9710145	0.99419448	0.993789	1	0.74782609	0.94822888	0.96273292	0.98913043	0.36057971	0.64305177	0.78881988	0.94565217	0.09043478	0.30043541	0.33540373	0.67391304
1963	0.9838213	0.98963731	1	1	0.77041602	0.93457944	0.96124031	0.96629213	0.37904468	0.63862928	0.74806202	0.87640449	0.10015408	0.29188256	0.29844961	0.65168539
1964	0.9760909	0.98428571	0.987616	0.97777778	0.75552899	0.9204244	0.95665635	0.96666667	0.39210998	0.64456233	0.80495356	0.9	0.08846384	0.3	0.3498452	0.73333333
1965	0.9727479	0.99122807	0.996032	0.9787234	0.78728236	0.91823899	0.98015873	0.95744681	0.38909917	0.63207547	0.78968254	0.92553191	0.08327025	0.30175439	0.38095238	0.67021277
1966	0.9731884	0.98634294	0.989547	1	0.76304348	0.93817204	0.97212544	0.97959184	0.40289855	0.65053763	0.82578397	0.90816327	0.0942029	0.29742033	0.3554007	0.62244898
1967	0.9734513	0.98869144	1	1	0.78908555	0.93495935	0.98	1	0.40265487	0.68292683	0.804	0.93939394	0.10176991	0.29563813	0.324	0.73737374
1968	0.9722222	0.99298246	1	0.99038462	0.78819444	0.95639535	0.98672566	0.98076923	0.43142361	0.72674419	0.79646018	0.95192308	0.11284722	0.32105263	0.36283186	0.74038462
1969	0.9744991	0.99197432	0.995984	1	0.81238616	0.94652406	0.96385542	1	0.44444444	0.73529412	0.78714859	0.97029703	0.13661202	0.33065811	0.37751004	0.82178218
1970	0.9756098	0.98796992	0.984906	0.984	0.80487805	0.95	0.95471698	0.984	0.41547519	0.67	0.75471698	0.968	0.12279226	0.33684211	0.40754717	0.776
1971	0.974359	0.98204668	0.987234	1	0.83500557	0.95341615	0.95744681	0.98425197	0.44593088	0.69565217	0.8212766	0.96062992	0.1393534	0.38779174	0.44680851	0.77165354
1972	0.9757282	0.98958333	0.997041	1	0.81391586	0.95581395	0.9704142	1	0.4263754	0.73023256	0.76923077	0.93678161	0.1302589	0.37369792	0.41420118	0.79310345
1973	0.9823009	0.97996918	0.988327	1	0.83960177	0.92602041	0.9766537	1	0.45353982	0.70918367	0.86770428	0.97350993	0.14048673	0.39137134	0.47859922	0.77483444
1974	0.9807107	0.99052774	0.990385	0.99328859	0.84263959	0.95081967	0.98076923	0.98657718	0.4680203	0.70725995	0.84935897	0.93959732	0.15228426	0.37618403	0.48397436	0.75838926
1975	0.9849246	0.99553571	0.996491	0.97419355	0.86055276	0.95607235	0.98947368	0.97419355	0.50251256	0.68475452	0.82105263	0.92258065	0.13316583	0.33184524	0.44210526	0.74193548
1976	0.9931129	0.99429387	0.988806	0.99342105	0.84710744	0.97921478	0.98134328	0.99342105	0.46969697	0.70207852	0.80597015	0.96052632	0.13774105	0.36091298	0.47014925	0.78289474
1977	0.988959	0.99394856	1	0.99363057	0.87697161	0.95599022	0.99206349	0.99363057	0.51419558	0.69193154	0.86507937	0.98726115	0.13880126	0.33888048	0.51190476	0.85350318
1978	0.9828767	0.98312883	0.988764	0.99371069	0.84417808	0.96103896	0.98501873	0.99371069	0.49143836	0.68051948	0.89513109	0.94968553	0.09931507	0.33128834	0.51310861	0.81132075

Gráfico 7a: Cobertura de primaria incompleta de acuerdo a la educación de los padres

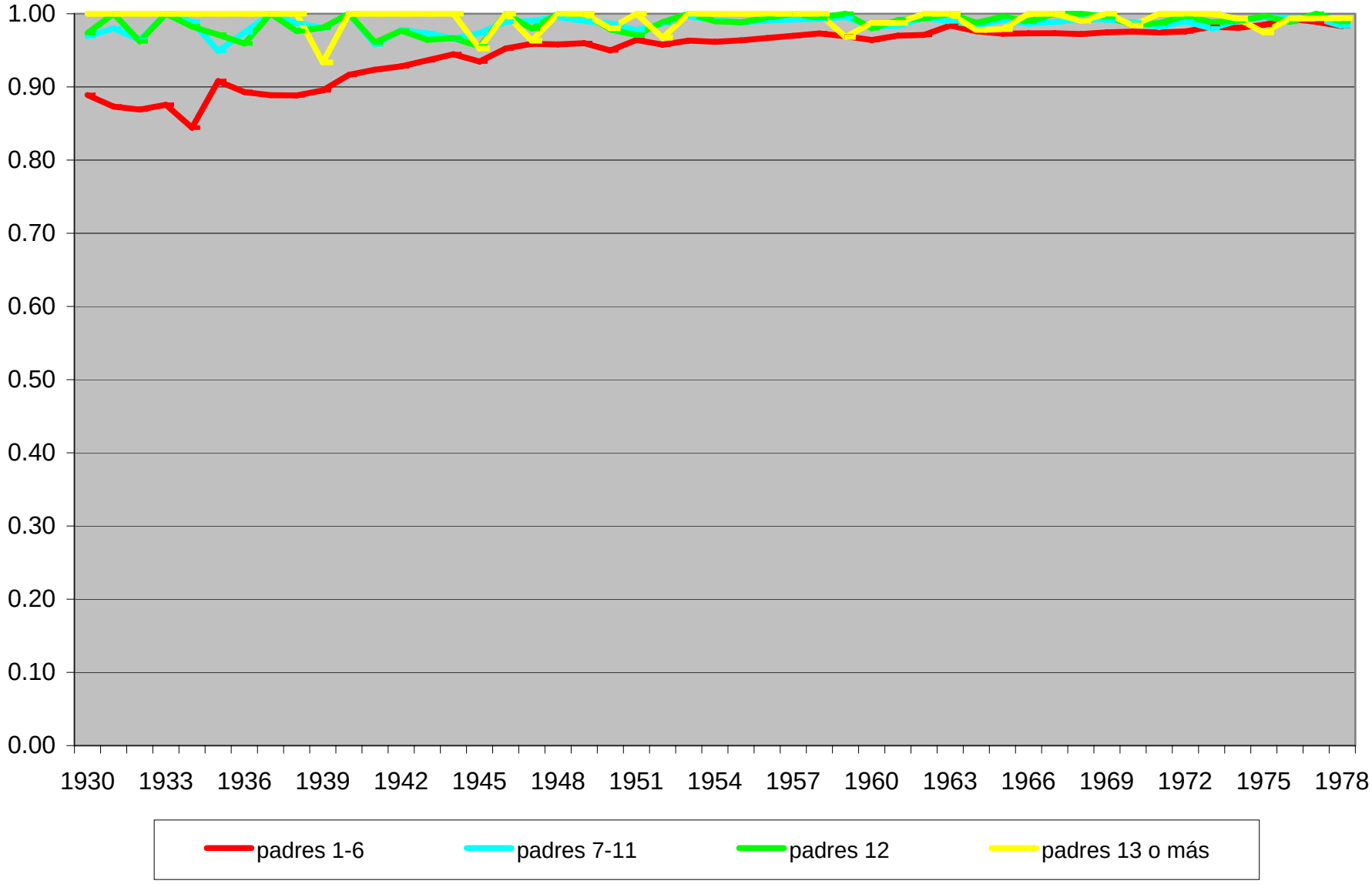


Gráfico 7b: Cobertura de secundaria incompleta de acuerdo a la educación de los padres

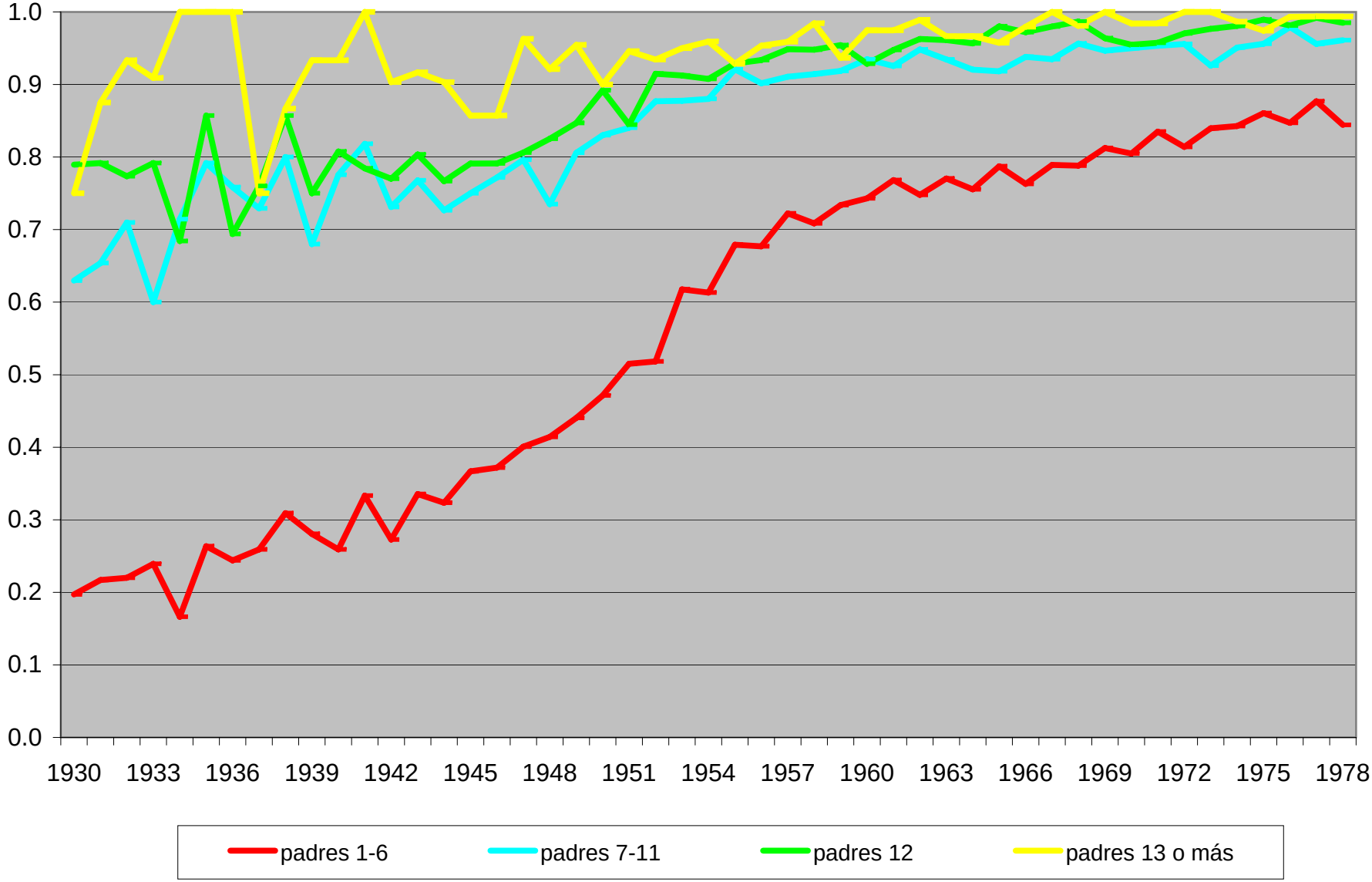


Gráfico 7c: Cobertura de secundaria completa de acuerdo a la educación de los padres

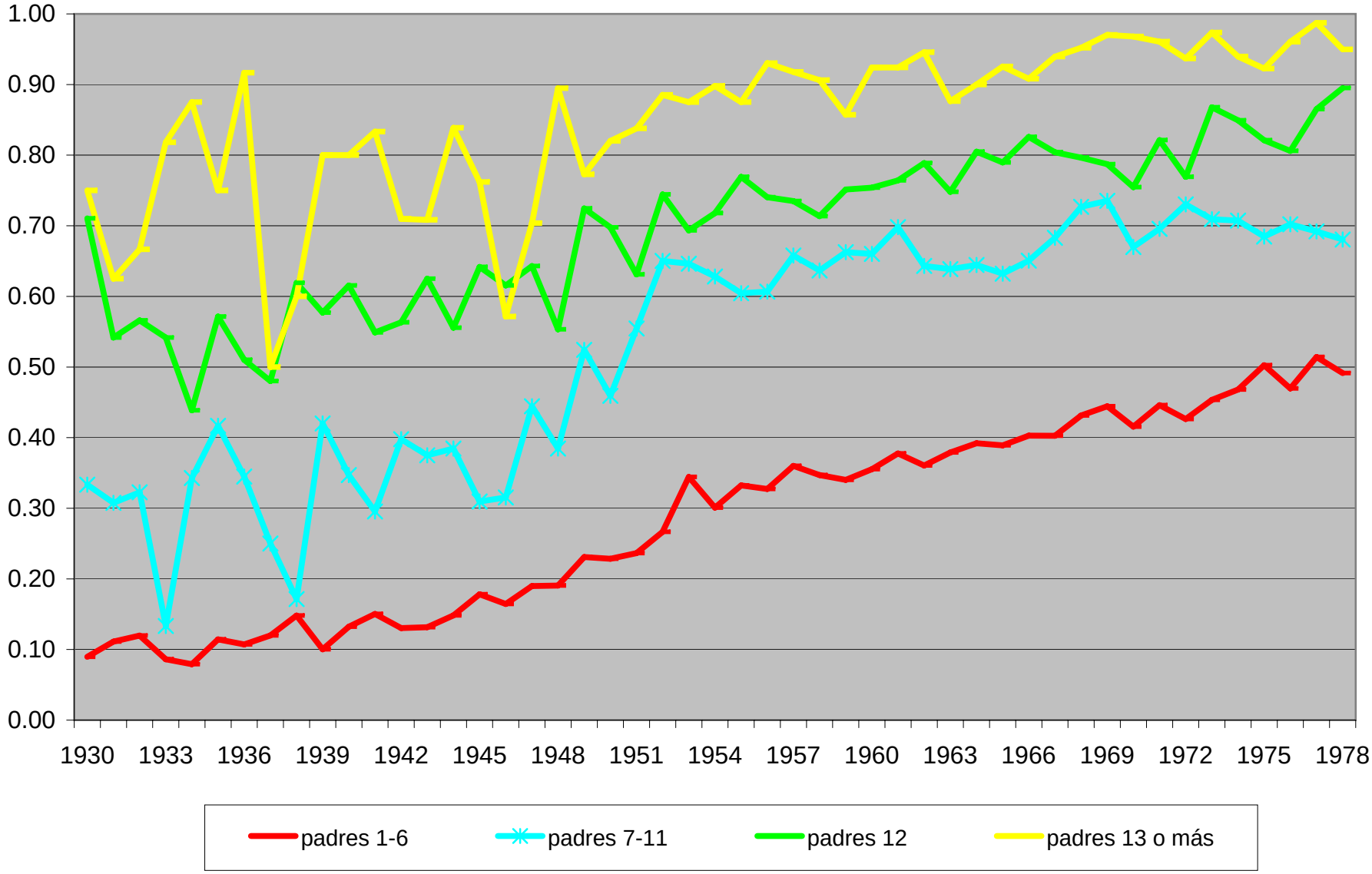


Gráfico 7d: Cobertura de universitaria incompleta de acuerdo a la educación de los padres

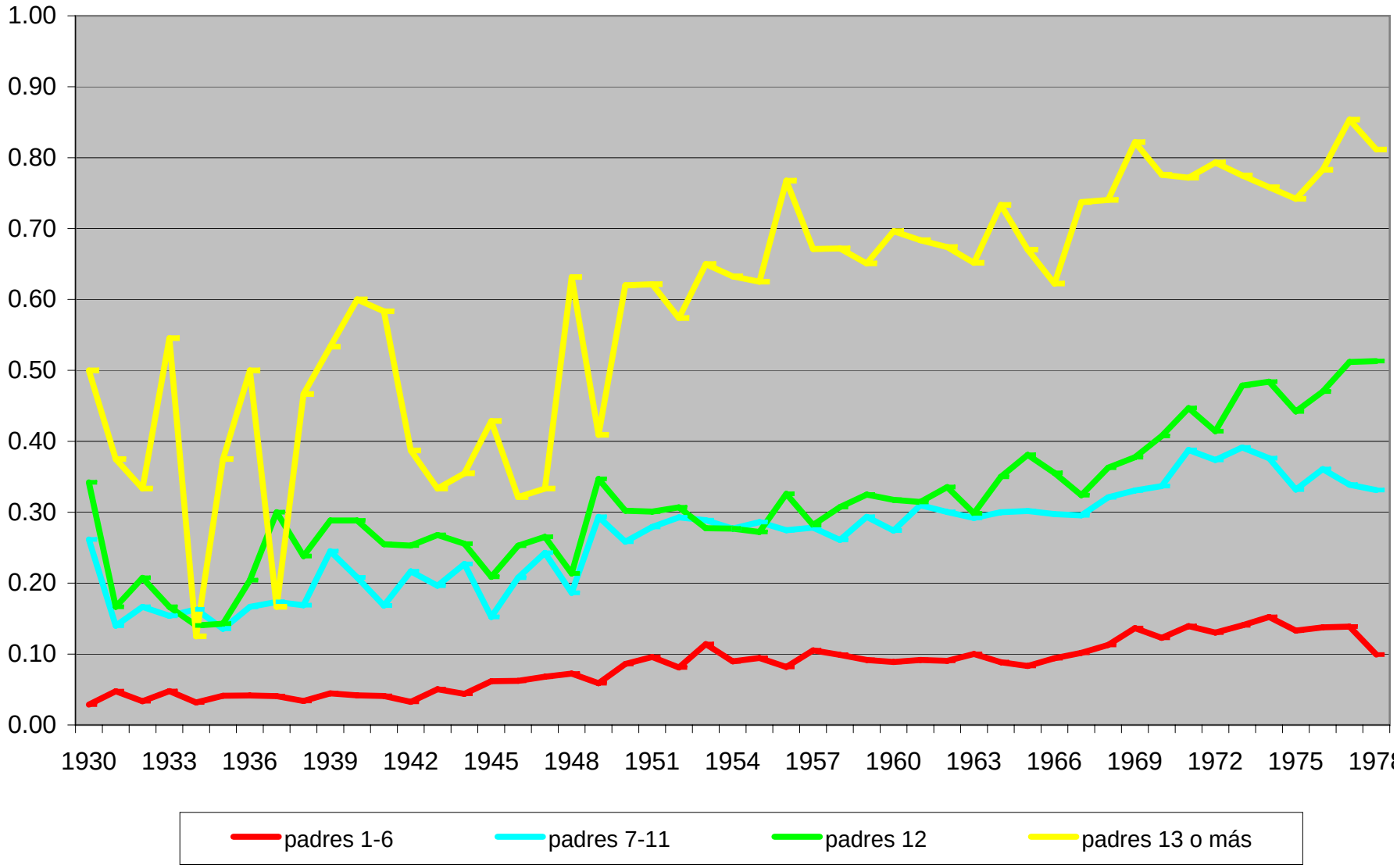


TABLA 8
COBERTURA CONDICIONAL DE NIVELES
EDUCACIONALES PARA TODA LA POBLACIÓN

Cohorte	Secundaria Incompleta	Secundaria Completa	Universitaria Incompleta
1930	0.330687831	0.6	0.4
1931	0.362962963	0.540816327	0.358490566
1932	0.371244635	0.606936416	0.333333333
1933	0.363321799	0.457142857	0.520833333
1934	0.336065574	0.524390244	0.38372093
1935	0.393794749	0.539393939	0.359550562
1936	0.367965368	0.564705882	0.395833333
1937	0.371567044	0.473913043	0.376146789
1938	0.420152091	0.497737557	0.318181818
1939	0.410828025	0.511627907	0.439393939
1940	0.363636364	0.525735294	0.391608392
1941	0.468864469	0.48828125	0.344
1942	0.415869981	0.551724138	0.3625
1943	0.45601173	0.498392283	0.387096774
1944	0.438893845	0.538617886	0.388679245
1945	0.472154964	0.530769231	0.367149758
1946	0.480901077	0.533604888	0.400763359
1947	0.516453382	0.54159292	0.395424837
1948	0.52312868	0.525723473	0.406727829
1949	0.541468065	0.582746479	0.362537764
1950	0.592420213	0.558922559	0.437751004
1951	0.620915033	0.553383459	0.445652174
1952	0.631522324	0.614139693	0.380027739
1953	0.71559633	0.608974359	0.39122807
1954	0.708476237	0.57538036	0.366586538
1955	0.766494179	0.583966245	0.37283237
1956	0.753372909	0.564469914	0.347715736
1957	0.794759825	0.580586081	0.364879075
1958	0.785600847	0.576819407	0.348130841
1959	0.807320793	0.559823678	0.353205849
1960	0.822062553	0.57377892	0.335125448
1961	0.841792657	0.607440667	0.356916579
1962	0.829598008	0.574185249	0.347274085
1963	0.841262783	0.583509514	0.357789855
1964	0.825488776	0.606578947	0.342733189
1965	0.849561404	0.594217863	0.340573414
1966	0.84304746	0.624691358	0.332806324
1967	0.864993509	0.608304152	0.361842105
1968	0.868015414	0.644839068	0.366609294
1969	0.885811467	0.655512891	0.414225941
1970	0.884162896	0.625383828	0.420621931
1971	0.906689151	0.659640422	0.466165414
1972	0.893004115	0.644239631	0.454935622
1973	0.911431514	0.687570621	0.470008217
1974	0.914489311	0.680519481	0.454198473
1975	0.929411765	0.693325662	0.434024896
1976	0.926298157	0.69138035	0.459459459
1977	0.936157518	0.718929254	0.453014184
1978	0.932406822	0.72696477	0.413793103

Gráfico 8: Cobertura condicional de niveles educacionales para toda la población

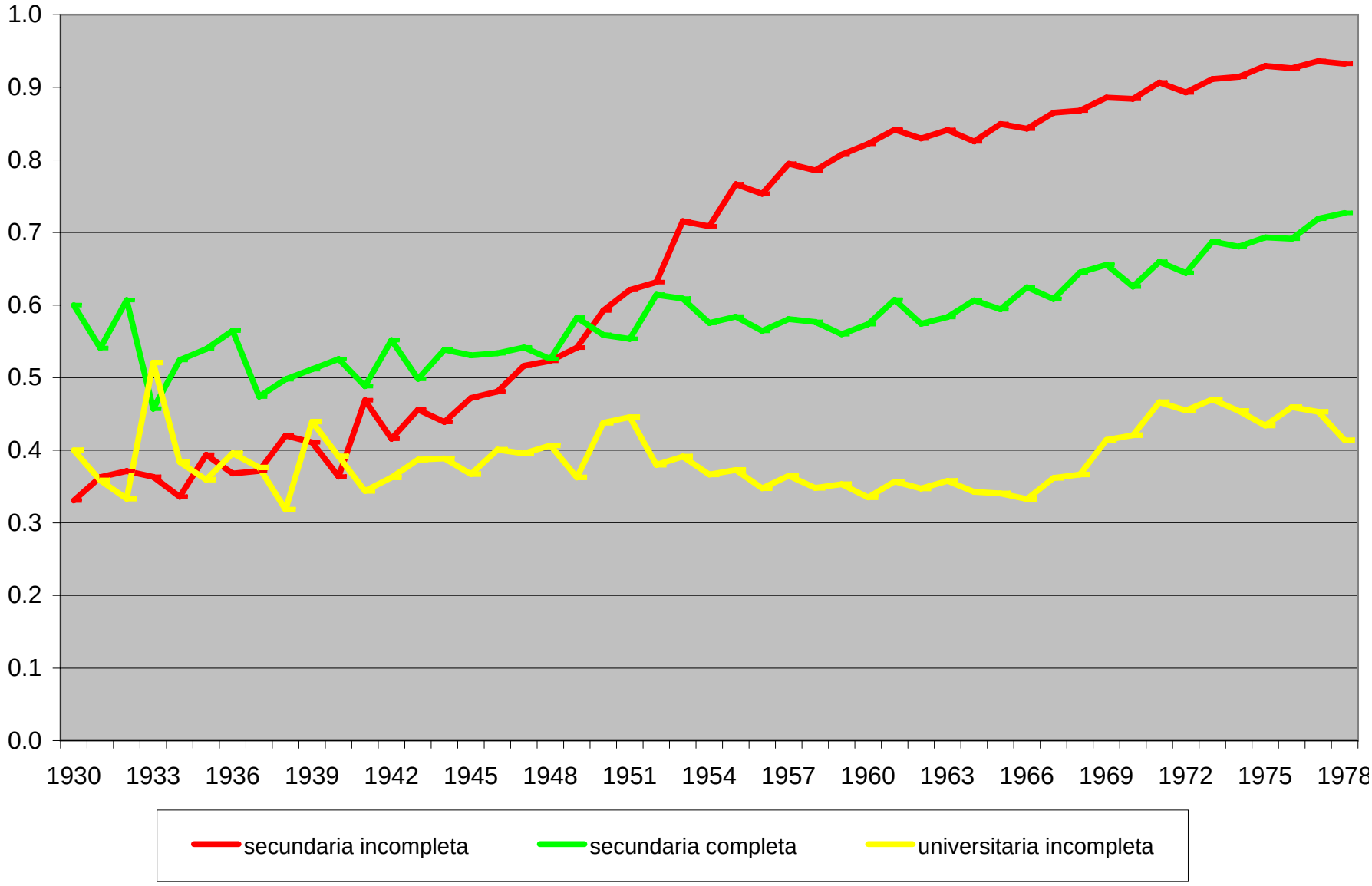


TABLA 9
COBERTURA CONDICIONAL DE NIVELES EDUCACIONALES DE ACUERDO A LA EDUCACIÓN DEL PADRE

	Cobertura Condicional de Secundaria Incompleta				Cobertura Condicional de Secundaria Completa				Cobertura Condicional de Universitaria Incompleta			
Cohorte	Padres 0-6 años	Padres 7-11 años	Padres 12 años	Padres 13 o más años	Padres 0-6 años	Padres 7-11 años	Padres 12 años	Padres 13 o más años	Padres 0-6 años	Padres 7-11 años	Padres 12 años	Padres 13 o más años
1930	0.22177419	0.64961787	0.81081081	0.75	0.45454545	0.52941176	0.9	1	0.32	0.78461538	0.48148148	0.66666667
1931	0.24848485	0.66718995	0.79166667	0.875	0.51219512	0.47058824	0.68421053	0.71428571	0.42857143	0.455	0.30769231	0.6
1932	0.25320513	0.73596177	0.80392157	0.93333333	0.5443038	0.45454545	0.73170732	0.71428571	0.27906977	0.51666667	0.36666667	0.5
1933	0.27322404	0.6	0.79166667	0.90909091	0.36	0.22222222	0.68421053	0.9	0.55555556	1	0.30769231	0.66666667
1934	0.196875	0.72213501	0.69642857	1	0.47619048	0.48	0.64102564	0.875	0.4	0.47554348	0.32	0.14285714
1935	0.29020979	0.83407738	0.88235294	1	0.43373494	0.52631579	0.66666667	0.75	0.36111111	0.32542373	0.25	0.5
1936	0.27333333	0.77858439	0.72340426	1	0.43902439	0.45454545	0.73529412	0.91666667	0.38888889	0.48333333	0.4	0.54545455
1937	0.29156627	0.72916667	0.76	0.75	0.46280992	0.34285714	0.63157895	0.66666667	0.33928571	0.69387755	0.625	0.33333333
1938	0.34795322	0.81052632	0.87804878	0.86666667	0.4789916	0.21428571	0.72222222	0.69230769	0.22807018	0.98484848	0.38461538	0.77777778
1939	0.31343284	0.6936	0.76470588	1	0.35714286	0.61764706	0.76923077	0.85714286	0.44444444	0.58356676	0.5	0.66666667
1940	0.28273245	0.7755102	0.80769231	0.93333333	0.51006711	0.44736842	0.76190476	0.85714286	0.31578947	0.59930111	0.46875	0.75
1941	0.36094675	0.85414585	0.81632653	1	0.45081967	0.36111111	0.7	0.83333333	0.27272727	0.57004049	0.46428571	0.7
1942	0.29385965	0.74780059	0.78823529	0.90322581	0.47761194	0.54411765	0.73134328	0.78571429	0.25	0.54459459	0.44897959	0.54545455
1943	0.35831382	0.78899083	0.83333333	0.91666667	0.39215686	0.48837209	0.77777778	0.77272727	0.38333333	0.52380952	0.42857143	0.47058824
1944	0.34242838	0.75192308	0.79310345	0.90322581	0.45816733	0.52941176	0.72463768	0.92857143	0.29565217	0.59033816	0.46	0.42307692
1945	0.39245283	0.77040816	0.828125	0.9	0.48557692	0.41269841	0.81132075	0.88888889	0.34653465	0.49210392	0.3255814	0.5625
1946	0.3903577	0.78026663	0.79120879	0.85714286	0.44223108	0.4084507	0.77777778	0.66666667	0.37837838	0.65875259	0.41071429	0.5625
1947	0.41802068	0.80410312	0.82291667	1	0.47349823	0.55813953	0.79746835	0.73076923	0.35820896	0.5461165	0.41269841	0.47368421
1948	0.43236074	0.73839909	0.82524272	0.92105263	0.4601227	0.52325581	0.67058824	0.97142857	0.38	0.48454545	0.38596491	0.70588235
1949	0.45889387	0.81392399	0.84693878	0.95454545	0.52442997	0.65060241	0.85542169	0.80952381	0.25465839	0.55988576	0.47887324	0.52941176
1950	0.49622438	0.84148376	0.91176471	0.91836735	0.48478261	0.5530303	0.78225806	0.91111111	0.37668161	0.56279305	0.43298969	0.75609756
1951	0.53416149	0.85969872	0.87	0.94594595	0.45930233	0.66	0.74712644	0.88571429	0.40506329	0.503549	0.47692308	0.74193548
1952	0.54105445	0.88856985	0.92528736	0.96610169	0.514377	0.74157303	0.8136646	0.94736842	0.30434783	0.45040777	0.41221374	0.64814815
1953	0.64122137	0.88065191	0.91240876	0.95	0.55753968	0.73643411	0.76	0.92105263	0.33096085	0.44677539	0.4	0.74285714
1954	0.63764706	0.88829615	0.91709845	0.95918367	0.49077491	0.71361502	0.79096045	0.93617021	0.29824561	0.44083464	0.38571429	0.70454545
1955	0.70474138	0.93167476	0.94011976	0.92857143	0.48929664	0.65644172	0.82802548	0.94230769	0.284375	0.47331317	0.35384615	0.71428571
1956	0.70017637	0.91048516	0.93888889	0.95348837	0.4836272	0.67298578	0.79289941	0.97560976	0.25	0.45267266	0.44029851	0.825
1957	0.74469821	0.91808152	0.94871795	0.95890411	0.49835706	0.72244898	0.77477477	0.95714286	0.29230769	0.42299873	0.38372093	0.73134328
1958	0.72816399	0.92060566	0.95287958	0.984375	0.48959608	0.69642857	0.75274725	0.92063492	0.285	0.409699	0.43065693	0.74137931
1959	0.75711893	0.92286562	0.95431472	0.96721311	0.46349558	0.72123894	0.78723404	0.91525424	0.26968974	0.44288108	0.43243243	0.75925926
1960	0.77074543	0.95169601	0.94736842	0.98717949	0.47810219	0.70629371	0.81196581	0.94805195	0.25	0.4153625	0.42105263	0.75342466
1961	0.79190751	0.94104465	0.95594714	0.98717949	0.49148418	0.75423729	0.80645161	0.94805195	0.24257426	0.44398273	0.41142857	0.73972603
1962	0.77014925	0.95376599	0.96875	0.98913043	0.48217054	0.67816092	0.81935484	0.95604396	0.25080386	0.46720253	0.42519685	0.71264368
1963	0.78308536	0.94436561	0.96124031	0.96629213	0.492	0.68333333	0.77822581	0.90697674	0.26422764	0.45704537	0.39896373	0.74358974
1964	0.77403552	0.93511913	0.96865204	0.98863636	0.51898734	0.70028818	0.84142395	0.93103448	0.22560976	0.4654321	0.43461538	0.81481481
1965	0.80933852	0.926365	0.98406375	0.97826087	0.49423077	0.68835616	0.80566802	0.96666667	0.21400778	0.47740246	0.48241206	0.72413793
1966	0.78406552	0.95116212	0.98239437	0.97959184	0.52801519	0.69340974	0.84946237	0.92708333	0.23381295	0.45719159	0.43037975	0.68539326

1967	0.81060606	0.94565333	0.98	1	0.51028037	0.73043478	0.82040816	0.93939394	0.25274725	0.43289868	0.40298507	0.78494624
1968	0.81071429	0.96315433	0.98672566	0.99029126	0.54735683	0.75987842	0.80717489	0.97058824	0.26156942	0.44176842	0.45555556	0.77777778
1969	0.83364486	0.95418203	0.96774194	1	0.5470852	0.77683616	0.81666667	0.97029703	0.30737705	0.44969502	0.47959184	0.84693878
1970	0.825	0.96156773	0.96934866	1	0.51619645	0.70526316	0.79051383	0.98373984	0.29554656	0.50274941	0.54	0.80165289
1971	0.85697941	0.97084606	0.96982759	0.98425197	0.53404539	0.72964169	0.85777778	0.976	0.3125	0.55745063	0.54404145	0.80327869
1972	0.83416252	0.96587515	0.97329377	1	0.52385686	0.76399027	0.79268293	0.93678161	0.30550285	0.51175192	0.53846154	0.84662577
1973	0.85472973	0.9449485	0.98818898	1	0.54018445	0.76584022	0.88844622	0.97350993	0.3097561	0.55186175	0.55156951	0.79591837
1974	0.85921325	0.95991221	0.99029126	0.99324324	0.55542169	0.74384236	0.86601307	0.95238095	0.32537961	0.53188934	0.56981132	0.80714286
1975	0.87372449	0.96035967	0.99295775	1	0.58394161	0.71621622	0.82978723	0.94701987	0.265	0.48461927	0.53846154	0.8041958
1976	0.85298197	0.98483438	0.99245283	1	0.55447154	0.71698113	0.82129278	0.96688742	0.29325513	0.51406356	0.58333333	0.81506849
1977	0.88676236	0.96181056	0.99206349	1	0.58633094	0.72378517	0.872	0.99358974	0.26993865	0.48976013	0.59174312	0.86451613
1978	0.85888502	0.97753105	0.99621212	1	0.5821501	0.70810811	0.90874525	0.9556962	0.20209059	0.48681684	0.57322176	0.85430464

0.0430011

0.00742768

Gráfico 9a: Cobertura condicional de secundaria incompleta de acuerdo a la educación de los padres

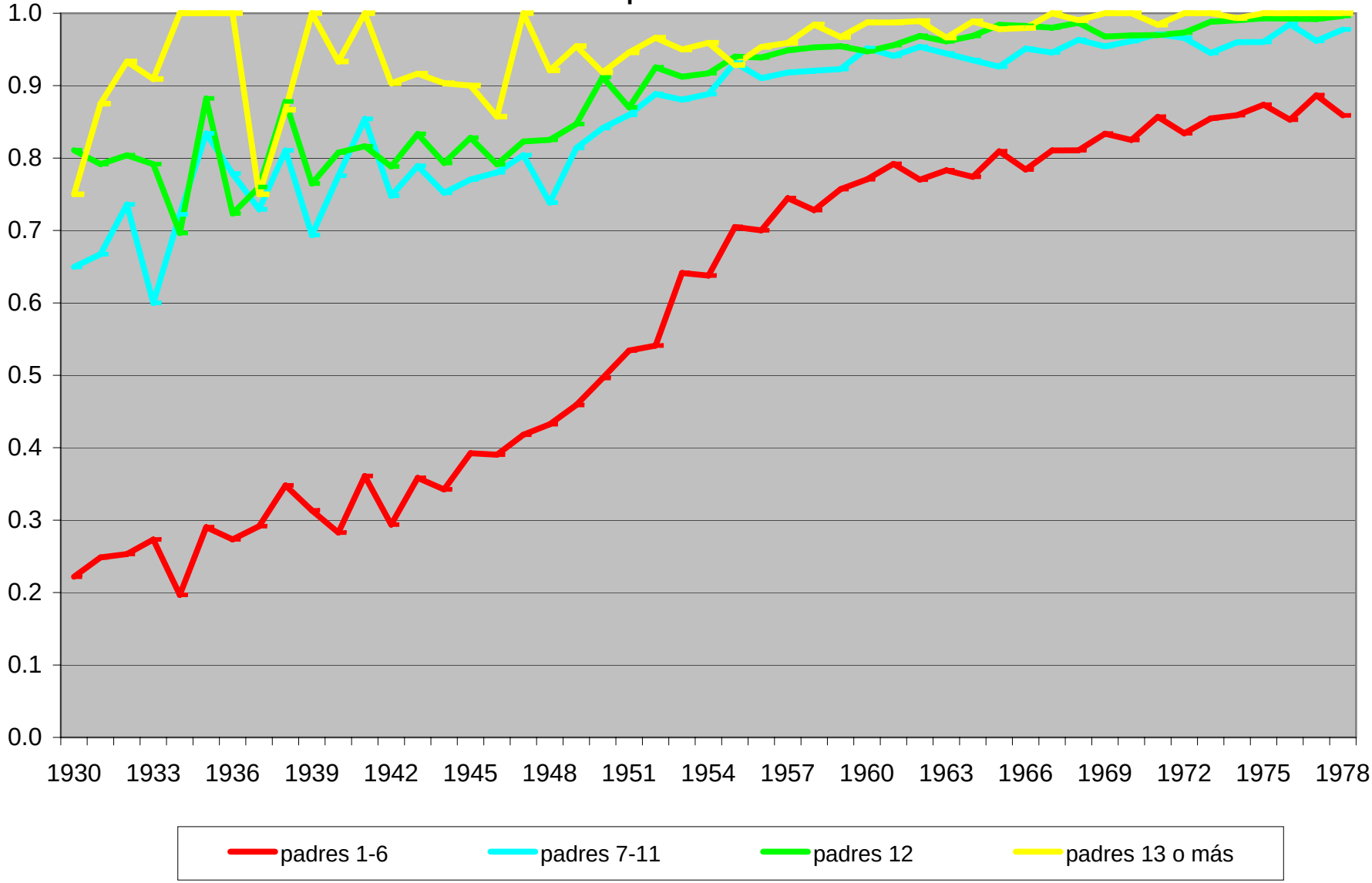


Gráfico 9b: Cobertura condicional de secundaria completa de acuerdo a la educación de los padres

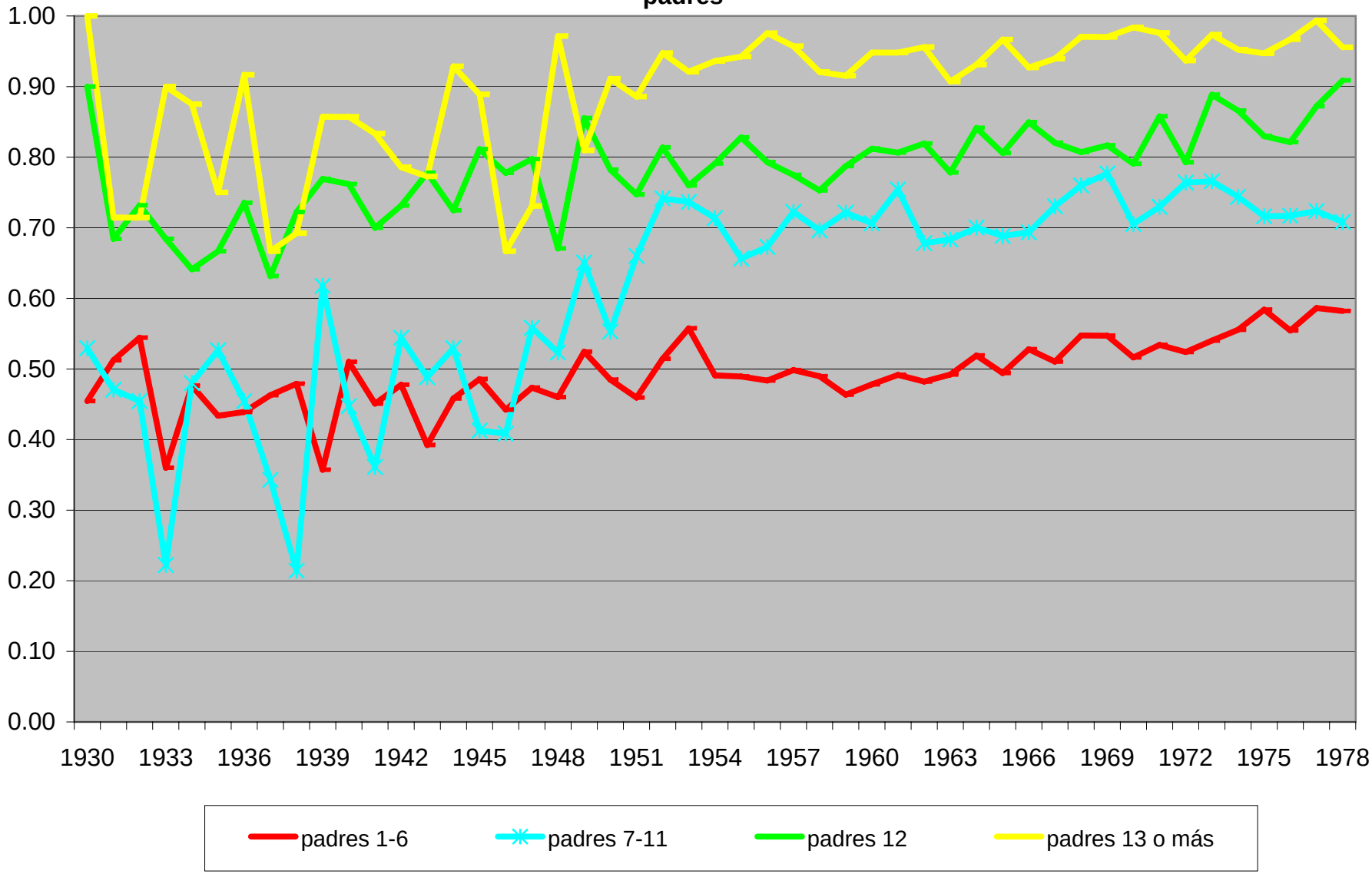


Gráfico 9c: Cobertura condicional de universitaria incompleta de acuerdo a la educación de los padres

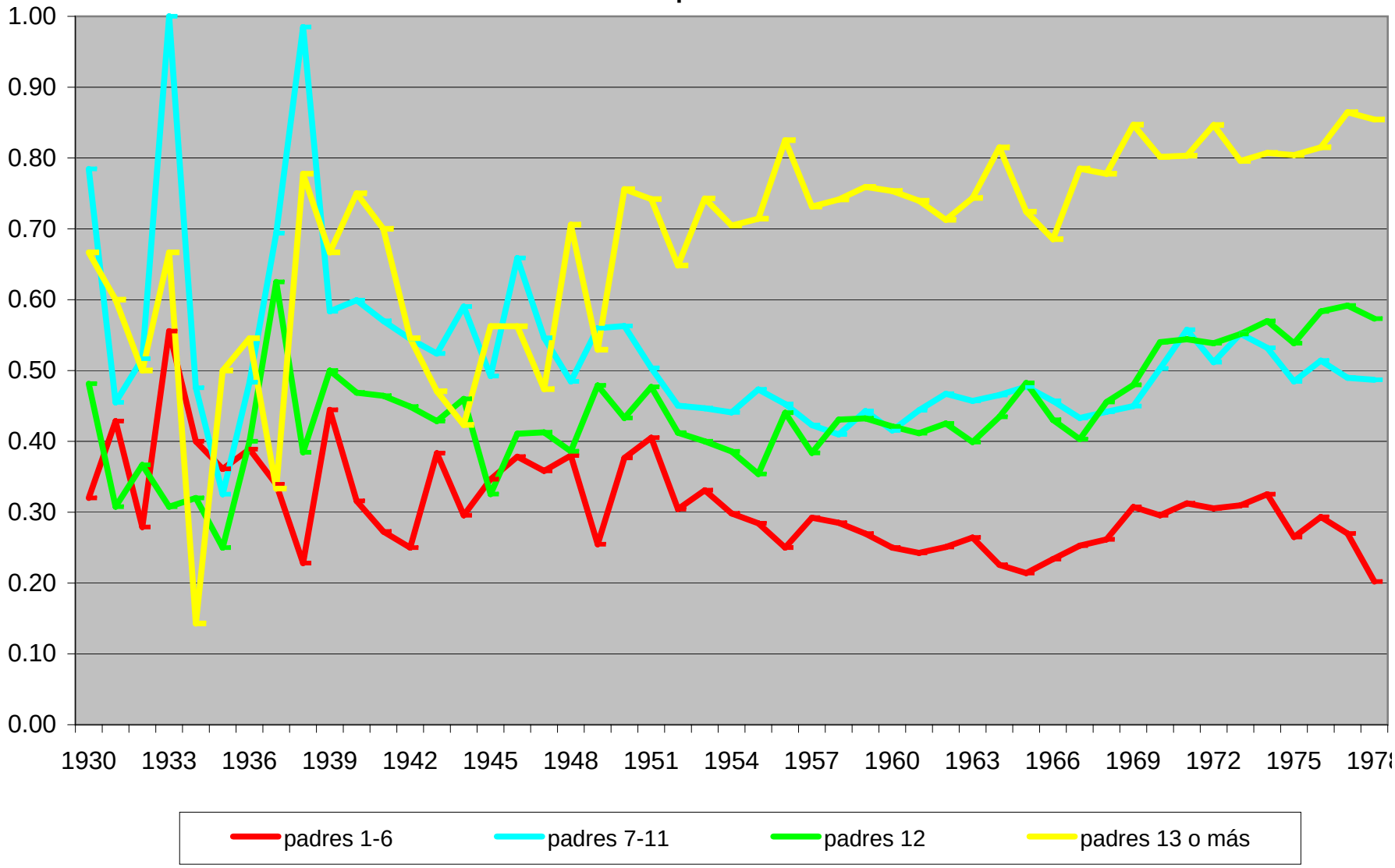


TABLA 10

PORCENTAJE DE INDIVIDUOS EN CADA COHORTE QUE CUMPLE LA ESCOLARIDAD MÍNIMA, POR COHORTE DE NACIMIENTO

Cohorte	4 o más años	6 o más años	8 o más años	12 o más años
1930	69.80%	53.60%	28.10%	17.60%
1931	67.80%	53.60%	30.60%	17.40%
1932	71.20%	55.80%	31.90%	19.90%
1933	67.30%	51.10%	30.20%	15.00%
1934	70.90%	51.40%	26.60%	15.20%
1935	71.50%	57.40%	33.50%	19.30%
1936	72.10%	54.20%	31.40%	18.70%
1937	70.70%	57.10%	31.10%	15.90%
1938	74.30%	61.20%	36.00%	19.00%
1939	71.80%	57.20%	33.80%	19.10%
1940	74.80%	58.60%	31.70%	17.80%
1941	80.10%	63.80%	40.80%	21.30%
1942	79.40%	64.30%	36.70%	21.40%
1943	81.00%	67.20%	41.20%	21.40%
1944	81.80%	65.50%	39.30%	22.30%
1945	81.70%	66.30%	42.30%	23.50%
1946	82.40%	66.80%	43.70%	24.60%
1947	83.70%	71.60%	46.60%	26.80%
1948	85.00%	72.70%	48.00%	26.50%
1949	86.80%	73.20%	49.90%	30.50%
1950	87.20%	75.60%	54.30%	31.70%
1951	88.80%	78.00%	57.20%	33.10%
1952	88.80%	77.10%	59.60%	37.40%
1953	89.50%	80.70%	66.90%	42.20%
1954	90.00%	80.10%	66.20%	39.40%
1955	91.70%	84.20%	71.60%	43.40%
1956	91.90%	82.60%	70.90%	41.20%
1957	93.20%	86.20%	74.90%	45.00%
1958	93.30%	84.70%	74.10%	44.30%
1959	92.90%	85.10%	75.30%	43.80%
1960	92.50%	86.30%	76.00%	45.70%
1961	94.50%	88.60%	79.00%	49.90%
1962	93.70%	87.30%	77.40%	46.40%
1963	95.30%	88.10%	78.50%	48.30%
1964	93.90%	87.60%	77.30%	49.00%
1965	94.30%	88.50%	79.60%	49.40%
1966	94.50%	88.40%	79.80%	51.40%
1967	95.00%	90.10%	81.30%	51.40%
1968	95.40%	90.30%	82.30%	54.70%
1969	95.90%	91.20%	84.50%	57.00%
1970	96.00%	91.40%	83.50%	54.20%
1971	96.10%	92.20%	86.10%	58.70%
1972	96.70%	92.60%	84.80%	56.60%
1973	96.80%	93.40%	86.60%	61.60%
1974	97.40%	93.90%	87.40%	61.40%
1975	97.40%	94.70%	88.90%	63.70%
1976	98.10%	94.80%	89.40%	63.60%
1977	98.40%	95.70%	90.00%	66.70%
1978	97.60%	95.00%	89.30%	66.90%

Gráfico 10: Porcentaje de individuos que cumple la escolaridad mínima, por cohorte de nacimiento

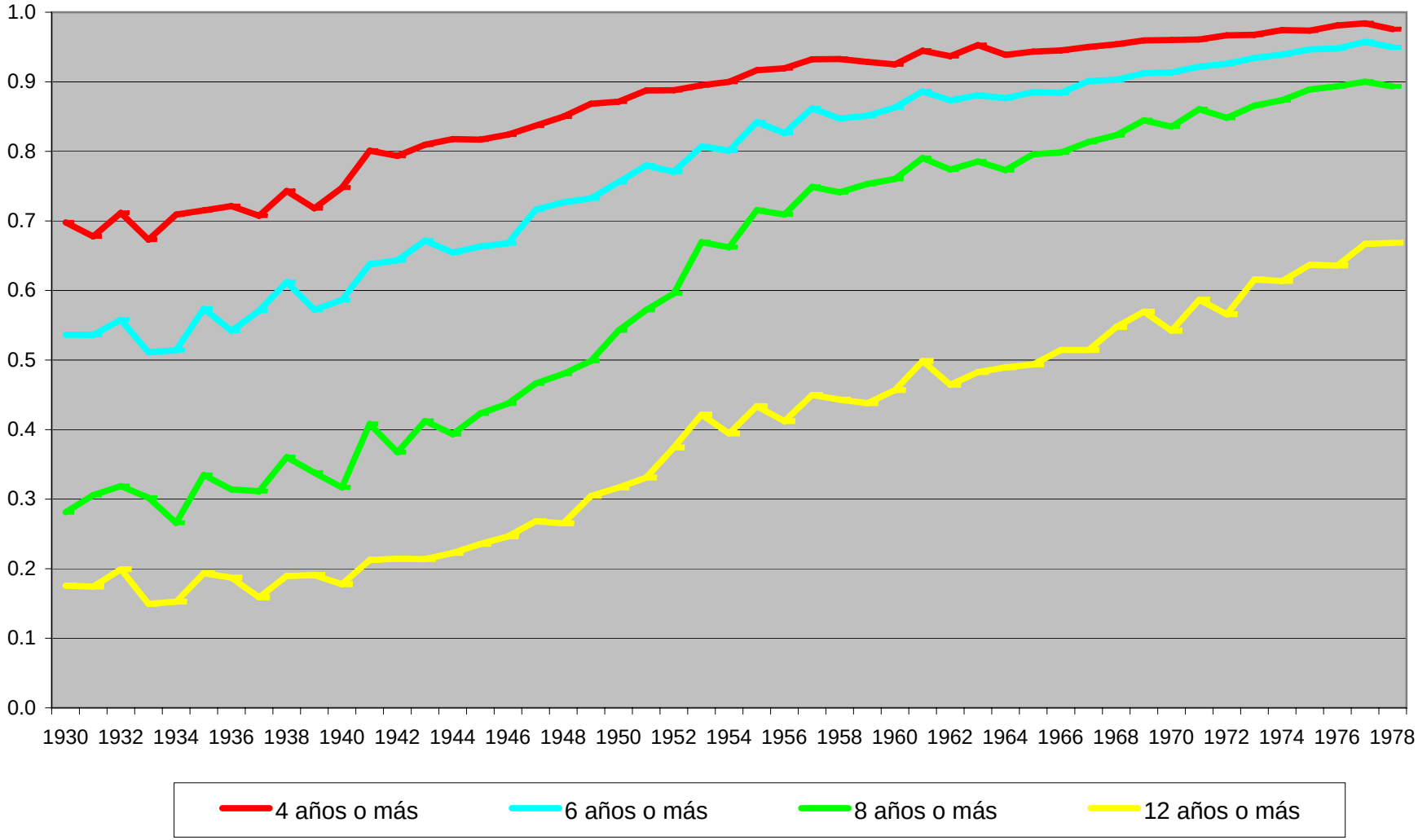
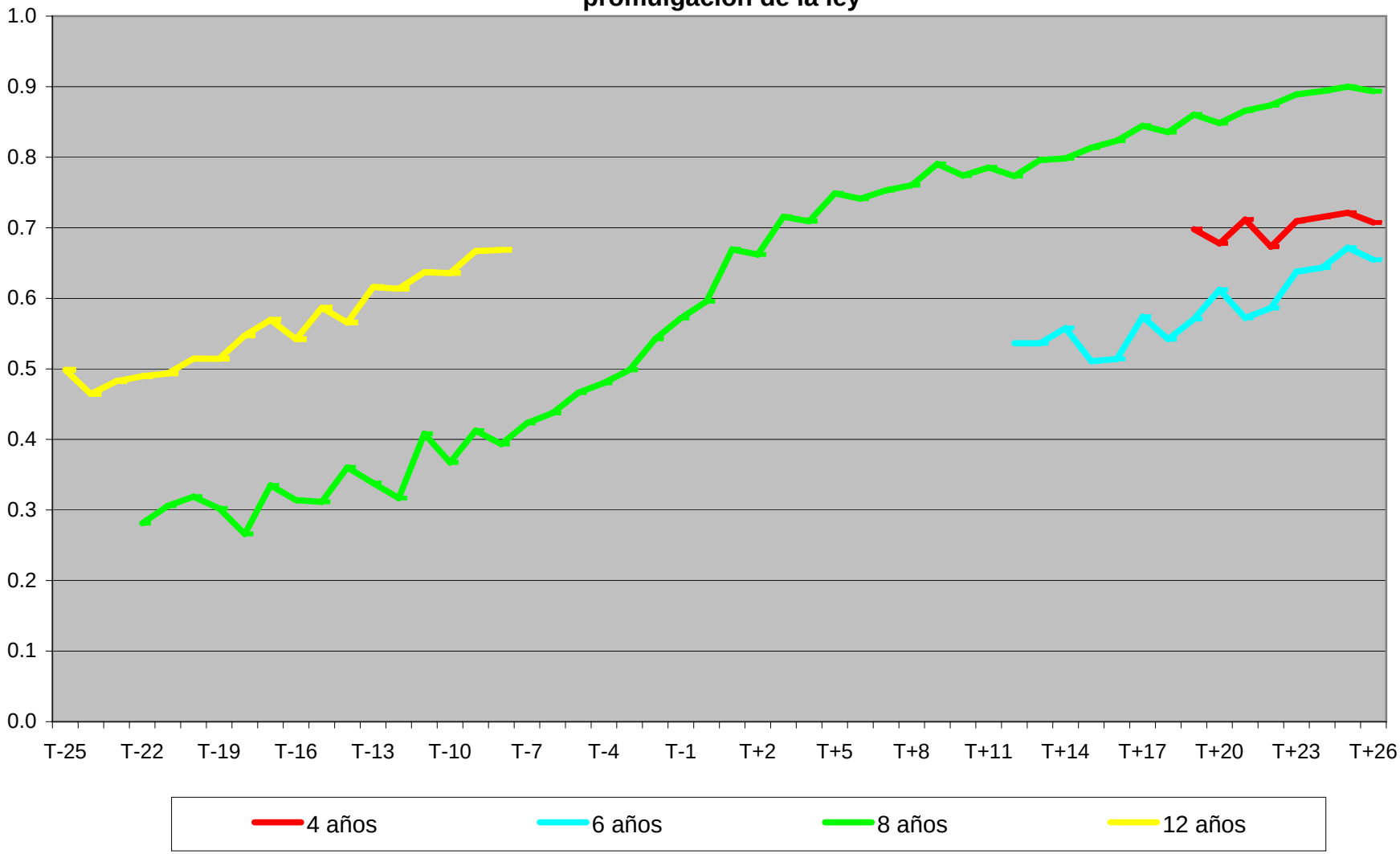


TABLA 11

PORCENTAJE DE INDIVIDUOS EN CADA COHORTE QUE CUMPLE LA ESCOLARIDAD MÍNIMA, POR MOMENTO DE PROMULGACIÓN DE LA LEY

Momento	4 o más años	6 o más años	8 o más años	12 o más años
t-25				49.87%
t-24				46.44%
t-23				48.25%
t-22			28.10%	48.96%
t-21			30.59%	49.36%
t-20			31.88%	51.44%
t-19			30.22%	51.44%
t-18			26.60%	54.73%
t-17			33.48%	56.96%
t-16			31.38%	54.19%
t-15			31.15%	58.65%
t-14			36.03%	56.58%
t-13			33.82%	61.59%
t-12			31.68%	61.36%
t-11			40.82%	63.69%
t-10			36.73%	63.58%
t-9			41.24%	66.71%
t-8			39.33%	66.85%
t-7			42.32%	
t-6			43.74%	
t-5			46.63%	
t-4			48.01%	
t-3			49.86%	
t-2			54.26%	
t-1			57.19%	
t0			59.57%	
t+1			66.94%	
t+2			66.21%	
t+3			71.55%	
t+4			70.92%	
t+5			74.88%	
t+6			74.12%	
t+7			75.32%	
t+8			76.02%	
t+9			79.04%	
t+10			77.38%	
t+11			78.54%	
t+12		53.63%	77.31%	
t+13		53.62%	79.59%	
t+14		55.79%	79.83%	
t+15		51.09%	81.35%	
t+16		51.42%	82.34%	
t+17		57.39%	84.46%	
t+18		54.19%	83.55%	
t+19	69.79%	57.06%	86.05%	
t+20	67.76%	61.21%	84.82%	
t+21	71.16%	57.23%	86.59%	
t+22	67.29%	58.63%	87.35%	
t+23	70.92%	63.78%	88.90%	
t+24	71.52%	64.34%	89.36%	
t+25	72.12%	67.17%	90.01%	
t+26	70.74%	65.46%	89.35%	

Gráfico 11: Porcentaje de individuos que cumple la escolaridad mínima, por momento de promulgación de la ley



REGRESIÓN 2

ANÁLISIS DE CAMBIO ESTRUCTURAL EN LA PROPORCIÓN DE INDIVIDUOS CON AL MENOS 8 AÑOS DE ESCOLARIDAD

A. CAMBIO ESTRUCTURAL SÓLO EN T=0, 1952

Number of obs	49
F(4, 45)	25784.21
Prob > F	0
R-squared	0.9985
Root MSE	0.02617

p8_	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
c	0.241	0.015	16.12	0	0.211	0.271
tendencia	0.012	0.001	10.61	0	0.010	0.015
d1952	0.210	0.033	6.43	0	0.144	0.276
tend1952	-0.003	0.001	-2.15	0.037	-0.006	0.000

B. CAMBIO ESTRUCTURAL EN 1944 - 1953 - 1957

Number of obs	49
F(8, 41)	25724.86
Prob > F	0
R-squared	0.9994
Root MSE	0.01701

p8_	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
c	0.270	0.013	20.95	0	0.244	0.296
tendencia	0.008	0.002	4.72	0	0.005	0.012
d1944	-0.256	0.020	-12.78	0	-0.297	-0.216
tend1944	0.017	0.002	8.80	0	0.013	0.021
d1953	0.232	0.103	2.24	0.031	0.023	0.441
tend1953	-0.008	0.004	-1.88	0.068	-0.016	0.001
d1957	0.271	0.103	2.63	0.012	0.063	0.479
tend1957	-0.009	0.004	-2.36	0.023	-0.018	-0.001

TABLA 12
TENDENCIA PARA EL PORCENTAJE DE INDIVIDUOS CON 8 O MÁS AÑOS DE EDUCACIÓN

A. CAMBIO ESTRUCTURAL SÓLO EN T=0, 1952

	Constante			Tendencia		
Cohorte	Parámetro	IC inferior	IC superior	Parámetro	IC inferior	IC superior
1930-1951	0.241	0.209	0.272	0.012	0.010	0.015
1952-1978	0.451	0.391	0.511	0.009	0.008	0.011

B. CAMBIO ESTRUCTURAL EN 1944 - 1953 - 1957

	Constante			Tendencia		
Cohorte	Parámetro	IC inferior	IC superior	Parámetro	IC inferior	IC superior
1930-1943	0.270	0.242	0.298	0.008	0.004	0.012
1944-1952	0.014	-0.024	0.051	0.025	0.023	0.027
1953-1956	0.245	-0.324	0.815	0.017	-0.005	0.040
1957-1978	0.516	0.491	0.542	0.008	0.007	0.009

Gráfico 12: Tendencia para el Porcentaje de Individuos con 8 o más años de Educación

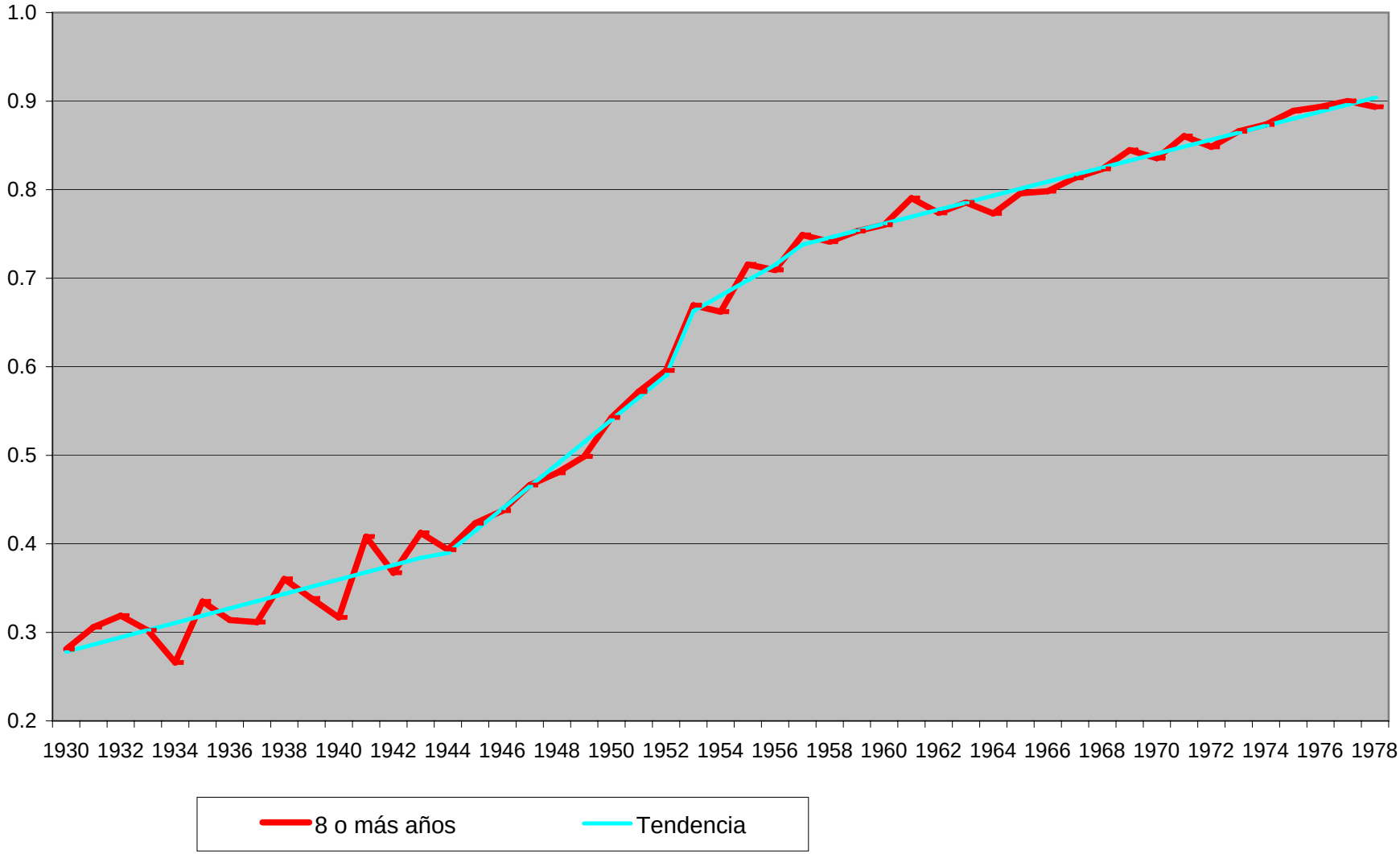


Gráfico 12: Tendencia para el Porcentaje de Individuos con 8 o más años de Educación, selección

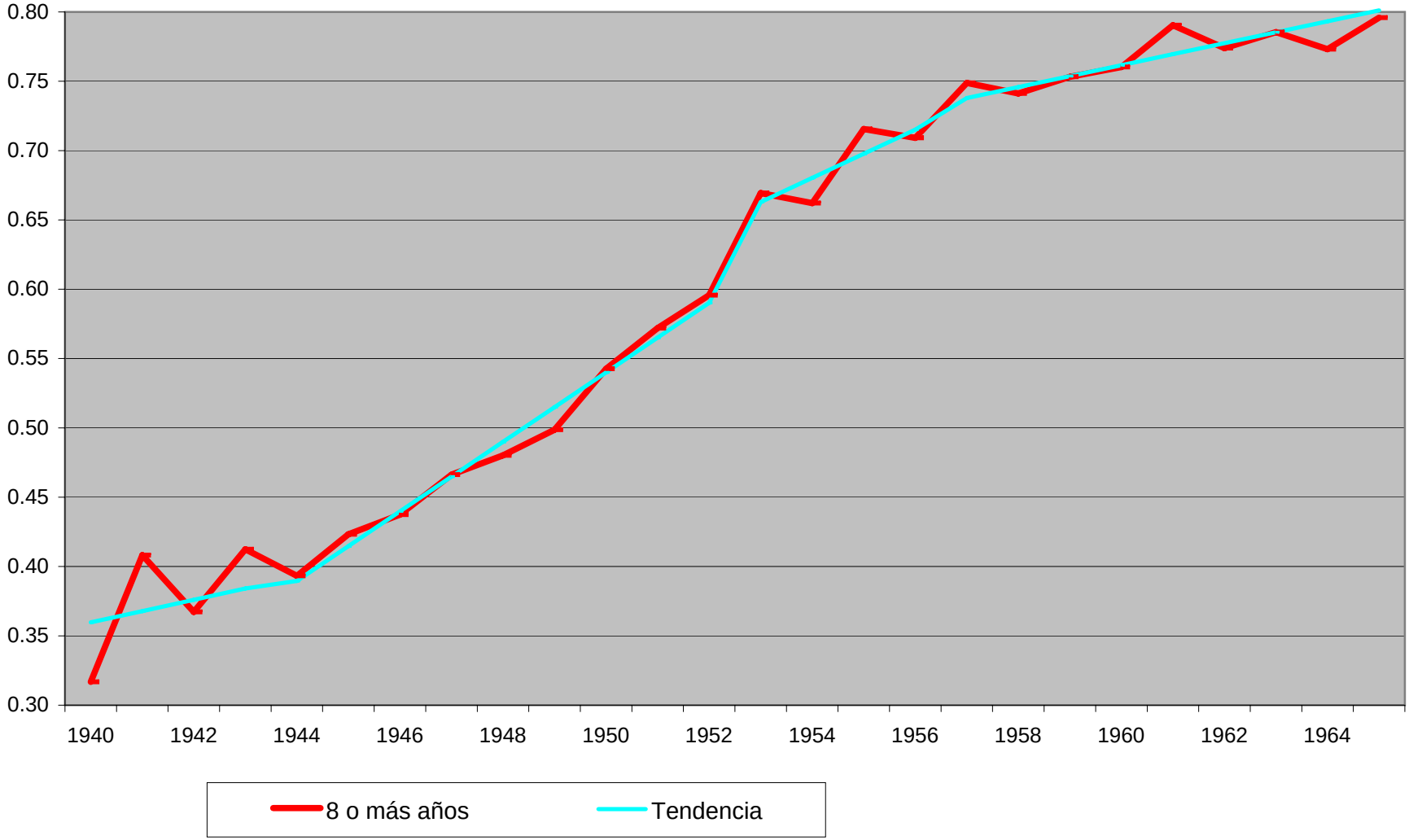
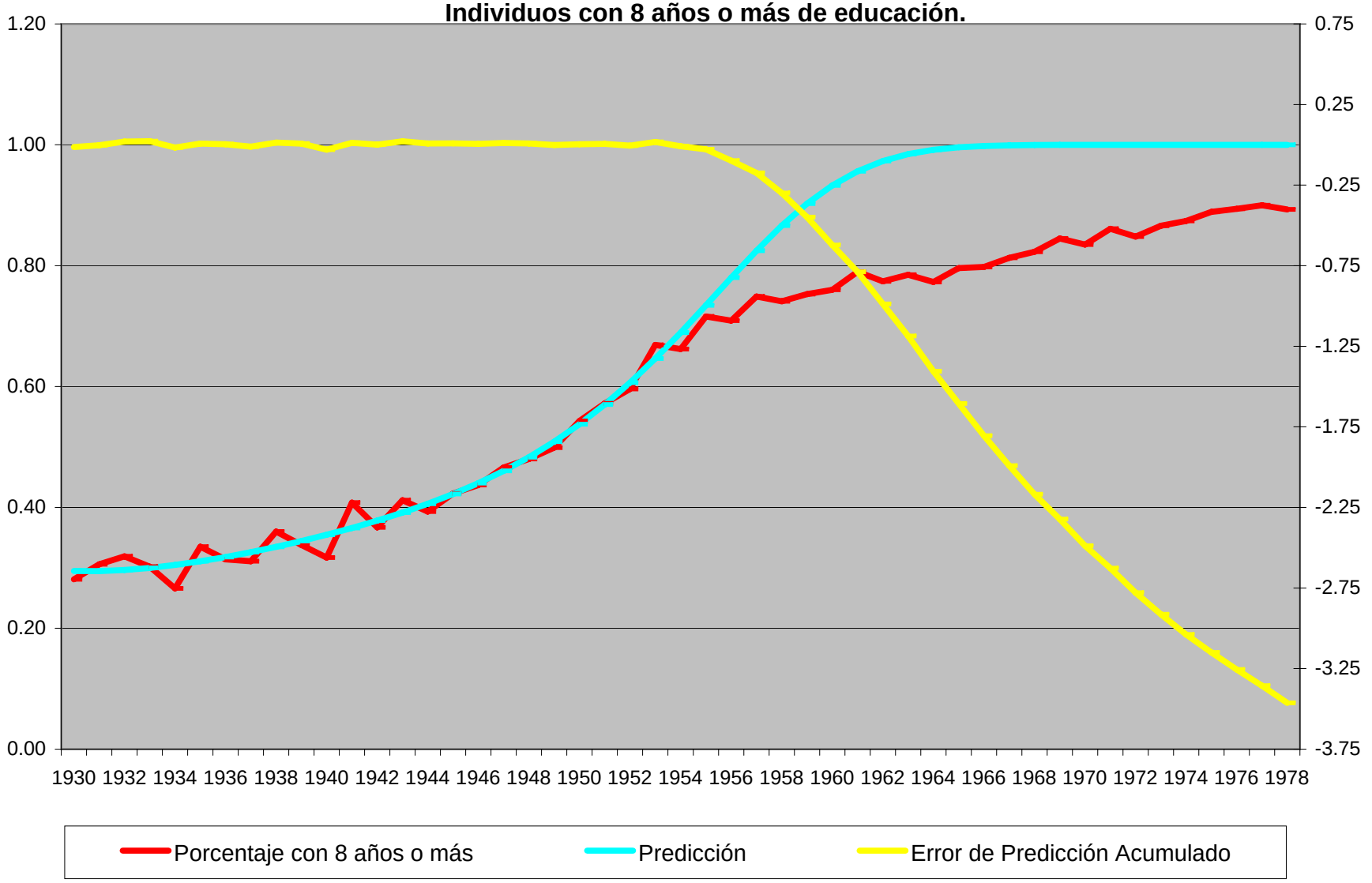


TABLA 13
ESTUDIO DE EVENTO: IMPACTO DE LA NUEVA LEY DE EDUCACIÓN SOBRE EL PORCENTAJE DE INDIVIDUOS CON 8 AÑOS O MÁS DE EDUCACIÓN

Cohorte	Momento al Evento	Porcentaje de la Cohorte con 8 años o más de educación	Predicción	Error de Predicción	Error de Predicción Acumulado	Test θ
1930	-22	28.10%	29.48%	-1.38%	-1.38%	
1931	-21	30.60%	29.47%	1.13%	-0.24%	
1932	-20	31.90%	29.65%	2.25%	2.01%	
1933	-19	30.20%	29.99%	0.21%	2.22%	
1934	-18	26.60%	30.48%	-3.88%	-1.66%	
1935	-17	33.50%	31.08%	2.42%	0.76%	
1936	-16	31.40%	31.79%	-0.39%	0.37%	
1937	-15	31.10%	32.59%	-1.49%	-1.12%	
1938	-14	36.00%	33.47%	2.53%	1.41%	
1939	-13	33.80%	34.43%	-0.63%	0.78%	
1940	-12	31.70%	35.47%	-3.77%	-2.99%	
1941	-11	40.80%	36.60%	4.20%	1.21%	
1942	-10	36.70%	37.82%	-1.12%	0.08%	
1943	-9	41.20%	39.15%	2.05%	2.13%	
1944	-8	39.30%	40.61%	-1.31%	0.82%	
1945	-7	42.30%	42.23%	0.07%	0.89%	
1946	-6	43.70%	44.02%	-0.32%	0.57%	
1947	-5	46.60%	46.04%	0.56%	1.13%	
1948	-4	48.00%	48.31%	-0.31%	0.82%	
1949	-3	49.90%	50.87%	-0.97%	-0.15%	
1950	-2	54.30%	53.77%	0.53%	0.38%	
1951	-1	57.20%	57.02%	0.18%	0.56%	
1952	0	59.60%	60.64%	-1.04%	-0.48%	-0.469172
1953	1	66.90%	64.63%	2.27%	1.79%	0.3911326
1954	2	66.20%	68.92%	-2.72%	-0.93%	-0.385965
1955	3	71.60%	73.43%	-1.83%	-2.75%	-0.744495
1956	4	70.90%	78.00%	-7.10%	-9.86%	-2.094068
1957	5	74.90%	82.47%	-7.57%	-17.43%	-3.300809
1958	6	74.10%	86.62%	-12.52%	-29.95%	-5.183016
1959	7	75.30%	90.27%	-14.97%	-44.91%	-7.227061
1960	8	76.00%	93.29%	-17.29%	-62.20%	-9.403769
1961	9	79.00%	95.62%	-16.62%	-78.82%	-11.28418
1962	10	77.40%	97.31%	-19.91%	-98.74%	-13.45808
1963	11	78.50%	98.45%	-19.95%	-118.69%	-15.47434
1964	12	77.30%	99.17%	-21.87%	-140.56%	-17.59348
1965	13	79.60%	99.58%	-19.98%	-160.54%	-19.35409
1966	14	79.80%	99.81%	-20.01%	-180.55%	-21.01971
1967	15	81.30%	99.92%	-18.62%	-199.16%	-22.44431
1968	16	82.30%	99.97%	-17.67%	-216.83%	-23.70027
1969	17	84.50%	99.99%	-15.49%	-232.32%	-24.67349
1970	18	83.50%	100.00%	-16.50%	-248.81%	-25.71657
1971	19	86.10%	100.00%	-13.90%	-262.71%	-26.46243
1972	20	84.80%	100.00%	-15.20%	-277.91%	-27.31564
1973	21	86.60%	100.00%	-13.40%	-291.31%	-27.97181
1974	22	87.40%	100.00%	-12.60%	-303.91%	-28.53796
1975	23	88.90%	100.00%	-11.10%	-315.01%	-28.95558
1976	24	89.40%	100.00%	-10.60%	-325.61%	-29.32352
1977	25	90.00%	100.00%	-10.00%	-335.61%	-29.63564
1978	26	89.30%	100.00%	-10.70%	-346.31%	-30.00729

Gráfico 13: Estudio de Evento, Impacto de la Ley de Educación sobre el Porcentaje de Individuos con 8 años o más de educación.



REGRESIÓN 3: COBERTURA ABSOLUTA VS INGRESOS AL NACER Y A LOS 18

A. SIN CAMBIO ESTRUCTURAL

Padres con 0-6 años de educación

Number of obs	49
F(2, 46)	112.49
Prob > F	0
R-squared	0.8782
Root MSE	0.0127

Cobertura Abs	Coef.	Std.Err.	t	P>|t|	[95%Conf.	Interval]
10 antes de n	4.11E-07	2.10E-07	1.96	0.056	-1.10E-08	8.33E-07
10 antes de lo	1.43E-06	1.75E-07	8.18	0	1.08E-06	1.79E-06
C	-0.045189	0.0082717	-5.46	0	-0.0618392	-0.0285389

	Padres 0-6		Padres 7-11	
Variable	Parámetro	Elasticidad	Parámetro	Elasticidad
10 antes de n	4.11E-07	0.28	8.04E-07	0.17
10 antes de 1	1.43E-06	1.26	2.69E-06	0.74

Parámetros significativos al 95%

B. CON CAMBIO ESTRUCTURAL EN 1956

Padres con 0-6 años de educación

Number of obs	49
F(6, 43)	637.36
Prob > F	0
R-squared	0.9888
Root MSE	0.01013

Cobertura Abs	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
10 antes de n	2.01E-06	6.76E-07	2.98	0.005	6.5E-07	3.4E-06
10 antes de lo	1.52E-06	1.41E-07	10.8	0	1.2E-06	1.8E-06
C	-1.32E-01	3.45E-02	-3.83	0	-2.0E-01	-6.2E-02
1956_10 ante	-7.57E-07	7.96E-07	-0.95	0.347	-2.4E-06	8.5E-07
1956_10 ante	-1.45E-06	5.33E-07	-2.72	0.009	-2.5E-06	-3.7E-07
D1956	1.54E-01	4.03E-02	3.83	0	7.3E-02	2.4E-01

	Padres 0-6		Padres 7-11	
Parámetros	1930-1955	1956-1978	1930-1955	1956-1978
10 antes de n	2.01E-06	1.25E-06	3.72E-06	2.79E-06
10 antes de 1	1.52E-06	7.00E-08	2.84E-06	-5.50E-07

	Padres 0-6		Padres 7-11	
Elasticidad	1930-1955	1956-1978	1930-1955	1956-1978
10 antes de n	1.74	0.74	0.86	0.57
10 antes de 1	1.56	0.06	0.78	- 0.15

Parámetros significativos al 95%

Padres con 7-11 años de educación

Number of obs	49
F(2, 46)	82.47
Prob > F	0
R-squared	0.7946
Root MSE	0.03275

Cobertura Abs	Coef.	Std.Err.	t	P>|t|	[95%Conf.	Interval]
10 antes de n	8.04E-07	4.13E-07	1.95	0.057	-2.66E-08	1.64E-06
10 antes de lc	2.69E-06	3.26E-07	8.26	0	2.04E-06	3.35E-06
C	0.0218168	0.0212166	1.03	0.309	-0.0208899	0.0645235

Padres con 7-11 años de educación

Number of obs	49
F(6, 43)	2088.62
Prob > F	0
R-squared	0.991
Root MSE	0.02756

Cobertura Abs	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
10 antes de n	3.72E-06	4.50E-06	0.83	0.413	-5.4E-06	1.3E-05
10 antes de lc	2.84E-06	3.15E-07	9	0	2.2E-06	3.5E-06
C	-1.37E-01	2.25E-01	-0.61	0.545	-5.9E-01	3.2E-01
1956_10 ante	-9.33E-07	4.51E-06	-0.21	0.837	-1.0E-05	8.2E-06
1956_10 ante	-3.39E-06	4.48E-07	-7.56	0	-4.3E-06	-2.5E-06
D1956	3.24E-01	2.25E-01	1.44	0.158	-1.3E-01	7.8E-01

TABLA 14: COBERTURA ABSOLUTA Y PREDICCIÓN USANDO LOS INGRESOS AL NACER Y A LOS 18

	Padres 0-6			Padres 7-11		
Cohorte	Cobertura Absoluta	Predicción Sin Cambio Estructural	Predicción Con Cambio Estructural	Cobertura Absoluta	Predicción Sin Cambio Estructural	Predicción Con Cambio Estructural
1930	0.02867384	0.05	0.0343444	0.26153846	0.20	0.171428
1931	0.04761905	0.05	0.0366851	0.14	0.20	0.1757486
1932	0.03342618	0.05	0.037016	0.16666667	0.20	0.1763504
1933	0.04784689	0.05	0.0380079	0.15384615	0.20	0.1781774
1934	0.03166227	0.05	0.040419	0.16304348	0.20	0.1826486
1935	0.04126984	0.05	0.0416674	0.13559322	0.20	0.1849384
1936	0.04166667	0.05	0.0414754	0.16666667	0.19	0.1845535
1937	0.04068522	0.04	0.0397874	0.17346939	0.19	0.1813845
1938	0.03376623	0.04	0.0400845	0.16883117	0.19	0.181911
1939	0.04454343	0.04	0.0416789	0.24509804	0.19	0.1848628
1940	0.04173913	0.04	0.0422254	0.20792079	0.19	0.1858713
1941	0.04098361	0.04	0.0422935	0.16842105	0.19	0.1860073
1942	0.03256445	0.05	0.0448714	0.21666667	0.19	0.1908054
1943	0.0504386	0.05	0.048834	0.19642857	0.20	0.1981768
1944	0.04381443	0.05	0.0505736	0.22705314	0.20	0.2014122
1945	0.0617284	0.05	0.0525021	0.15231788	0.20	0.2050032
1946	0.06222222	0.05	0.055323	0.20765027	0.21	0.2102749
1947	0.06798867	0.06	0.0600651	0.24271845	0.22	0.2191252
1948	0.07242694	0.07	0.067078	0.18636364	0.23	0.2322119
1949	0.05882353	0.07	0.0734171	0.29353234	0.24	0.2440424
1950	0.08606557	0.08	0.0796923	0.25838926	0.26	0.2557613
1951	0.09580838	0.09	0.0865627	0.27927928	0.27	0.2685854
1952	0.08112583	0.09	0.0948068	0.29287599	0.28	0.2839431
1953	0.11397059	0.10	0.1023464	0.28873239	0.30	0.2980302
1954	0.08974359	0.10	0.1004856	0.27688787	0.30	0.2945988
1955	0.09449637	0.10	0.0927568	0.28612717	0.29	0.2802474
1956	0.08184143	0.09	0.087599	0.2746988	0.28	0.2716483
1957	0.10522152	0.09	0.0876677	0.27833002	0.27	0.2737589
1958	0.09887251	0.08	0.08734	0.26086957	0.27	0.275591
1959	0.09172078	0.08	0.0876201	0.29345372	0.26	0.2780976
1960	0.08881356	0.08	0.0891383	0.27419355	0.26	0.2824396
1961	0.09158879	0.08	0.0913372	0.30991736	0.25	0.2884151
1962	0.09043478	0.08	0.0922526	0.30043541	0.25	0.2910715
1963	0.10015408	0.08	0.0935248	0.29188256	0.25	0.2940868
1964	0.08846384	0.08	0.0965978	0.3	0.26	0.2978456
1965	0.08327025	0.09	0.1011657	0.30175439	0.28	0.3034459
1966	0.0942029	0.10	0.1075104	0.29742033	0.30	0.3140974
1967	0.10176991	0.11	0.1133529	0.29563813	0.32	0.3235236
1968	0.11284722	0.12	0.1194342	0.32105263	0.33	0.3339747
1969	0.13661202	0.12	0.1256338	0.33065811	0.34	0.3459989
1970	0.12279226	0.13	0.1315613	0.33684211	0.35	0.3579201
1971	0.1393534	0.13	0.1388956	0.38779174	0.36	0.3734193
1972	0.1302589	0.13	0.1392153	0.37369792	0.36	0.3740677
1973	0.14048673	0.13	0.1358262	0.39137134	0.35	0.3674427
1974	0.15228426	0.13	0.1335265	0.37618403	0.36	0.3616844
1975	0.13316583	0.13	0.1302517	0.33184524	0.36	0.3528798
1976	0.13774105	0.14	0.1260106	0.36091298	0.37	0.3410758
1977	0.13880126	0.14	0.1230096	0.33888048	0.37	0.3314683
1978	0.09931507	0.15	0.1216289	0.33128834	0.38	0.325247

Gráfico 14a: Cobertura Absoluta y predicción para hijos de padres con 0-6 años de educación

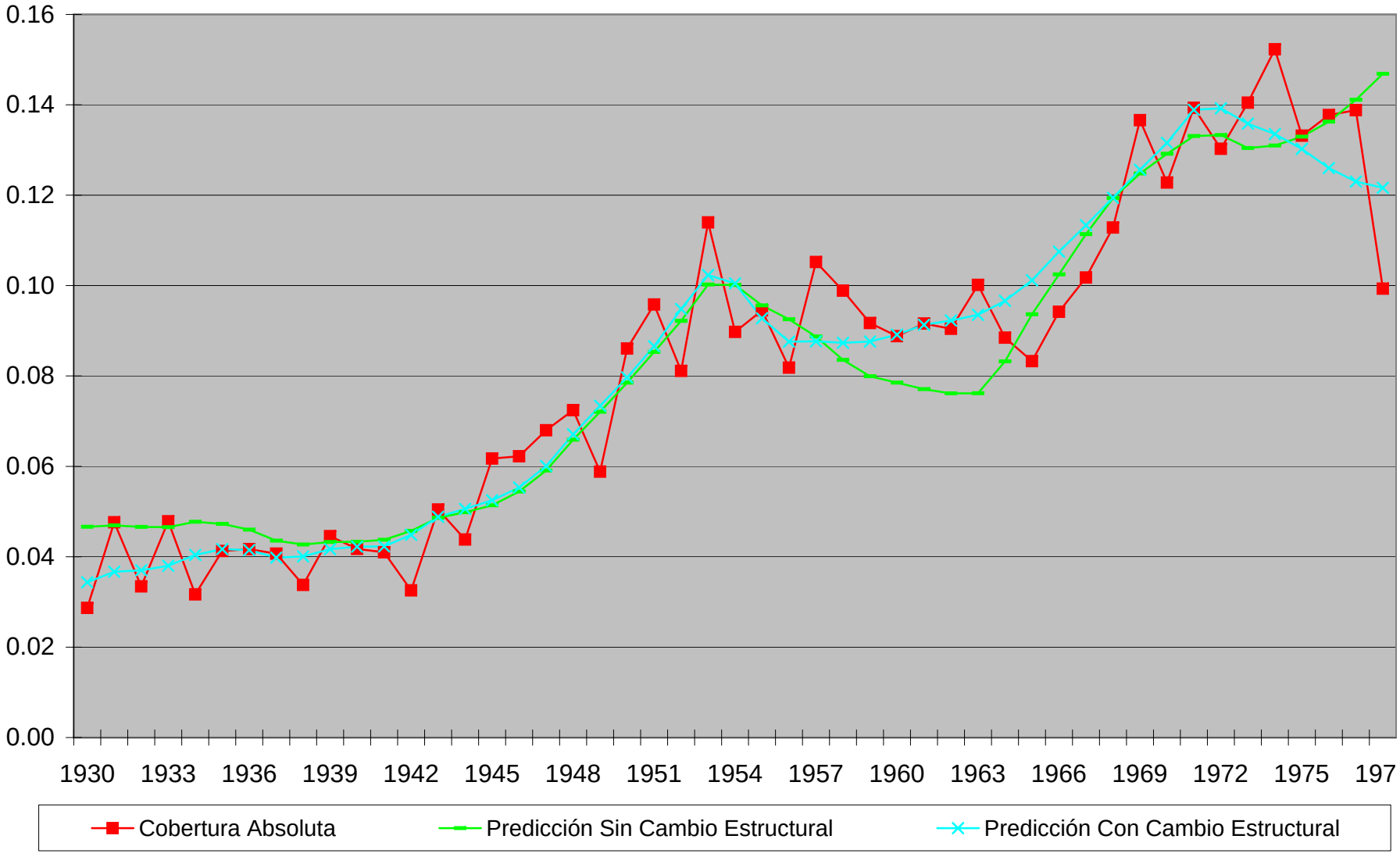
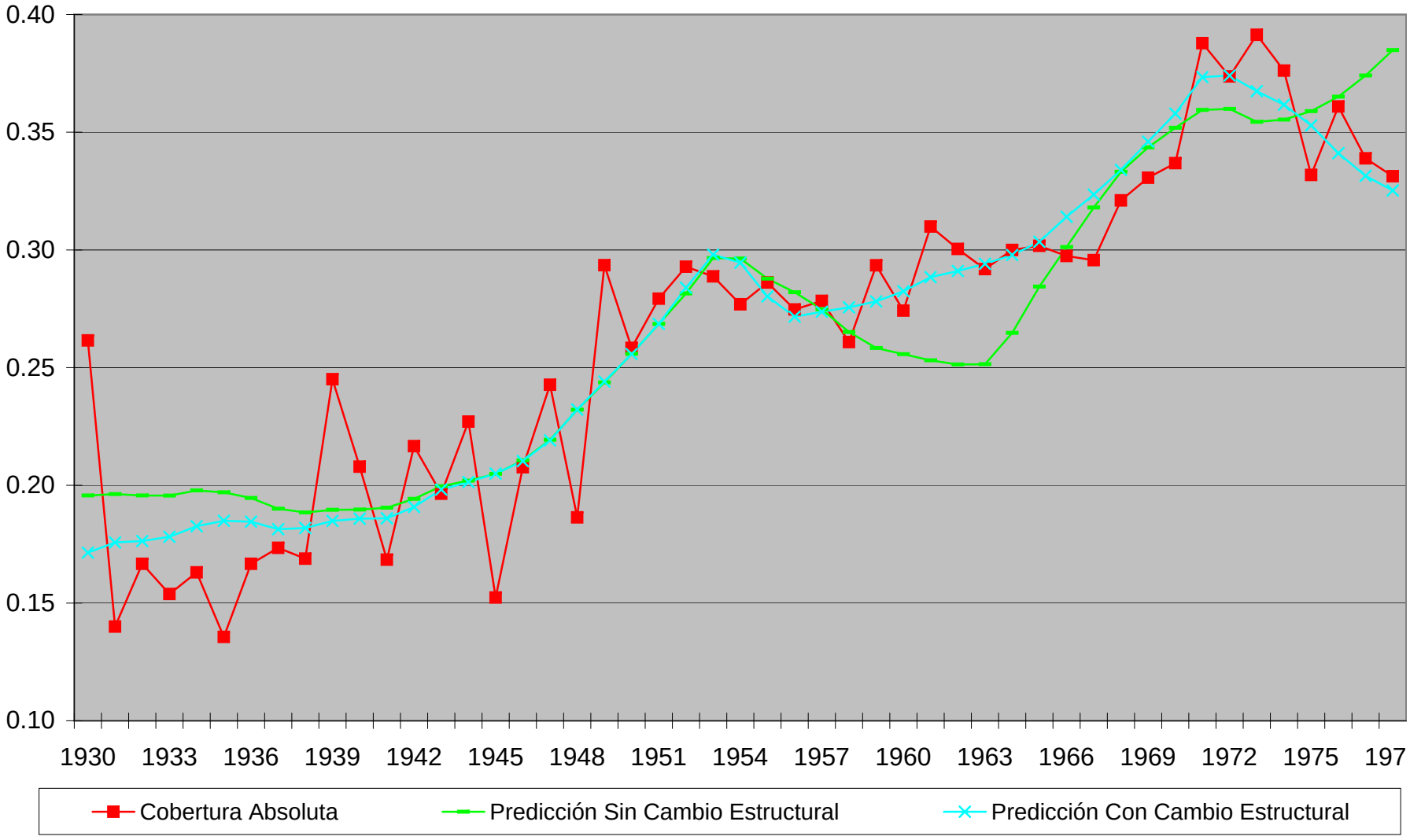


Gráfico 14b: Cobertura Absoluta y predicción para hijos de padres con 7-11 años de educación



REGRESIÓN 4: COBERTURA ABSOLUTA VS. ESTRUCTURA FAMILIAR

A. Regresión sin Cambio Estructural

Padres con 0-6 años de educación

Number of ob	49
F(2, 47)	207.03
Prob > F	0
R-squared	0.8964
Root MSE	0.02951

Cobertura Abs	Coef.	Std.Err.	t	P>|t|	[95%Conf.	Interval]
padres solos	- 0.74	0.12	-6.38	0	-9.76E-01	-5.08E-01
C	0.15	0.01	13.13	0	0.1253886	0.1707635

	Padres 0-6		Padres 7-11	
Variable	Parámetro	Elasticidad	Parámetro	Elasticidad
padres solos	-0.7417362	#REF!	-1.602022	-0.53691322

Parámetros significativos al 95%

B. Regresión con Cambio Estructural en 1968

Padres con 0-6 años de educación

Number of ob	49
F(4, 45)	481.9
Prob > F	0
R-squared	0.9563
Root MSE	0.01957

Cobertura Abs	Coef.	Std.Err.	t	P>|t|	[95%Conf.	Interval]
padres solos	- 0.57	0.10	-5.84	0	-7.69E-01	-3.74E-01
C	0.12	0.01	12.17	0	1.01E-01	1.41E-01
1968_padres	0.52	0.28	1.87	0.067	-3.88E-02	1.08E+00
D_1968	0.01	0.02	0.71	0.484	-0.02579	0.0536568

	Padres 0-6		Padres 7-11	
padres solos	1930-1967	1968-1978	1930-1967	1968-1978
Parámetro	-0.571642	-0.0513976	-1.363519	0.198612
Elasticidad	#REF!	-0.02936267	-0.52878927	0.04221201

Parámetros significativos al 95%

Padres con 7-11 años de educación

Number of obs	49
F(2, 47)	580.58
Prob > F	0
R-squared	0.9597
Root MSE	0.05589

Cobertura Abs	Coef.	Std.Err.	t	P>|t|	[95%Conf.	Interval]
padres solos	-1.60	0.19	-8.27	0	-1.99E+00	-1.21E+00
C	0.41	0.02	21.51	0	0.3672022	0.4429897

Padres con 7-11 años de educación

Number of obs	49
F(4, 45)	835
Prob > F	0
R-squared	0.9808
Root MSE	0.03943

Cobertura Abs	Coef.	Std.Err.	t	P>|t|	[95%Conf.	Interval]
padres solos	-1.36	0.17	-7.91	0	-1.71E+00	-1.02E+00
C	0.36	0.02	20.09	0	3.27E-01	4.00E-01
1968_padres	1.56	0.55	2.82	0.007	4.46E-01	2.68E+00
D_1968	-0.03	0.04	-0.57	0.569	-0.1153769	0.064202

TABLA 15: COBERTURA ABSOLUTA Y PREDICCIÓN USANDO LA ESTRUCTURA FAMILIAR

	Padres 0-6			Padres 7-11		
Cohorte	Cobertura Absoluta	Predicción Sin Cambio Estructural	Predicción Con Cambio Estructural	Cobertura Absoluta	Predicción Sin Cambio Estructural	Predicción Con Cambio Estructural
1930	0.02867384	0.08	0.0668598	0.26153846	0.25	0.2339434
1931	0.04761905	0.02	0.0208777	0.14	0.12	0.1242638
1932	0.03342618	0.09	0.0752046	0.16666667	0.28	0.253848
1933	0.04784689	0.09	0.0774734	0.15384615	0.28	0.2592597
1934	0.03166227	0.05	0.0443322	0.16304348	0.19	0.180209
1935	0.04126984	0.05	0.0487041	0.13559322	0.20	0.1906372
1936	0.04166667	0.03	0.0305777	0.16666667	0.15	0.147401
1937	0.04068522	0.07	0.05765	0.17346939	0.23	0.2119756
1938	0.03376623	0.08	0.0680486	0.16883117	0.26	0.2367789
1939	0.04454343	0.05	0.0443443	0.24509804	0.19	0.1802379
1940	0.04173913	0.05	0.0469526	0.20792079	0.20	0.1864594
1941	0.04098361	0.05	0.0487041	0.16842105	0.20	0.1906372
1942	0.03256445	0.09	0.0762052	0.21666667	0.28	0.2562346
1943	0.0504386	0.08	0.0702503	0.19642857	0.26	0.2420307
1944	0.04381443	0.07	0.05765	0.22705314	0.23	0.2119756
1945	0.0617284	0.09	0.0733478	0.15231788	0.27	0.249419
1946	0.06222222	0.06	0.0546958	0.20765027	0.22	0.2049289
1947	0.06798867	0.09	0.0736938	0.24271845	0.27	0.2502442
1948	0.07242694	0.07	0.0584696	0.18636364	0.23	0.2139305
1949	0.05882353	0.09	0.0775955	0.29353234	0.28	0.2595509
1950	0.08606557	0.09	0.0764407	0.25838926	0.28	0.2567965
1951	0.09580838	0.08	0.0678615	0.27927928	0.26	0.2363328
1952	0.08112583	0.09	0.0774254	0.29287599	0.28	0.2591451
1953	0.11397059	0.09	0.0769096	0.28873239	0.28	0.2579148
1954	0.08974359	0.08	0.0715161	0.27688787	0.27	0.2450499
1955	0.09449637	0.09	0.073529	0.28612717	0.27	0.2498511
1956	0.08184143	0.09	0.0736421	0.2746988	0.27	0.250121
1957	0.10522152	0.10	0.0816514	0.27833002	0.29	0.2692252
1958	0.09887251	0.09	0.0738982	0.26086957	0.27	0.250732
1959	0.09172078	0.10	0.0808577	0.29345372	0.29	0.2673321
1960	0.08881356	0.09	0.0764188	0.27419355	0.28	0.2567443
1961	0.09158879	0.10	0.0865208	0.30991736	0.31	0.2808401
1962	0.09043478	0.09	0.0763106	0.30043541	0.28	0.2564861
1963	0.10015408	0.10	0.0842062	0.29188256	0.30	0.2753191
1964	0.08846384	0.10	0.0821095	0.3	0.30	0.2703179
1965	0.08327025	0.09	0.0793091	0.30175439	0.29	0.2636383
1966	0.0942029	0.12	0.0966669	0.29742033	0.34	0.3050412
1967	0.10176991	0.11	0.0944891	0.29563813	0.33	0.2998467
1968	0.11284722	0.10	0.1317903	0.32105263	0.30	0.3506764
1969	0.13661202	0.11	0.1322501	0.33065811	0.32	0.3488997
1970	0.12279226	0.08	0.1301069	0.33684211	0.25	0.3571814
1971	0.1393534	0.11	0.1324498	0.38779174	0.32	0.3481279
1972	0.1302589	0.10	0.1318004	0.37369792	0.30	0.3506376
1973	0.14048673	0.07	0.1299711	0.39137134	0.25	0.3577064
1974	0.15228426	0.08	0.1302096	0.37618403	0.25	0.3567847
1975	0.13316583	0.10	0.1317497	0.33184524	0.30	0.3508334
1976	0.13774105	0.10	0.1316808	0.36091298	0.30	0.3510996
1977	0.13880126	0.09	0.1311973	0.33888048	0.28	0.3529681
1978	0.09931507	0.08	0.1304942	0.33128834	0.26	0.3556849

Gráfico 15a: Cobertura Absoluta y predicción para hijos de padres con 0-6 años de educación

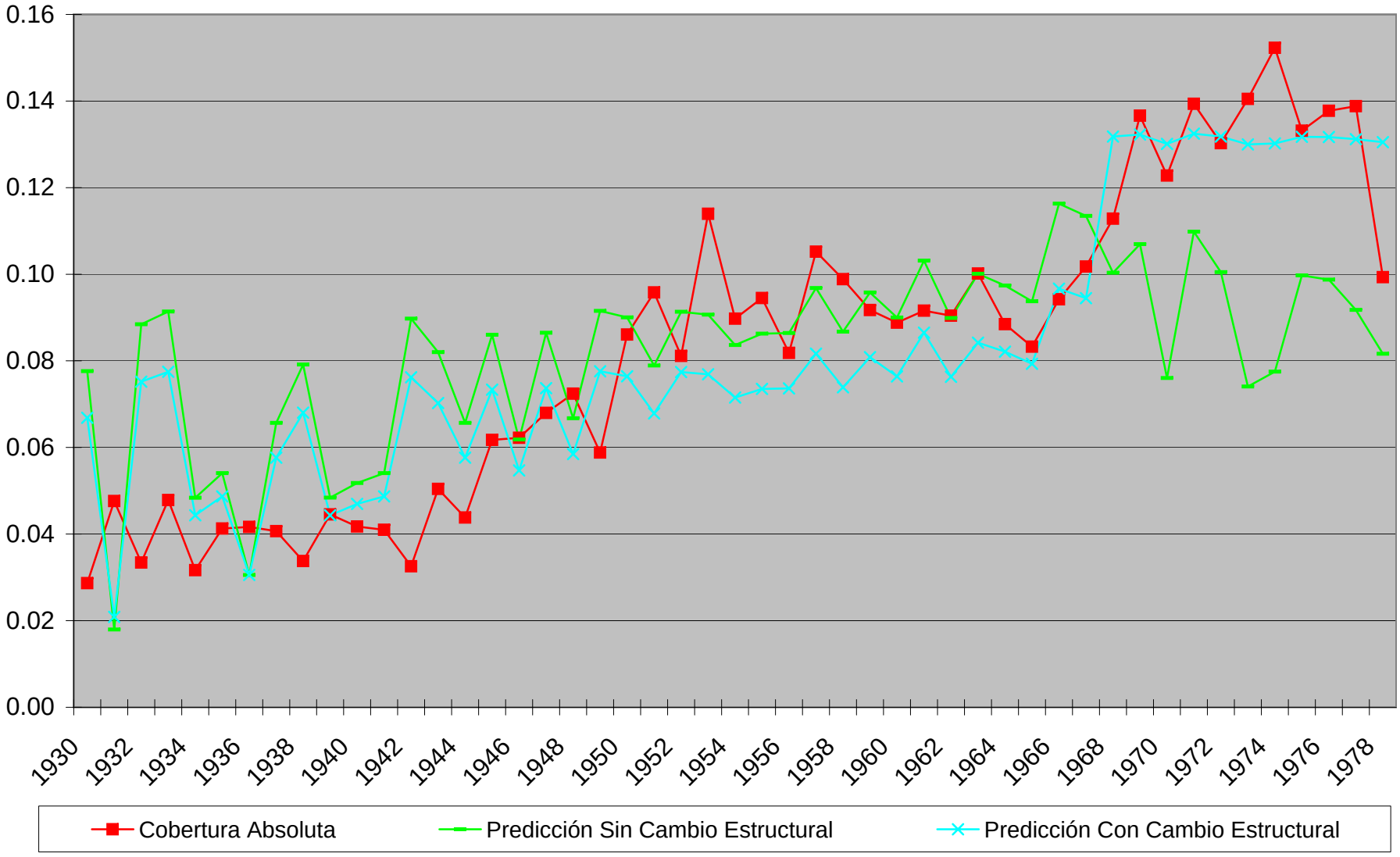
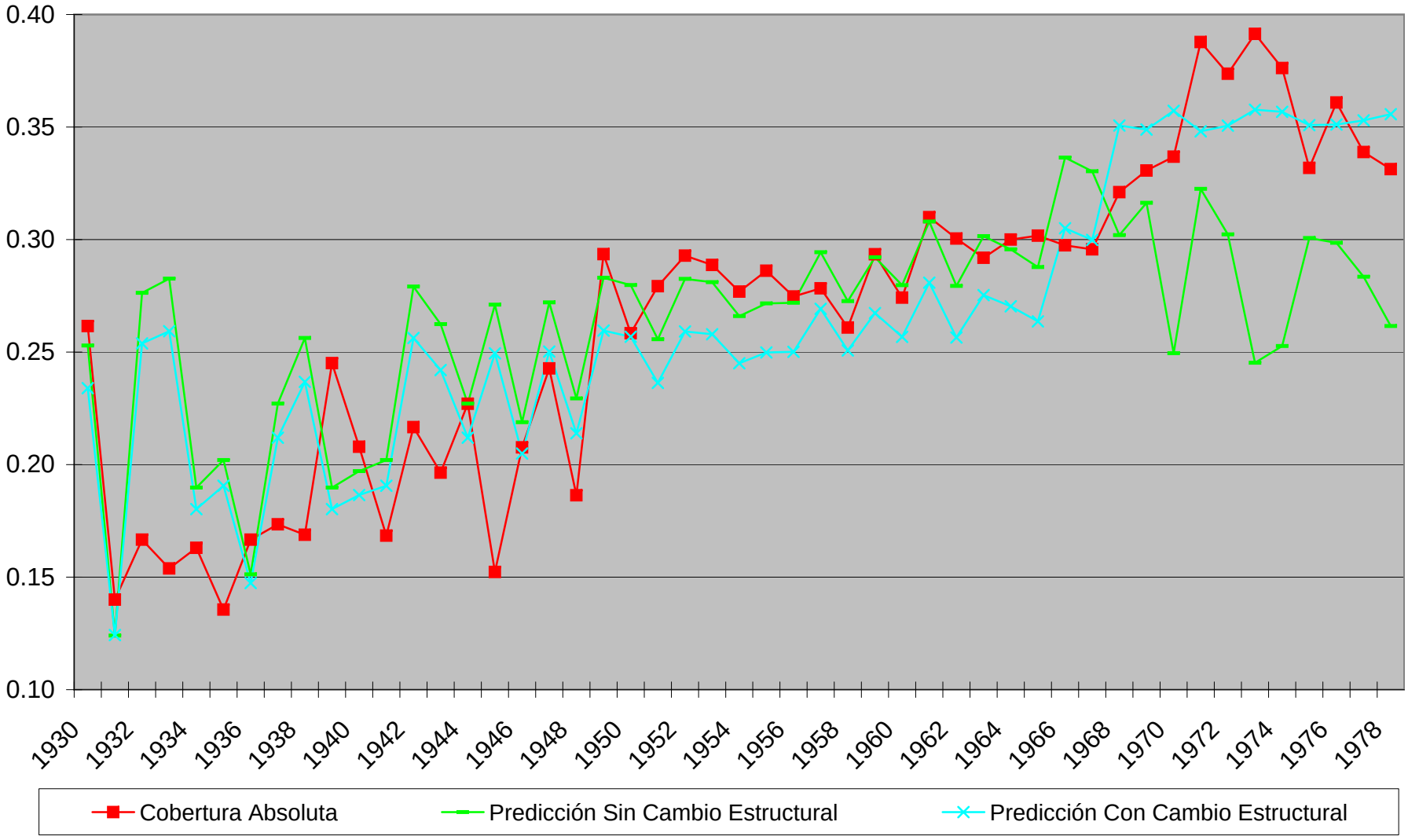


Gráfico 15b: Cobertura Absoluta y predicción para hijos de padres con 7-11 años de educación



REGRESIÓN 5: COMPARACIÓN DE HIPÓTESIS ALTERNATIVAS

Padres con 0-6 años de educación

Number of ob	49
F(8, 41)	535.46
Prob > F	0
R-squared	0.9894
Root MSE	0.01008

Cobertura Ab	Coef.	Std.Err.	t	P>|t|	[95%Conf.	Interval]
10 antes de n	2.07E-06	6.37E-07	3.24	0.002	7.79E-07	3.35E-06
10 antes de lo	1.55E-06	1.65E-07	9.39	0	1.21E-06	1.88E-06
padres solos	2.85E-02	6.93E-02	0.41	0.683	-1.12E-01	1.69E-01
C	-1.39E-01	3.41E-02	-4.08	0	-2.08E-01	-7.01E-02
1956_10 ante	-1.02E-06	8.17E-07	-1.25	0.219	-2.67E-06	6.30E-07
1956_10 ante	-1.73E-06	5.58E-07	-3.1	0.004	-2.86E-06	-6.01E-07
1968_padres	1.74E-01	1.36E-01	1.28	0.209	-1.01E-01	4.48E-01
D1956	1.90E-01	4.12E-02	4.61	0	1.07E-01	2.73E-01

Padres con 7-11 años de educación

Number of ob	49
F(8, 41)	1832.86
Prob > F	0
R-squared	0.9915
Root MSE	0.02743

Cobertura Ab	Coef.	Std.Err.	t	P>|t|	[95%Conf.	Interval]
10 antes de n	3.17E-06	4.58E-06	0.69	0.493	-6.08E-06	1.24E-05
10 antes de lo	2.58E-06	3.88E-07	6.64	0	1.80E-06	3.36E-06
padres solos	-2.87E-01	2.72E-01	-1.06	0.297	-8.37E-01	2.62E-01
C	-6.52E-02	2.54E-01	-0.26	0.799	-5.78E-01	4.47E-01
1956_10 ante	-1.10E-06	4.42E-06	-0.25	0.804	-1.00E-05	7.82E-06
1956_10 ante	-3.72E-06	5.97E-07	-6.23	0	-4.93E-06	-2.52E-06
1968_padres	5.09E-01	3.15E-01	1.62	0.113	-1.27E-01	1.14E+00
D1956	3.53E-01	2.28E-01	1.55	0.129	-1.07E-01	8.13E-01